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**AGRARIAN REFORM, AGRICULTURAL PLANNING,
AND ECONOMIC DEVELOPMENT IN PERU**

by
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**Final Report on Iowa State University and University
of Iowa Technical Assistance Program in Peru
for the Period September 19, 1961 through
June 30, 1977, extended to October 1, 1980.**

**In Cooperation with Peruvian Ministry of Agriculture,
National Planning Institute, Institute of
Agrarian Reform and other Peruvian Entities,
Lima, Peru.**

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John F. Timmons

**Agrarian Reform, Agricultural Planning and
Economic Development in Peru**

by John F. Timmons*

PART ONE: INTRODUCTION

Experiences and accomplishments of the Iowa Universities in providing technical assistance to Peru over a sixteen-year period, 1961-1977, are presented in this Report. These experiences include failures and frustrations as well as successes and achievements associated with technical assistance efforts during the period. Throughout this period, the Iowa Universities viewed their mission in terms of assisting Peru to pursue its goals of economic and social development with means acceptable to Peruvians. Ostensibly, this view represented the underlying philosophy of United States assistance programs to less developed nations, even though this philosophy has often become bent and occasionally broken by self-interests of both donor and recipient nations.

The period of the 1960's embraced turbulence within Peru culminating in two military coups in 1962 and in 1968. It also included strained relationships between Peru and the United States particularly in 1968 and in 1969 when Peru nationalized certain businesses in which U.S. companies had interests, as Peru endeavored to determine its national identity and to strengthen its national economy. Certain sanctions mandated by the Hickenlooper Amendment were invoked by the United States during this period resulting in severely strained relations between the two nations.

Although the Iowa Universities had no direct involvement in these developments, the technical assistance efforts occasionally

were adversely affected. Despite these exogenous events, over which the Universities had no control, technical assistance efforts went forward with a minimum of interferences except for relatively short periods of time. Philosophically, the University staff in Peru and in Ames and Iowa City accepted these developments as part of the process of change characterizing the development of Peru.

Furthermore, the University staff viewed technical assistance under the contracts basically in terms of education, with emphasis on knowledge (1) needed by Peruvians in serving their country and (2) within the abilities of the Iowa staff to provide.

During the sixteen-year technical assistance period, 44 young Peruvians received training at the Master's and Ph.D. levels in the U.S. and third countries; 19 Peruvians received short-term training outside Peru in subjects closely related to their positions. Hundreds of Peruvians received on-the-job training while working on their jobs in Peru.

Numerous research projects and studies were carried out on problems of national and regional concern with full Peruvian participation. These studies have been published inside and outside Peru. In addition, numerous policy memoranda were prepared for policy discussions and training activities.

The extensive training that took place under the Program leaves Peru the precious legacy of many Peruvians professionally qualified in the latest methods and theories of economics, statistics and related areas as well as numerous publications containing research methods and results applied to Peruvian problems.

As President Fernando Belaunde-Terry plans and implements development, these professionals and their studies will continue to

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constitute essential ingredients in Peru's continuing efforts toward economic and social development.

Purposes of Report

Two major purposes motivate the preparation of this report. First, the University is obligated contractually to provide USAID a final report on activities carried out under the contracts. Second, this report attempts to record and to share experiences gained by the Iowa Universities' staff, with scholars and administrators in other educational institutions, with administrators of national and international agencies, with state and federal legislatures and with interested citizens for their use in making future technical assistance efforts more effective.

Contractual Obligations

In fulfilling the contractual reporting obligation, it appeared desirable to include in this report the entire range of activities under four contracts for the entire sixteen-year period of continuing effort in Peru even though numerous reports previously were submitted under the four contracts constituting the Peru Program of the Iowa Universities.

Through bringing together results of the four contracts under which the Iowa Mission to Peru functioned, the flow and unity of the Iowa-Peru Program can be better understood and more fully reported. Also, this approach is important in serving the second objective of sharing the Iowa experiences with other entities and people interested in international assistance and technical cooperation.

Sharing Experiences

During the 1970s, U.S. technical developmental assistance to less-developed nations gradually diminished both in terms of a national commitment and in terms of assistance measured as a proportion of our gross national product. Increasing concern over domestic problems and disillusionment with

results of earlier technical assistance efforts have no doubt helped to induce U.S. reductions in both interest regarding and contributions toward developmental assistance to foreign countries. Another factor in this declining interest is the fact that foreign aid has no strong and effective lobby capable of competing with other lobbies.

Declining interest in foreign developmental assistance is reflected in the reduction of United States professionals who are interested in international development. Dr. Clifford R. Wharton, Jr. reaches the conclusion that "The fact of the matter is that the number of U.S. agriculturalists who are interested in international development has been declining alarmingly. On the one hand, mid-career professionals have moved out of the area into domestic agricultural programs. On the other, relatively few younger professionals are entering or even considering the field to begin with."¹

According to the Committee on Institutional Cooperation "The continuing struggle in Congress over appropriations for foreign aid, the sudden shifts in emphasis within the program, the many reorganizations of the administering government agency, and the short term in office of the foreign administrators have combined to foster a widespread loss of confidence in the permanency of the U.S. technical assistance programs."²

Despite the many shortcomings exhibited in U.S. foreign aid experiences, pressing challenges exist to which the U.S. must respond effectively. Otherwise, the U.S. will abdicate important world leadership responsibilities and opportunities.

During the 1980s, and the earlier the better, the U.S. must reconsider its responsibilities to less developed countries

¹Clifford R. Wharton, Jr., "Tomorrow's Development Professionals: Where Will They Come From?" International Banquet Address, American Agricultural Economics Association Annual Meeting, Urbana, Illinois, July 28, 1980, p. 2.

²Committee on Institutional Cooperation, "Building Institutions to Serve Agriculture." Lafayette, Indiana, 1968, p. 209.

(LDCs). At present, the technical assistance needs of these countries are serious and expanding. A clearcut response is urgently needed by the LDCs from the United States, the country that possesses the technology and the knowledge best able to fulfill their needs.

Also, the U.S., through its universities, foundations and other entities, possesses a rich reservoir of experiences gleaned from working in the LDCs during the 1950s, 1960s and 1970s. These experiences largely remain to be analyzed for the identification and selection of future approaches to extending developmental assistance to other countries in the most effective manner.

The Iowa Universities' technical assistance to Peru represents one of these experiences. This report endeavors to contribute to the continuing process of examining United States experiences—the accomplishments, the frustrations and the satisfactions—as essential elements in planning for the future.

Procedures in Report Preparation

Many sources of information were used in preparing this report. The four contracts and amendments thereto were reviewed. Monthly, quarterly, annual and end-of-tour reports of staff members were consulted. Research reports and bulletins were studied as were unpublished policy memoranda.

Experiences of staff members were discussed with them. Also, discussions and surveys were conducted with former Peruvian students and staff members of Peruvian universities and government agencies.

All of these sources, together with this writer's notes, memories and biases, constitute the references for this Report.

Organization of Report

The Report begins with this Introduction. Part Two summarizes major activities under the four contracts, with emphasis on their strengths and weaknesses.

Parts Three, Four, Five and Six are entitled Agrarian Reform in Peru; Agrarian Reform, Agricultural Planning and Economic Development in Peru; Agricultural Planning and Sector Analysis; and Agricultural Sector Analysis and Agrarian Reform, respectively. Objectives, procedures and results of activities carried out under each of the four contracts are presented.

Part Seven contains recommendations gleaned from the Iowa-Peru Program with possible application to future U.S. developmental assistance activities in other countries.

Finally, five appendices are included as follows: A. Training Program; B. Publications; C. Iowa-Peru Program Staff; D. University Staff Guide; and E. Budget.

PART TWO: SUMMARY OF IOWA-PERU PROGRAM

EMPHASIZING STRENGTHS AND WEAKNESSES

WITH IMPLICATIONS FOR FUTURE U.S.

TECHNICAL ASSISTANCE PROGRAMS

The Iowa-Peru Program of technical assistance to Peru by Iowa State University, with the cooperation and support of the University of Iowa, evolved initially from a request to USAID by the U.S. Ambassador to Peru, James Loeb. The Ambassador was interested in providing Peruvians with assistance in ameliorating their development problems, spotlighted by growing conflicts between peasants and landowners within the agricultural sector.

Within the context of the newly formed Alliance for Progress between the U.S. and Latin American countries, and at the request of Peru and USAID, a team of two Iowans went to Peru in September, 1961, to advise and assist the newly formed Agrarian Reform Commission and the Institute of Agrarian Reform.

The work of this initial team set the stage for a continuing technical assistance program, known as the Iowa-Peru Program, which continued over a sixteen-year period.

The Working Environment in Peru

Reporting on the Iowa-Peru Program requires appreciation of the working environment within which the Program functioned. Three generalized environmental periods may be recognized including (1) the Prerevolutionary Period, (2) the Revolutionary Period and (3) the Reconstruction Period.

The first period, roughly from 1961 to 1968, was characterized by seething turmoil, mostly beneath the surface, associated with superficial and cosmetic efforts by the government to deal with the underlying causes of the turmoil. These causes arose from more than a century of feudal and semi-feudal

institutions affecting Peruvian land and society. This environment provided excellent opportunities for training young and not so young Peruvians and for initiating inquiries into rather easily discerned problems that did not have easy solutions. This initial period of the Iowa-Peru Program is termed the Prerevolutionary period because it was fairly obvious that substantial changes were imminent; the only questions were when and how these changes would occur.

These questions were answered in part in 1968, when the military coup overthrew the government. The new government launched far-reaching reforms in both the agrarian and industrial sectors through a series of revolutionary decrees. This period is termed the Revolutionary Period, which lasted from 1968 through 1973 but actually continued in modified form until 1980 when the same President who was put out of office by the coup was re-elected President of the Republic. During this revolutionary period of change, many young Peruvians trained under the Iowa-Peru Program during the 1960s were provided opportunities to apply their knowledge in positions of importance within the new government. Also, studies which had been completed during the 1960s provided some of the directions and information for planning and executing the reforms.

This Revolutionary Period stressed national integrity and distrust of foreign interference in Peruvian affairs. Nationalization of firms with substantial U.S. private interests resulted in strained relationships between Peru and the U.S. The U.S. invoked the Hickenlooper Amendment, which seriously hampered the work of the Iowa Mission. Serious discussion was even directed to discontinuing the Mission. However, the Mission was continued on a reduced basis

and helped serve as a bridge for building improved relationships between Peru and the U.S. during the 1970s.

Beginning in 1974, with improved relationships between Peru and the U.S., the Iowa Mission was expanded and resumed substantial training and planning functions for assisting Peru in implementing and modifying policies instituted during the Revolutionary Period. The latter period, beginning in 1974 and continuing throughout the duration of the Iowa-Peru Program, is termed the Reconstruction Period.

Major Results

Throughout these three periods, the major thrusts of the Iowa-Peru Program continued in (1) training of Peruvians, (2) research and studies, and (3) advisory services provided Peruvian officials.

These three functions were highly inter-related. Training of Peruvians was essential in developing research and studies. Research and studies were essential both in training Peruvians and as an informational resource in advising Peruvian officials as they pursued their development process.

The Iowa-Peru Program provided educational training for 44 long-term participants and 19 short-term participants in the U.S. and in third countries. Additional hundreds of Peruvians were provided on-the-job training through contributions of Iowa Mission staff members. Many additional Peruvians attended workshops, seminars and training sessions in Peru, provided by members of the Iowa Mission.

Hundreds of publications, working papers and memoranda in which Iowa staff members participated were prepared and remain in Peru as an informational base for developing the nation and for training future students. Also, many Peruvians receiving training under the Iowa-Peru Program remain in Peru as important foundations for Peru's future development.

Training results of the program are detailed in Parts Three, Four, Five and Six and in Appendix A, "Training Programs," of this report. Likewise, studies, publications, working papers, and memoranda resulting from the Program are detailed in Parts

Three, Four, Five and Six and in Appendix B, "Publications."

Peruvian students were questioned regarding their educational experiences in the U.S., mainly at Iowa State University, with the following summarized results.

Six positive benefits were cited most often. The first was the professional attitude and competency gained from the student's study of theory and methods. The second was Iowa State's concept of "science with practice," which proved important in that science was put to work in practice to solve Peruvian problems. The third was the idea of the work ethic whereby individual achievement is based upon one's own capacity and effort. The fourth was the multidisciplinary approach of tying together knowledge from relevant specialties in problem solving. The fifth benefit, closely related to the fourth, was the teamwork between economists and other scientists in the analysis of problems that could not be understood or solved by one discipline alone. The sixth and final benefit was the open and friendly learning environment, including close faculty-student relationships.

The students emphasized seven weaknesses and difficulties regarding their educational experiences in the United States. The first was the limited applicability of certain economic theories to less developed country situations and problems. The second was the implicit assumption of valid data availability in the application of economic theory and models to Peruvian problems. Such data did not exist in Peru typifying conditions in less developed countries. The third was the language problem, while the fourth was the lack of background in principles of economics and mathematics as prerequisites for coursework. The fifth was insufficient emphasis on income distribution in their courses. The sixth was the insufficient attention devoted to institutions as the means for obstructing and for achieving increased productivity, improved income distribution and other economic objectives. The seventh and final weakness was that assumptions of factor availability implicit in theory and method were not appropriate as applied to less developed economies.

The above reactions to training in the United States, mostly at Iowa State University, were similar to reactions of foreign

students to U.S. educational training as recently reported by Fienup and Riley.¹

Valuable results of the Program also accrued to the Iowa universities. Twenty seven long-term and 35 short-term Iowa staff worked in Peru under the Iowa-Peru Program. Most of these staff members returned to Iowa State University and the University of Iowa with more enlightened views resulting from applications of their respective disciplines to Peru's problems. These staff members returned to their teaching and research duties much better prepared to instruct their domestic students and particularly the many foreign students who attend their classes. Furthermore, staff members with experiences gained in the Iowa-Peru Program have served and are serving international, national and state agencies in important leadership roles.

Iowa State received additional benefits from the Iowa-Peru Program including additional resources through overhead payments and the related ZID Grant for improving and increasing the capability of the University to serve the U.S. government in its accrued responsibilities to less developed countries. These resources provided funds for additional faculty which added to the University's capability. U.S. students at the University were benefitted from professional and social associations with students from another cultural area. This same benefit extended to the faculty, to citizens of the Ames Community, and throughout the state by visits of the Peruvians to farms and homes as arranged by the Office of International Educational Services. The Iowa-Peru Project also contributed to Iowa State University's extension of the role of educational responsibility to other countries as articulated in "Iowa State

¹Fienup, Darrell F. and Riley, Harold M. Training Agricultural Economists for Work in International Development, a Report Based on a Study Sponsored by the American Agricultural Economics Association and Funded by the U.S. Agency for International Development. Agricultural Development Council New York, N.Y., June, 1980, Chapters 2 and 5.

University's Role in International Affairs."²

More detailed information on present positions held by former Iowa-Peru Program staff is shown in Appendix C.

Educational Philosophy Evolving from the Iowa-Peru Program

The philosophy evolved from the Iowa-Peru Program includes the following elements.

Peru was interested in achieving progress toward economic growth, social development and political stability, and furthermore Peru desired technical help from the Iowa universities in making progress toward these goals. In pursuing these goals, it was recognized that the agricultural sector was inextricably tied up with the other sectors through fundamental interrelationships. Institutional change involving agrarian reforms was fundamental to Peru's progress toward the goals Peru sought to achieve. The Iowa-Peru Program was in major proportions geared to the needs of agencies established by Peru to plan and decide upon its courses of action in pursuit of its objectives. Thus, the Iowa-Peru program was in a major way dedicated to policy-oriented research as a basis for policy decisions.

The concepts of action programs by the Peruvians and action oriented research by technical assistance did not necessarily involve a dichotomy of purposes but instead a unity of purposes wherein Iowans assisted the Peruvian planners and policy makers in developing the basis for making the decisions they deemed necessary for progress in their country. The Iowa Mission proceeded with this task through bringing existing knowledge to bear upon the solution of problems obstructing Peruvian progress. The conjoint efforts by the Iowa Universities and the Peruvian entities in bringing about the necessary

²Report of the Committee on International Programs. Iowa State University, Ames, Iowa, January, 1969.

changes and the progress in achieving decisions were crucial and difficult.

In carrying out agrarian reform and economic development, Peru urgently needed trained professionals. The dearth of trained Peruvians in economics and related fields was the major reason why Peru requested technical assistance in economics and related fields from the Iowa Universities. In order that Peru might become self-sufficient in trained personnel, the Iowa-Peru Program undertook the training of Peruvians in the United States through formal study and in Peru through working directly with Peruvians.

Special effort was made to achieve a balance between crash and basic investigations that would encourage the Iowa-Peru Program staff to perform solid as well as timely studies. Both types of information were believed necessary for advising Peruvians in selecting courses of action leading to agricultural development.

The program was developed with a planning horizon, theoretically consistent with the goals of the Alliance for Progress, of ten years. A planning horizon of at least this magnitude was necessary in discharging the responsibilities assumed in Peru and in building the staffing flexibility needed to service the program. Various international aid programs had been operating in Peru for almost two decades prior to the Iowa-Peru Program.

The Iowa-Peru Program was in several respects a unique pioneering effort by an American university. It was certainly so for most of the people directly associated with the Program. Because of the pioneering nature of the program, flexibility was maintained in charting its course of action. There was also sufficient flexibility in the program and staffing to make improvements in activities as the needs became more clearly discernible through experience and understanding of Peru's problems.

We entered this program with the realization that minds are more important than money and that a relatively small financial input invested in an exceptionally competent but small group of scholars could help bring about significant improvements in economic growth, social development and political stability in a less developed country such as

Peru. The foundations of these improvements rested on (1) the effective extension of relevant ideas and facts to Peruvians in planning and policy positions in their government, and (2) training Peruvians to become self-sufficient in developing and analyzing their own ideas and facts for use in planning and policy making, to the end that their needs for outside assistance might be lessened and ultimately eliminated. This is the ultimate test of a successful technical assistance program. But the task is not easy; nor can it be accomplished within a short period of time.

Our role encompassed (1) the transfer, adaptation and generation of knowledge for use by Peruvian decision makers and (2) training Peruvians to perform this function for themselves at the earliest possible date.

Some of the information possessed in our knowledge reservoir was directly transferable to Peruvian conditions. Other knowledge had to be adapted to Peruvian conditions. Still other knowledge required in the Peruvian decision making process had to be developed. Thus, there existed a high-to-low continuum of knowledge transferability, depending upon specific informational needs of Peruvian decision makers and our reservoir of transferable information relevant to their needs.

Within the context of this continuum, we endeavored to transfer the maximum of knowledge extant in our reservoir which Peruvian decision makers needed in making the decisions with which they were faced. Likewise, we adapted to the maximum extent knowledge to Peruvian informational needs. Finally, we assisted in the generation of knowledge needed by but not available to Peruvian decision makers. Obviously, this process demanded that priorities of our work be established in terms of the needs of Peruvian planners and decision makers. Only then could the information aid them in identifying and appraising alternative courses of action for making and implementing vital decisions for achieving economic growth, social development and political stability.

Several relevant questions arose at this point. They were: (1) What are the decisions, with priorities attached, that Peruvian planners and decision makers are

faced with now and in the future and what information do they want and need in making these decisions? (2) What knowledge from our reservoir is directly transferable to Peruvians as an aid in planning and in making decisions? (3) What knowledge from our reservoir may be adapted and developed through short-term investigations? (4) What are the informational needs beyond those to be satisfied under (2) and (3) above which may be provided through investigations? (5) To what extent and in what manner are our current activities directed to (1) above, using (2), (3) and (4) means?

Under this construct, the Peruvians necessarily took their policy actions through decision planning, decision making and decision implementation. We assisted them through providing or helping provide the information, facts, ideas and methodologies with which their decisions might be fashioned or improved in terms of their objectives. We do not, nor does any university with which we are familiar, have all the answers regarding technical assistance to another country. However, the articulation and assessment of experiences which has been attempted in this report should contribute to improved methods and content of future technical assistance.

Some Reflections on the Iowa-Peru Program Regarding Training

In retrospect, the training program embracing training components outside as well as inside Peru, was probably the most effective and lasting part of the program even though its cost in funds was relatively small. The major reason why less developed countries need technical assistance is because of the lack of sufficient numbers of adequately trained domestic personnel. This need is best served by training people from within the country to relieve the need for importing outside personnel.

During the training period, a resident staff of foreign advisors is desirable to assist with in-country training in connection with research activities and advisory functions. The resident staff of advisors also helps in selecting prospective students for

outside country training and in helping students who have completed their training to become situated in productive positions.

In most cases, students pursuing advanced degrees outside the country should perform their thesis research within their native countries for several reasons. First, this approach maintains their interests in the problems of their countries and enables them to make contributions to the information base of their countries as a part of their graduate training program involving preparation of theses, dissertations, creative compositions, and research papers. Secondly, this approach contributes to their interest in returning to their native countries to apply their acquired knowledge.

Thirdly, this approach induces students and their advisors to adapt theories and methods acquired from foreign universities to conditions within their native countries. This approach was followed in many instances throughout the Iowa-Peru Program and was at least partially responsible for the large percentage of returnees to seek and find employment within Peru.

During the initial two contracts, Iowa Mission personnel exercised an important role in selecting and following up on students sent to the U.S. or third countries for training. During the period of these two contracts, most of the Peruvian students were trained and returned to work in Peru. During the latter two contracts, the training component was sharply curtailed with an attending diminution and eventual cessation of student trainees being trained abroad, even though such training was needed in several subject matter areas.

Importance of University Commitment

The success of a foreign program depends heavily on its staffing by the university, which in turn depends upon full and enthusiastic support by the staff and administration. This support must derive from a full commitment at the highest levels of administration. This commitment must be reflected in supporting the foreign program requirements as energetically and aggressively as

support for teaching, research or extension activities on campus and throughout the State.

Selection of staff for the foreign program must be given equal importance with staff selection for teaching a principles course, or undertaking a high priority research or extension activity. The staff member selected for the foreign project must possess the assurance that the administration, as well as his or her colleagues, regard the foreign work on a par with the campus work and that recognition and promotion will be forthcoming for foreign work well done as would be forthcoming from domestic performance.

In other words, the foreign project must be fully legitimized and supported as an integral part of the University program. Such was the case with the Iowa-Peru Program. Both Presidents Hilton and Parks provided full commitment and support for the Program. This commitment was reflected through the college deans and Department Chairpersons Fox and Benake in their unceasing support of the program.

Importance of Program Continuity and Periodic Evaluation of Performance

Although the Iowa-Peru Program continued for 16 years, the contract planning horizon at any particular time seldom exceeded one or two years. Even though the contract required two years service of long-term staff in Peru, firm budgets were usually for only one year. Obviously, technical assistance programs, to be successful, must be planned and programmed for five to ten years or even longer in most cases, depending on need. Of course, use of the grant concept, as applied in the 21-d grants and as is expected to become effective in the Title XII grants, would help remedy this shortcoming in the contractual planning horizon. Under longer term contracts in keeping with the nature of the foreign work to be performed, periodic evaluation of performance should be conducted to check upon contract performance throughout the duration of the contract.

Another serious problem with planning horizons and continuity of work that would

not necessarily be remedied by extending the contractual term is the changing directions of country programs frequently accompanying the change of USAID Country Directors and other AID personnel within the country.

The country USAID Director (and other administrative officers) with a two-year assignment, endeavors to develop a one- or two-year program so that results may be visible toward the end of his or her term. This approach frequently became disturbing and unsettling in the Iowa-Peru Program. It certainly interfered with the productivity and morale of the staff and with our professional relationships with the Peruvians. For these reasons, relationships of Iowa staff with the Peruvians were frequently better than with our fellow countrymen in USAID.

Selecting and Preparing Staff Members for Serving Abroad and Assisting Their Return to the Campus

The foreign technical assistance program can be no better than the quality of the staff. Foreign assignments require the most competent and personable staff members. Successful foreign assignments will not tolerate the use of ineffective personnel whom the university desires to retire or eliminate from the campus. In many respects, the quality of staff for foreign service demands a higher quality staff than required by domestic assignments.

Besides being technically competent, the foreign advisor must become fluent in the foreign language, knowledgeable in the new culture and geography, and possess a keen desire to be helpful to associates in the other country. Fortunately, because of support for the Iowa-Peru Program by the ISU staff and administration, the Program staff represented exceptionally competent and highly service-motivated people.

From the Peru experience, younger Iowa staff members established rapport with their Peruvian counterparts and worked very effectively with them.

Adaptation of spouses and children of staff members to the foreign environment proved to be an important consideration in

the productivity and satisfaction of staff members. Consequently, measures were taken to provide families of staff members with the same language training and cultural preparation provided staff members.

A University Staff Guide for staff members contemplating service in Peru was prepared and updated from time to time from experiences of staff members and their families serving in Peru. This Guide (Appendix D) was provided all staff members and their families expecting to serve in Peru and proved helpful to them in making the transition.

The return of staff members to the Campus is as important an adjustment for staff members as the assignment to a foreign country but in different respects. During a stay of two years in Peru, many changes occur on campus, some of which directly affect employment conditions for the returnee. The returning staff member deserves and requires special consideration and assistances in returning to a pleasant and productive environment that will fully utilize his or her experiences. In cases of younger staff members without tenure, the University provided returnees with six months to a year of campus employment to provide them opportunities to make adjustments and to become familiar with and to select employment opportunities.

Continuing Special Assistances to Peru Following Completion of the Program

The successful technical assistance program leaves in its wake a legacy of professional relationships and continuing programs and activities. This legacy does not terminate abruptly with the termination of a contract or a formal program. There remains the need for maintaining professional relationships and joint participation in activities of concern to both the Peruvians and the Iowans. Considerable amounts of such interchanges have continued through joint participation in publications, workshops and

seminars. Provision for these follow-up activities should be included in a follow-up agreement to an expired contract. This would encourage and abet continuing activities on a select and limited basis.

In Conclusion

The Iowa-Peru Program continued to provide training, research and advisory assistance to Peru by the Iowa Universities over a period of sixteen years. Peru benefited from training provided to sixty-three young Peruvians in special courses and advanced degrees outside the country. In addition, hundreds of Peruvians within Peru benefited from on-the-job training, special training courses and seminars provided by Iowa Mission staff. Numerous research reports, memoranda and training materials remain in Peru for future use in developing both people and policies.

Iowa State University and other U.S. institutions also benefited through the experiences of 52 staff members who served in Peru and enhanced their knowledge and skills in extending their disciplines to difficult problems. The United States benefited indirectly through providing technical assistance to Peru and through providing U.S. educators with experiences in Peru, which adds to the strength of U.S. educational resources. The U.S. also benefited from the services and posture of the Iowa Mission in Peru during a period of severely strained relationships between the two nations. These strains have been mended partially, at least, through the Iowa Mission and its legacy of trained students, completed studies and good will in Peru.

Finally, the work of the Iowa Mission was recognized by Peru in the form of the presentation to Dr. Frederick L. Mann (Chief of Party of the Iowa Mission in Peru) of the Order of Merit for Services to Peru, one of Peru's most prestigious and coveted honors, the first time in 20 years it had been presented to a U.S. citizen.

PART THREE: AGRARIAN REFORM IN PERU:

ICAC-2226 (1961-1962)

The genesis of the Iowa-Peru Program occurred in 1961, when the U.S. Ambassador to Peru (James Loeb) requested the U.S. Department of State to provide technical assistance to Peru on the economic and legal aspects of land reform problems. This request was prompted by the growing seriousness of agricultural land tenure problems in Peru, to which the Government of Peru responded with the appointment of a Land Reform Commission and the establishment of the Institute of Agrarian Reform.

Accordingly, the U.S. International Cooperation Administration (predecessor of USAID) communicated the Ambassador's request to Professor John F. Timmons, Iowa State University. During the summer of 1961, Contract ICAC-2226 was negotiated between Iowa State University, the University of Iowa and USICA and signed September 8, 1961.

Contract Objectives

Under the Contract, "The Contractor agrees to use its best efforts to render technical advice and assistance to the cooperating country for the purpose of analyzing the economic and legal aspects of land reform problems..." As further specified in Appendix B of the Contract, "The Contractor is to assist the Cooperating Government by analyzing existing conditions leading to the development of solutions of land reform problems which will permit progress toward economic growth and social improvement in the Cooperating Country."

Procedures

Under the Operational Plan of the Contract, the "Contractor's staff members will analyze the economic and legal aspects and probable consequence of land reform legisla-

tion and will advise the USOM on the activities that may be undertaken which will assist in guiding the Cooperating Government on a sound land reform program. The Contractor will send two land reform specialists to the Cooperating Country initially for a period of approximately two months along with a supporting consultant who will remain in the Cooperating Country for approximately ten months. During this period the supporting consultant will collect data that will assist in identifying existing problems and possible remedial alternatives, permitting a continuing study leading to the development of solutions of land reform problems, which will permit progress toward economic growth and social improvement in the Cooperating Country. One of the two land reform specialists will return to the Cooperating Country for a period of approximately one month to analyze data collected and to make final recommendations."

In accordance with the Contract, Professor John F. Timmons, Department of Economics, Iowa State University, and Professor John C. O'Byrne, College of Law, University of Iowa, and Antonio Giles, Peruvian graduate student working with Professor Timmons, went to Peru in September, 1961.

With the assistance of Ambassador Loeb and USOM Director Rogers, discussions were held with members of the Peruvian Agrarian Reform Commission and with Director Pablo Salmon and Investigations Director Lander Pecora, Institute of Agrarian Reform. Through these discussions a plan of work and procedure was detailed.

This plan of work included identification of pressing agrarian problems and guidelines for possible amelioration of the problems.¹

¹The remainder of this report on work performed under Contract ICAC-2226 draws heavily from the Final Report of this Contract entitled, "Economic Development Through Agrarian Reform in Peru: Part I Nature of

Initially, the Iowa team proceeded through (1) discussions with a wide range of informants throughout the country whose names were on file at Instituto De Reforma Agraria, (2) a review of relevant reports and publications dealing with agrarian problems (on file at Instituto De Reforma Agraria), (3) inspection of projects dealing with agrarian reform including the Cornell-Vicos Project in Ancash, the Credit Union Projects in Puno, the irrigation works in Arequipa and the Supervised Credit programs in Cuzco and Puno, among others, and (4) study of the proposed agrarian reform law.

These discussions, reviews, inspections, and studies suggested that (1) substantial changes in agrarian institutions were imperative, (2) there was widespread recognition of the imminence of institutional change, (3) potential means for guiding these changes were implicit within the current situation, but remained to be articulated, developed and translated into policies and programs, (4) facts and ideas were needed to help guide the development and administration of agrarian reform along orderly avenues of economic development of the nation and social improvement of the people, and (5) proposed legislation offered a reasonably satisfactory base if implemented with adequate research, trained personnel, and institutional change.

The 1962 Report emphasized that agrarian problems in Peru presented serious obstacles to economic development of the nation and to social improvement of the nation's people. On the other hand, the Report held that agrarian reforms could be fashioned as necessary structural means toward economic development and social improvement. Used in this context, economic development meant increased per capita productivity (defined as average annual real per capita income) and wider distribution of the benefits of this product-

and Relationships Between Agrarian Reform and Economic Development and Part II Analytical Structural Change Model for Analyzing Agrarian Reform Structures and Remedial Alternatives in the Sierra," by John F. Timmons and John C. O'Byrne under Contract ICAC-2226 between USAID and Iowa State University, February, 1962.

ivity among the nation's people. Likewise, social improvement meant development of individuals within the country who could work toward higher levels of living as informed the participating members of the nation's social, cultural, and political life. Agrarian reform meant institutional adjustments within the agricultural sector contributory to and consistent with economic development in other sectors of the economy.

Under the terms of the contract, two alternatives were considered.

The first was a general analysis of agrarian problems and possible agrarian reforms in light of economic and social development of the nation and its people. This alternative was rejected because many reports of this general nature already existed and because there was an apparent need for a more penetrating examination of pressing problems within a particular region.

The second alternative was the selection for more intensive study of a particular area of Peru which reflected serious regional and national conditions.

This second alternative was chosen and limited largely to the Sierra. There, the government was considering shifting land ownership from the large haciendas owned by churches, beneficencias, corporations, and private individuals to individual Indian operators and to Indian communities, with technical information, management assistance, and operating capital provided to the new set of land owners and operators.

The Sierra was selected for concentration (1) because of the apparent severity of agrarian problems and possible opportunity for their solution, and (2) because immediate steps appeared necessary to lessen tensions and to contribute toward economic and social development of the people in that area as a necessary and integral part of national growth, development and stability.

Conditions for economic growth included an existing situation characterized by (1) unused or underused productive resources, (2) unused or underused techniques of production, (3) possibility of available resources, technology, and management and (4) possible reform of existing institutions impeding economic growth. Under existing conditions, the rate of positive change in real per

capita income appeared less than could be realized if the four categories of conditions were improved.

Some National Considerations

Peru's population was approaching eleven million people in the early 1960s and increasing at an annual rate in excess of three percent, adding about one-third million people each year to the nation's population.

The nation's gross national product had to increase at a rate at least as great as the population growth rate in order to maintain 1960 per capita income estimated at \$116 per year. Possibly this statistic underestimated per capita national income because of barter and other transactions not recorded in the national accounts. Per capita increases in income required proportionately greater increases in national productivity. Population growth constituted either a potential resource or a potential drag on the economic and social development of the nation, depending upon the development of the nation's resources and productive employment opportunities for the people.

Approximately 60 percent (estimated between 58 and 62 percent) of the Peruvian people were engaged in agriculture. Thus, the economic and social improvement of the nation and its people in the immediate future appeared conditioned largely by what happened within the agricultural sector of the economy. Yet, the agricultural sector's contribution to the national product appeared to have declined in both absolute and relative terms over the decade of the 1950s. Here, again, estimates of the agricultural sector may have been on the low side because of statistical difficulties in estimating the contribution of productive and exchange activities outside the market economy. Between 1950 and 1960, agriculture's contribution to the national product declined from 9.4 to 8.4 billion soles while the national product increased from 25.5 to 35.8 billion soles. The national product increased somewhat erratically (in constant soles) by roughly the rate of population growth leaving little or no increase in per capita production as the basis for per capita economic

improvement.

In searching for avenues to increased per capita productivity, three essential lines of attack were suggested.

First, increased employment opportunities in the nonfarm sectors of the economy were needed to provide jobs for unemployed and underemployed people and for future population increases. With a mean age of about 24 years for the population, coupled with the relatively large number of youths joining the labor force each year and the relatively few job opportunities released by retirement and death, the need for new employment opportunities in the nonfarm sector became apparent.

Second, extension of the cropland base through irrigation, clearing, drainage, and colonization constituted an important means for increasing agriculture's contribution to national productivity through providing employment opportunities for both farm youths joining the labor force each year and for unemployed and underemployed farmworkers on the minifundia, haciendas, and in the indigenous communities. The San Lorenzo irrigation project in Piura, the La Joya irrigation project in Arequipa, the Puno-Tambopata development in Puno, and the Pucallpa colonization project in Loreto were cited as examples of projects for extending the agricultural land base. These projects involved considerable outlays of funds, in terms of both bringing land into production and providing necessary infrastructures including transportation, marketing, educational, and community facilities for the new communities. Additional problems of settler selection, financing, tenure arrangements including land and water titles, markets for new or expanded output of products, physical potentialities of the land, and research for livestock and crop production were involved in these projects. Furthermore, major exportable products, such as cotton, coffee and sugar, to be produced through these projects were subject to terms of international trade and were expected to aggravate surpluses already evident in the world markets.

Although extensions of the agricultural land base appeared as one of the essential long-run avenues for economic development in Peru, even large expenditures of capital in this direction were not expected to provide

adequate job opportunities in the short run—say the next five years. For example, a cursory appraisal of the number of families to be provided land settlement opportunities by projects underway and in immediate prospect suggested that a relatively small proportion of the candidates for job opportunities in agriculture could be accommodated by settlement opportunities in the near term. There existed a tendency to emphasize colonization and settlement opportunities as a remedial approach to agrarian reform probably because this approach would not disturb the status quo in the settled areas. However, it became clear that this approach did not tackle the basic institutional problems of agrarian reform in the settled areas, particularly in the Sierra. There was little question but that significant opportunities for settlement and colonization existed in Peru's future, but the development of these opportunities had to be weighed carefully not only in terms of investment opportunities for the economy as a whole but especially in terms of the priority of investment in agrarian development. This would have involved a program of research, training and investment beyond the scope of the 1962 Report. In the meantime, pressing problems of agrarian reform remained in the Sierra and the Coastal areas. But the most pressing problems appeared to exist in the Sierra.

Third, existing agricultural areas in the Sierra and on the Coast provided an immediate opportunity for agrarian reform. Here is where serious problems existed and here is where most of the nation's population resided. The Sierra was, therefore, selected for further consideration in the Report and in the initial research expected to follow. Here was the major source of future migration to the Montana and Jungle areas of new land development, to the Coast and to industry. Serious problems existed with prospects of becoming acute but immediate changes could be made.

These three major avenues to economic development and social improvement of the country, outlined above, appeared complementary and essential ingredients for progress. In pursuing these avenues, provision of capital, technical assistance, and institutional change became fundamental requisites to progress.

Study Results of Agrarian Problems in the Sierra of Peru¹

The Sierra area was selected for special consideration because of the pressing problems in the area and because there appeared to be alternatives for ameliorating these problems. The economic and social status of the Indians in the Sierra, who constituted somewhat less than one half of Peru's population, remained largely stagnant from the Inca period, through the colonial period and into the modern times.

In the early 1960s, the area evidenced many prospects of change. Stimulated by contacts with the outside world through migrations back and forth between areas, by communist agitators and by public discussions of agrarian reforms, the Indians of the area were undergoing an awakening and self-examination of their plight. Conditions which had been taken as inevitable for centuries were being questioned. Aspirations for economic and social improvement were developing, thus creating a gap between their present conditions and their aspirations for improvement. Substantial changes were evident and the major question was how change could be brought about in an orderly manner that would contribute to the economic development of the nation and the social improvement of the people.

Agrarian structures in the Sierra appeared complex and did not permit sweeping generalizations concerning either the problems or possible solutions. Awaiting further study on the magnitudes and kinds of institutions within the area, certain qualitative statements were suggested regarding existing conditions.

The Sierra was characterized both by latifundia (large estates) and by minifundia (small holdings). The large estates, dating from the colonial period, included the most productive land of the region. Only small parts of the estates were in cultivation,

¹These results are presented in considerable detail since they provide insights, motivation and basis for the subsequent Contract AID/la-49 executed in 1962 and continuing through 1968.

with large areas unutilized or underutilized. On and beside these large estates lived the Indians, usually occupying inferior lands used for crops and grazing purposes. At this point, a distinction was made in the systems of land holdings by the Indians. Three major systems were identified: (1) native communities (communes or ayllu), numbering around 4,500, of which only 1,800 were recognized and protected by legislation, (2) small independent proprietors, usually with unproductive and insufficient lands, sometimes known as parcialidades, and (3) the tenants, workers, and colonos on the large estates owned by churches, beneficencias, corporations, and individual families.

Within the community system of land holding, three subtypes were characterized as follows: (1) Both farm and pasture land belonged to the community and certain lands were distributed among the members periodically for various terms of years with other lands operated collectively. (2) Farm lands were owned individually, but pasture lands and water rights were held in the community and grazing and water rights were allocated among individuals. (3) The Indians of the community were independent land owners but relied upon the community to defend their rights and land titles against encroachments from outsiders.

Of course, there were many variations within these systems. Latifundia and minifundia existed within a land holding as well as adjacent to a particular holding. Fragmentation of land into many small and scattered tracts, aggravated by inheritance practices and population increases, was found throughout the Sierra and accentuated the problems of underemployment.

Workers and colonos with their families on the large haciendas were considered part of the hacienda. Their expected tenure appeared to enter into the sale price of the hacienda.

Problems arising within these systems were suggested under the following categories: (1) haciendas, (2) Indian communities, and (3) individual proprietors (including parcialidades).

Problems Arising Within Large Haciendas

Although conditions undoubtedly varied among large haciendas, the major problem appeared to center on the maintenance of a system in which the owner or manager of the hacienda exercised the role of patron and the Indian families were, in effect, his serfs. Under this system the colonos provided the owner with (1) household servants in the casa hacienda or in his town residence, (2) care of livestock and (3) labor (and occasionally tools and oxen) on the hacendado's farmland in return for the use of small plots of land (usually inferior and on hillsides) and/or pasture lands in or on the mountains. Labor services provided by the Indians usually were fixed at two to five days a week contributed from the Indian's family, and frequently were cumulative.

Since the Indian families had lived on these small tracts of land on the haciendas for generations, they came to feel they had rights in these tracts even though legal title remained in the hacendado. Consequently, when their plots were disturbed or shifted by the hacendado, particularly upon sale of the hacienda, the Indians resented and resisted these changes.

With increasing frequency the Indians also resented and resisted the labor service to the hacendado. This development led some of the hacendados to become interested in selling their lands and shifting their capital to another form of investment. If the hacendado pressed the Indians to perform labor services or if he tried to evict them from the land, particularly with the help of the police, serious conflicts erupted. Increasing numbers of incidents of this type were reported in the press during the early 1960s.

The hacendado's lands were usually the most productive, frequently the irrigated lands in the valleys, while the Indians gravitated to the hillsides and mountains for tracts of land on which to produce food for their families. Frequently, these hillside tracts were so steep that field work had to be done by hand. Also, serious erosion was

becoming evident as pressure was exerted on the land to provide necessary food.

The colonos under the patron possessed little or no opportunity to develop their talents, abilities, and personalities. As a result, their major outlets from serfdom were coca, chicha, and fiestas which further eroded their limited funds and levels of living. In earlier periods, the hacendado was expected to provide schools and churches for the Indians living on his hacienda. Later, however, educational opportunities appeared extremely limited. These conditions helped create a situation which generated serious dissatisfactions, instability, and potential conflict.

Modern technology rarely found its way into the Sierra. Farming methods and tools were little improved over the colonial period. Herein was an opportunity to improve productivity with the aid of capital, technology, and improved management.

Problems Arising Within Indian Communities

Indians within the communities of the three types previously mentioned experienced severe problems of developing themselves economically and socially. Their inadequate land resources became increasingly segmented and parcelized through inheritance practices and population growth. Their holdings were usually on unproductive lands. They lacked capital in farming operations. Modern technology was largely unknown to them. They were frequently involved in costly litigation with neighboring hacendados over legal titles and boundary disputes.

Those communities which became recognized by special legislation, enjoyed securities denied the unrecognized communities in that their property, when defined, was protected by law. However, even these communities faced with expanding populations within their limited land areas and archaic production practices, experienced serious economic difficulties.

Problems Arising Within Small Proprietorships

An unknown number of small-scale Indian land owners were not members of an ayllu (or

commune) and hence were not eligible for the legal protection of a community. These individuals did not have sufficient pasture or farmland to support their families. Hence, they sought day labor on the neighboring hacienda. In the latter instance, these small proprietors committed themselves to personal services or payments in cash or in kind to a hacendado in return for the use of some hacienda land. These small-scale proprietors were largely at the mercy of the hacendados. Faced with the necessity of providing basic subsistence for their families, their bargaining power was practically nil. Their farming methods and equipment were of ancient character and they lacked capital and technical knowledge, as well as land.

Basis for Agrarian Reform Within the Sierra

The agrarian situation in the Sierra, as complex and difficult as it appeared, presented possibilities for improvement which could contribute to the development of the nation, to economic and social improvement of the people, and to political stability of the area.

First, the Cornell-Vicos project in the Callejon de Huaylas of Ancash, demonstrated how the Indian communities on a feudal hacienda strove to overcome centuries of serfdom and to achieve economic and social development within the relatively short space of decades. This project constituted a potential guide to pilot other areas of the Sierra into economic and social progress. Further analysis of this project was recommended in extending the experience to other areas and in determining the need for interim leadership or a "substitute hacendado." Questions were raised regarding this "substitute hacendado." What would be the costs of the undertaking, and what measures could be taken to prevent the creation of a closed economic entity faced with limited land resources in relation to population growths.

Second, provision of operating capital and technical assistance to Indian communities by SIPA in Puno and by the Redevelopment Corporation of Cuzco demonstrated how operating credit extended with technical assistance could move the productivity of Indians and

land upward and at the same time provide incentives for the Indians to improve themselves. Barring natural catastrophes such as drought, earthquake, and frost damage, the Indians exhibited an exceptional repayment record. Records examined in the Puno and Cuzco offices of credit programs revealed a repayment record of 99 percent.

Third, there appeared to be a growing willingness on the part of hacendados (private individuals and corporations), beneficencias, and churches to transfer ownership of their lands to Indian communities and individuals if the means and organization could be found for making transfer and for following up the transfer of ownership with supervised credit, including operating capital and technical assistance. Some documentary evidence of this willingness to sell was found in the files of the Institute of Agrarian Reform.

However, sufficient and adequate institutions did not exist whereby land transfers could be implemented. Also, the matters of land titles and land valuation remained as critical problems.

Fourth, the Indian colonos and communities with their strong desires for land ownership were interested in acquiring land if means could be found to effect the transfers and to provide the operating capital and technical assistance to help assure success of their farm operations after ownership of lands had been obtained. Furthermore, the Indians were believed to possess considerable hoarded cash which could be used in making a downpayment on the land and/or application to necessary operating capital. The credit unions of Puno and the Vicos offered evidence of hoarded cash which could have been brought into use once the incentive and mechanism was provided.

Fifth, the Vicos experiment in Ancash and the credit programs in Puno and Cuzco demonstrated how the potential of the Indians may be aroused and developed through provision of incentives and aspirations to better themselves and of the organization through which these incentives and aspirations could be achieved.

Sixth, the absence of objective technical studies in the Sierra on agrarian institutions handicapped the formulation and

implementation of sound agrarian reforms. Similarly, the scarcity of qualified personnel to undertake these studies remained a major problem. As a start toward providing foundation information on existing problems from which might be fashioned agrarian reforms geared to solving the problems of the area, a study was completed in the Cuzco area.¹

Seventh, dissatisfactions with the agrarian structures in the Sierra were serious and mounting. These dissatisfactions were expected to turn to more violent forms of expression if the basic problems discussed earlier remained unattended. Hence, timeliness appeared to demand that efforts be taken to understand and to remedy the agrarian problems in the Sierra. Without waiting until the urgently needed technical studies had been made, but with the assurance that such studies were being undertaken to fortify change with the strength of facts and ideas, a possible approach for agrarian reform was outlined.

General Considerations for Agrarian Reform in the Sierra

An approach to the Sierra agrarian problems was developed from the first five points presented above. This approach involved initially a shift of land ownership from the beneficencias, churches, individuals, and corporations to the Indian colonos and communities as part of the comprehensive reform. Intrinsicly within the approach were (1) long-term amortized low interest credit to the Indian communities and individual farmers for the purchase of the land, (2) operating capital credit geared to the adoption of productivity increasing farm technology, (3) technical help to the Indians by competent and dedicated technicians to protect the credit and assure its effective use in carrying out measures and practices to increase productivity and (4) provision of job opportunities in other sectors and areas of the economy.

¹Antonio Giles, "Agrarian Problems in the Cuzco Area of Peru." Unpublished, 1962.

In formulating and in carrying out this approach to agrarian reform in the Sierra, certain factors were recognized.

First, the appraised price of the land for purposes of (1) compensating the owners and (2) sale to the Indians must be kept within the productivity of the land without capitalizing into the value either the present contributions of Indian labor or the benefits from future operating capital or applied technology.

Second, compensation received by the land owners should be rechanneled into the Peruvian economy toward the end of developing industry and services which would provide job opportunities for existing and increasing population, an appreciable part of which would come from the Sierra. This could have been accomplished by issuing to the land owners, as compensation under voluntary transfers, certificates of investment or bonds of limited negotiability which would be invested in Peruvian industry to furnish needed capital for developing job opportunities and for furthering the economic development of the nation. Caution was stressed that the funds not escape from the country in the form of "flight capital" and that funds now idle in land could be released and used to energize economic activity within Peru.

Third, technical production assistance applied with operating credit must be considered a social overhead cost along with other types of education, health, and improvements in individuals and must be borne by the nation as a whole. The part of this investment in the human agent, "human capital," promised rewards in both the economic development of the nation and in the development of latent abilities within individuals.

Fourth, community organizations and cooperatives should be developed in keeping with local tradition, desires and aspiration which would develop the individuals into productive and participating citizens. Here again, the Vicos example was suggestive. Basic legislation underpinning cooperative organization was needed.

Fifth, extreme care should be exercised that marketing and processing groups of the suppliers of productive factors and services did not supplant the hacendados in extracting undue profits from the new class of Indian

owners and hence cancel the benefits to be derived from the reform.

Sixth, the order of purchase of haciendas should be related to the efficiency of resource use and the social and economic level and progress of the Indian residents. Haciendas characterized by inefficiencies, unutilized or underutilized lands, and inferior institutions regulating the lives of Indian inhabitants, should be purchased first while the most efficient, highly utilized haciendas with progressive social and economic status of Indian inhabitants could remain.

Seventh, in the event that sufficient hacendados were unwilling to sell at the appraised price previously suggested, certain steps could be taken to encourage sales. First, the government could cause beneficiencias to sell lands under its inherent rights of control which the government apparently possessed as illustrated by the Vicos transfer. Second, the government could exercise its authority to expropriate unused and underutilized land at the appraised price under existing laws. Third, the government might proceed to collect all the taxes due plus underpayment of taxes in recent years on the income derived from the estates. Fourth, the government could reduce the tax on gains from sale of land in a manner that would induce land owners to sell their land. Alternatively, the capital gains tax revenue could be credited to the government in the total purchase price of the land. Fifth, the apparent relatively low return on capital invested in land and the relatively high return on capital elsewhere in the economy could help provide an incentive to sell land, depending upon the extent of nonmonetary values land owners placed on land ownership.

In other words, there appeared ample means for inducing land owners to sell their land at a price in line with earlier suggestions. From a practical viewpoint, however, few of these measures were needed in some cases as the stability threshold deteriorated. The pressure of the Indians and political developments themselves provided ample incentive for the land owners to sell their holdings.

Eighth, it remained questionable whether or not existing institutions were sufficient

to serve as the modus operandi for generating necessary structural changes. These changes involved: (1) acquisition of land from hacendados, (2) resale of this land to Indian communities and individuals under long-term low interest amortized loans, (3) provision of adequate operating credit under conditions conducive to increasing resource productivity, and (4) technical and managerial assistances to make the capital work effectively with appropriate technological applications of practice and methods.

Proposed Agrarian Reform Structural Change Model for Analyzing Agrarian Structures and Remedial Alternatives with Special Reference to the Sierra

The 1962 Report on accomplishments under Contract ICAC-2226 outlined a structural change model for analyzing defects in agrarian structures and possible remedial alternatives with special reference to the Sierra (Figure 1). This model was formulated in a manner that projected agrarian reform as part of an integrated approach to economic and social development of the national economy. Included also were certain goals and targets for agrarian reform and possible avenues of approach in keeping with findings presented in the Report and discussions with Peruvian officials. This model and its possible applications are presented in considerable detail since it was further developed under subsequent contracts and used as a reference by the Peruvian Government in agrarian reform legislation beginning in 1964 and culminating in the sweeping agrarian reform action in 1968.

In the process of economic and social development within agriculture as an integral development of the nation, several related goals were suggested as follows:¹

1. Maintaining a minimal stability threshold as a necessary basis for orderly

social and economic development. This meant that change of a magnitude and tempo necessary to prevent serious disorder had become an imperative precondition for the economic and social development of both agriculture and the nation.

2. Increasing per capita productivity and consumption within agriculture. With about three-fourths of the nation's population engaged in agriculture, economic development of the nation was conditioned rather heavily by what transpired within agriculture. Obviously, per capita productivity increases within agriculture were related to per capita productivity increases in the nation. Also, per capita increase in consumption of goods and services by the agricultural population were essential to the creation of markets for nonfarm sectors as well as improvement of living levels within agriculture.

3. Increasing social development of individuals as informed and participating members of the nation's social, cultural and political life was the third end-in-view toward which agrarian reform was directed.

The relative importance to be given specific targets for the three preceding ends-in-view had, of course, to come from Peruvian authorities as exemplified in the preliminary report, "Plan Nacional de Desarrollo Economico y Social del Peru 1962-1971," Tomo 1.

Within the context of the foregoing ends-in-view and the specific targets for their accomplishment as formulated by Peruvians, certain avenues of approach as means toward the ends-in-view become discernible.

1. Structural change within agriculture appeared necessary to increase agricultural productivity, to bring the vast majority of agricultural workers into the market economy as consumers as well as producers and to maintain a minimal threshold of political stability as a prerequisite for orderly and progressive economic and social development.

2. Job opportunities in the nonagricultural sectors of the economy appeared necessary to relieve the under- and unemployment within agriculture and to generate jobs for the rapidly increasing population. The initial impact of structural, technological and capital improvements within agriculture

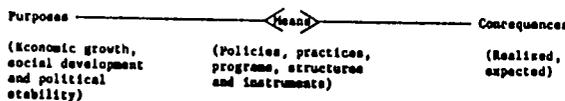
¹From "Plan Nacional de Desarrollo Economico y Social del Peru 1962-1971," Tomo 1. Preliminary Report, Government of Peru, Lima, 1961.

was expected to release further laborers from agriculture. The proportion of laborers required within agriculture was expected to decrease materially over the next decade as the agricultural sector developed. The creation of productive job opportunities in the nonagricultural sectors appeared necessary both to provide jobs and to provide the products and services demanded in a growing economy.

3. Extension of the resource base within agriculture through irrigation, clearing, drainage and other land developments appeared warranted. However, due to the time lag, heavy capital investment, and the necessary land developmental surveys prerequisite to land development, the above two avenues of approach appeared most important in the short term.

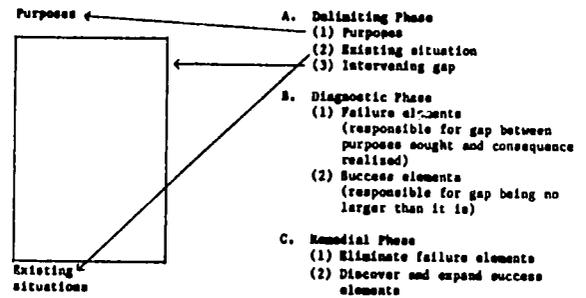
The model was developed conceptually through four major steps as follows:

Step 1. Initially the purposes guiding change were identified, the links between purposes determined, and the consequences of particular means estimated in *ex post* and *ex ante* probabilities. This concept may be illustrated as follows:



Thus, the analysis met the conditions of being (1) purposeful, (2) normative, and (3) predictive (within probability limits). The analysis not only articulated the purposes Peru desired to achieve but identified the means as variables within the equation, yielding consequences which were evaluated in terms of the purposes.

Step 2. The interrelationships between purposes, means and consequences were extended into the following construct which permitted examination of the means in relation to both consequences and purposes of change.



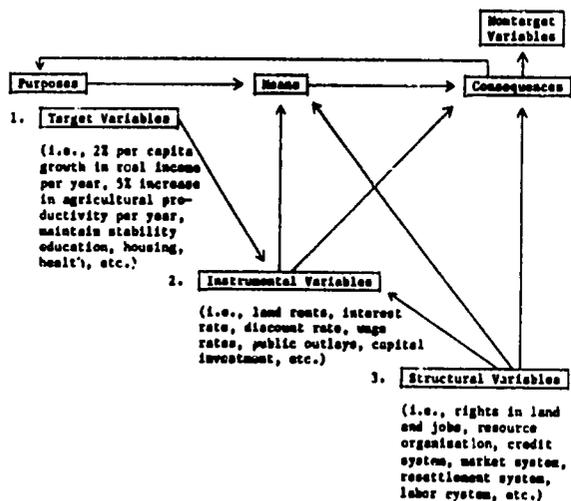
Under Step 2, the delimiting phase (A) articulated the purposes identified in Step 1 and identified the existing situation in terms of realized consequences currently found to exist in terms of the purposes sought. The delimiting phase identified the problem as the gap between the purposes sought by Peru and the existing situation found in Peru in relation to the purposes.

The diagnostic phase (B) identified and measured, insofar as possible, the failure elements B(1) causing the problematic gap between the purposes sought and the consequences experienced. Also, the diagnostic phase identified and measured insofar as possible the success elements B(2) which prevented the gap from being larger than it was; that is, it determined why the existing situation yielded consequences which departed no further from the purposes than were ascertained. In other words, the problem could have been worse.

The remedial phase (C) of Step 2 was designed to remove failure elements identified and measured in the diagnostic phase and introduced and expanded success elements as identified in the diagnostic phase or as developed subsequently. The new structures then could be appraised in terms of the purposes sought in an *ex ante* sense through probabilities expected of the new structure in closing the gap between consequences and purposes.

Step 3. This step based on the findings in Steps 1 and 2 translated the purposes into target variables as ends-in-view to be accomplished by changes in instrumental and structural variables.

Restating the conceptual situation presented in Step 1 and elaborating Step 3, we have:



In Step 3, target variables (1) were stated for the agricultural sector as an integral part of economic and social development of the nation as specific guides and goals directing change within the agricultural sector. These target variables (1) consistent with the National Plan of Peru, would be achieved within the agricultural sector through the means of instrumental variables (2) as tools of administrators of resources both public and private, and structural variables (3) as structures fashioned by Decree and Legislation.

Obviously, the instrumental variables were enabled by the structural variables. Therefore, the structural variables fashioned from steps 1 and 2 were basic in providing the instruments to achieve the targets within the purposes of economic and social development of the nation. At this point, attention was also accorded the effects of executing steps 1 and 2 on the nontarget variables as side effects on other facets of the economy. While the nontarget variables might have been irrelevant within agriculture, they could become relevant to other sectors activated by side effects of changes within agriculture. The following step illustrates the type of structural change which could be fashioned within the content of agrarian reform in the Sierra contributory to the economic and social development of Peru.

Step 4. In light of the previous three steps we deduced that agrarian structures were: (1) variables which were made by

people and could be altered by people to serve human needs (target variables), (2) variables which were appraised in terms of producing consequences in line with the target variables and (3) variables formulated by decree and legislation through rational choice as the most appropriate administrative instruments for achieving Peru's economic and social development targets.

Step 4 proceeded with the elaboration of a schematic diagram exemplary of structural changes in latifundia agrarian structures of the Sierra toward the targets within the economic and social development of Peru, its people and its resources. Structural changes regarding minifundia were not stressed.

Structural changes in this schematic diagram were designed to achieve the targets of (1) increased annual rate of per capita real income of say two percent, (2) increased productivity of workers in agriculture of say three percent per year, (3) increased levels of living of agricultural workers at an annual rate of say three percent in relation to increased productivity, and (4) maintenance of a minimal stability threshold within the agricultural sector necessary for orderly and persistent development.

In achieving these targets, additional ends-in-view became obvious either as implementing ends-in-view or as side effects on the nontarget variables, such as (1) providing incentives to individuals to improve their economic and social status, (2) providing training in farming techniques and management, (3) providing health, transportation, communication and socio-recreational facilities, (4) providing capital in the form of credit for productive activities, (5) providing productive nonfarm job opportunities in rural and urban areas and sectors for the unemployed and underemployed in agriculture, (6) providing training so people could take advantage of these job opportunities as created by public and private enterprise, (7) preventing "flight capital" from leaving the country, and (8) providing for exogenous as well as endogenous capital to enter the economy and be channelled into investments that would create employment and maximize labor productivity.

The Figure 1 schematic diagram starts with the latifundia in the Sierra and the

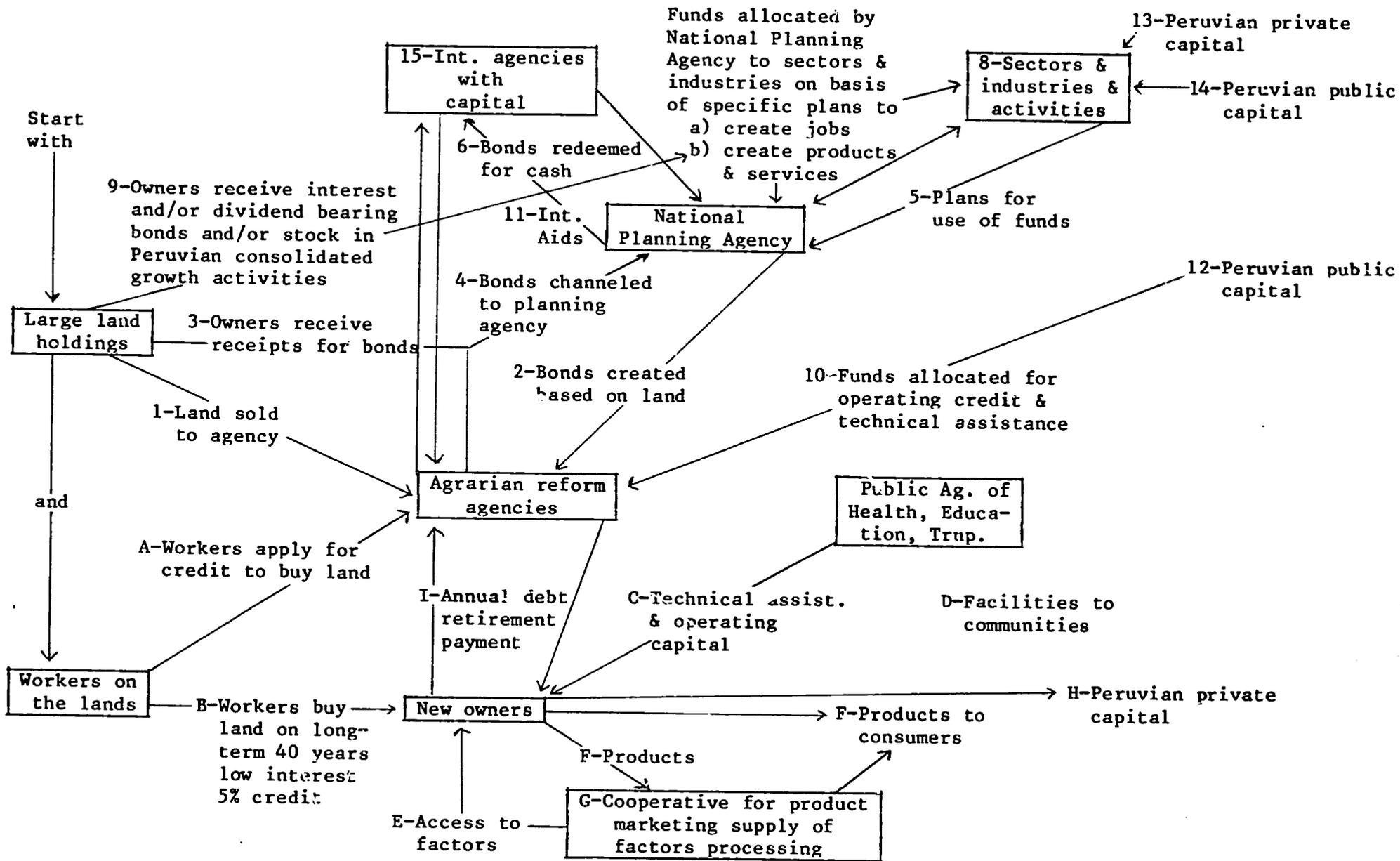


Figure 1. Structural Change Model of Agrarian Reform in Peru

workers on this and adjoining land. The boxes portray the major entities involved in the structure; the lines connecting the boxes show relationships and functions. The "numbers" designate relationships and functions emanating from the disposal of funds released from land as projected into the economy and compensation to the land owners. The "letters" designate the relationships and functions emanating from the distribution of land among farm workers and the resulting production and resource needs.

- No. 1 involves the sale of land by large land owners to agrarian reform agencies in terms of conditions discussed earlier in this report.
- No. 2 refers to bonds representing the value of land, created by the agrarian reform agencies.
- No. 3 refers to receipts for these bonds extended by the agrarian reform agencies to land owners.
- No. 4 refers to the bonds channeled to the national planning agency charged by the government with national planning for development.
- No. 5 refers to concrete plans advanced by sectors and industries to the national planning agency.
- No. 6 refers to the process of exchanging the bonds for capital from international agencies to generate exogenous capital with the bonds based on lands as security.
- No. 7-8 refer to the flow of this exogenous capital from the international agencies to the sectors and industries as allocated by the national planning agency using the criteria of (a) jobs created and (b) productivity of labor and capital in producing products and services demanded by the economy to produce growth.
- No. 9 refers to the fact that owners of land in exchange for their receipts for bonds (3) would receive consolidated growth activities stocks and/or bonds representing interest in the growth activities of Peru and would be rewarded annually by

interest and/or dividends emanating from growth of the nonfarm sectors of the economy.

- No. 10 refers to capital allocated to the agrarian reform agencies by the national planning agencies.
- No. 11 refers to aid in capital and technical assistance extended by international planning agencies.
- No. 12 refers to funds appropriated by Peru as indicated in 10 above.
- No. 13-14 refer to private and Peruvian public capital invested in the sectors and industries.
- No. 15 refers to payments by the agrarian reform agencies to international agencies to retire the bonds from funds collected under the long-term land credit extended the new farmers.
- Letters A and B refer to applications by prospective owners (individuals or communities) for land and to receive credit and titles to land in units determined by agrarian reform agencies to be economic in size.
- Letters C and H refer to the agrarian reform and private credit agencies that furnish new owners with technical assistance for organizing enterprises and operating the farm with improved technology and the operating capital needed to carry out this organization and management. Part of this capital will be considered social overhead inputs.
- Letter D refers to appropriate public agencies which supply needed facilities to the communities.
- Letters E and H refer to the new owners who will be provided access to factors with operating capital (c) through cooperative or other appropriate supply organizations including private suppliers.
- Letters F and G refer to the farm products that will be processed and marketed through cooperatives, other marketing organizations and/or sold to consumers.
- Letter I refers to payment by new owners to retire obligations represented by land and operating capital.

**PART FOUR: AGRARIAN REFORM, AGRICULTURAL
PLANNING AND ECONOMIC DEVELOPMENT IN PERU:**

CONTRACT AID/1a-49 (10/2/62-12/31/66)

Content of the Report "Agrarian Reform in Peru," summarizing activities conducted under Contract ICAC-2226 (see Part Three of this Report), was discussed in detail with USAID-Peru, U.S. Embassy staff in Peru, and with many Peruvian officials and staff members of government agencies and universities. The Report went through several revisions during these discussions.

During the winter and spring of 1962, discussions continued between representatives of the Government of Peru, USAID-Peru, Iowa State University and the University of Iowa, regarding future courses of action to follow up activities begun under Contract ICAC-2226.

As a result of these discussions, the government of Peru requested AID-Peru to negotiate the provision of technical assistance to specific Peruvian agencies by the Iowa Universities. Resulting from this request USAID, Iowa State University and the University of Iowa negotiated Contract AID/1a-49 effective October 2, 1962, through August 31, 1965, and subsequently amended to continue through December 31, 1968.

Contract Objectives

According to the contract, "The overall objective of the work under this contract is to plan and develop an agrarian reform and credit program, nation-wide in scope, but with special emphasis in Southern Peru, for the purpose of assisting the agricultural sector to develop and to contribute to the national economy through achieving significant increase in agricultural production and improving the standard of living of the rural population in general, and of the Indian communities in particular as means toward economic and social development of the nation."

As the work developed under the contract, technical assistance was extended beyond the Institute of Agrarian Reform and Colonization (IRAC) to the newly formed National Planning Institute (INP) in order to integrate the agricultural sector with other sectors at the national level.

**Procedures and the Changing
Working Environment**

Procedures for pursuing the contract objectives consisted of: (1) studies and investigations, (2) advising IRAC, the University of Agriculture, the Agricultural Development Bank, the Central Planning Board (which later became INP) and other agencies engaged in agrarian reform, economic development, credit and cooperative agencies, and (3) training and development of Peruvian personnel.

During the contract negotiations through the contract signing on September 20, 1962, considerable uncertainties evolved within the Peruvian government including annulment of the July presidential election with the Military Junta assuming control of the government.

Following delay due to the above events, the Chief of Party, Herbert H. Howell, arrived in Peru on November 20, 1962 and started the process of establishing an office and making contacts with agencies and institutions concerned with agrarian reform. The Program Director, John F. Timmons, the Head of the Department of Economics, Karl Fox, and Professor Erik Thorbecke from Iowa State University and Assistant Professor Fred L. Mann from the State University of Iowa, arrived in Peru the middle of January to prepare the program of work for the period 1963-1965 in cooperation with Peruvian and USAID officials.

In consultation with the AID staff and representatives of the various Peruvian agencies, the following areas of work were determined as essential to the purpose of the contract, including training, studies, and consultation:

- (1) the identification, development and evaluation of methods of land valuation
- (2) special legal studies associated with agrarian reform
- (3) land titles, water use rights, registration and recording
- (4) short and intermediate term credit needs and procedures
- (5) farm size, organization and enterprise analysis
- (6) the land resource base potential and
- (7) cooperative structures in agrarian reform projects.

These areas were discussed in detail in the proposed plan of work of the Iowa Universities Mission submitted to AID and the Peruvian agencies in February, 1963. The proposed plan of work was translated into Spanish and 100 copies were distributed to agencies and individuals in Peru for further discussion as the basis for future working arrangements.

Agrarian reform in Peru, under the Military Junta up to July 28, 1963, when the new government took office, proceeded with the following actions. First, several significant laws were decreed. Second, only the minimum essential actions which the Junta felt were necessary to maintain political stability were taken during its period in power. The Iowa Mission and their Peruvian counterparts proceeded on the work as outlined above in the work plans.

Land valuation for purposes of expropriation and sale to new land owners had been the basis of much discussion under agrarian reform action in Peru. The Decree Law titled "Bases for Agrarian Reform" and the Regional Law for La Convencion stated that the valuation should be based on productivity. Discussion resulted in giving more detailed attention to several factors in land valuation and especially such items as productivity, labor costs, management, production levels and capitalization rates.

The processes of land title transfer, registration and recording had a most

important role in agrarian reform. The agricultural law advisor (Fred L. Mann), and the short-term consultant from the College of Law (Samuel Fahr) worked closely in the field with the legal staff of IRAC examining the very detailed and laborious system of processing the legal documents in giving land titles in the La Convencion Valley. As a result of their work and suggested changes, a decree law was passed that greatly simplified the transfer procedure. The new law essentially changed the transactions from a public transfer to a private transfer of title. It was estimated that the new system, if widely adopted, would reduce the time and cost of transfer by approximately 50 percent.

As a result of the field observations of title transfer and registration, the legal staff of IRAC developed a program of work for analysis and revision of land title registration and transfer laws of Peru. The law advisor worked closely with the legal staff of IRAC in their property transfer work as a basis for providing background.

With agrarian reform in a political and dynamic framework in Peru, many decree laws and supreme decrees were passed and bills proposed during the year. The agricultural law advisor spent considerable time in the analysis of these laws and decrees from a legal and operational point of view. This provided the contract staff and AID with much needed background, as well as providing a basis for getting the titles studies underway.

Most of the activities in the area of credit were concerned with attempting to make the D.L.F. 204 loan operational. The loan was restricted to use for subloan purposes to small farmers for short- and intermediate-term credit in IRAC projects. With San Lorenzo being the only active project needing this type of credit during the report year, the efforts were confined to examining the proposed project and attempting to clarify procedures both in AID and IRAC to get further utilization of the funds.

Several conferences were held with the officials of the Agricultural Development Bank in Lima and at the branch offices in Arequipa, Puno, Cuzco, and Piura to identify more clearly the credit problems. They stated that their procedures were too slow and too costly, especially with small

agriculture loans. The Agricultural Development Bank was geared largely to large-scale agriculture financing and found it difficult to adjust to extensive financing of small farmers.

During the first year of the contract the major effort in training, consultation and studies in farm size, organization and enterprise analysis was under David Brown's guidance, with headquarters at Puno. Brown was associated with the Agrarian Reform Department of the Regional Development Corporation at Puno (CORPUNO) and worked with the Agricultural Development Bank, SIPA and the Altiplano University.

With CORPUNO in the process of transferring hacienda lands to small farms, the need for input-output data to determine the minimum size and credit requirements of viable small-scale units became very apparent.

Results of these activities provided the opportunity for Brown to play an active role as a consultant to the technicians in the planning of crop and livestock systems. This effort also provided the opportunity for the training of technicians and campesinos in the decision making process. The bringing together of sketchy but basic input-output data was the starting point for a more comprehensive analysis of the economic potentials of the various areas of Peru. The data also served as guidelines for development of program plans for agrarian reform agencies.

Evaluation of the economic potential of the several proposed settlement and resettlement projects in order to determine priorities in use of public and private resources was developed with the assistance of Dr. Melvin Elase. This work consisted of 1) becoming familiar with the data and studies available and 2) planning the research analysis of the potential development projects. These included the La Morada Valley and Apurimac Valley studies as well as the preliminary data on the Manu area of the Madre de Dios River. These areas, all in the upper Selva, were identified as potential colonization areas with penetration roads under construction.

The objective of the cooperative structures phase of the program was to explore the possibilities of cooperatives for supplying productive resources and marketing facilities

in existing and planned agrarian reform projects including the following considerations developed by Lee Kolmer, ISU economist, and Carlos Chueca, in charge of marketing and cooperatives in IRAC: (a) That a planned and aggressive marketing and cooperative program in agrarian reform projects could buy time in establishing projects by assuring a better market and adequate production supplies for the new land owners at an early stage of the program. (b) That the government, in the first stages, would have to act as the marketing and supply agent but with proper planning that the logical process would bring about the establishment of a cooperative system. (c) That training programs for leaders and managers of cooperatives must be initiated as soon as possible. The lack of trained managers was probably the biggest single obstacle to cooperative action in Peru at the time. (d) That loan capital be made available to cooperatives to enable them to perform the marketing functions and still provide the producer with partial payment when commodities were delivered to the cooperative. In addition, capital was needed to carry adequate stocks of supplies in the supply cooperatives.

Under the new government that took office on July 28, 1963 much emphasis was placed on economic development in the agricultural and nonagricultural sectors. An agrarian reform program was pushed ahead mainly in southern Peru and in the Central Sierra while colonization activities were reactivated in the San Lorenzo and Apurimac Valleys.

In addition, emphasizing agrarian reform, the Minister of Agriculture strengthened the newly formed Directorate of Agricultural Economics (DAE) and established a strong Sectoral Planning Office. Also of major significance, the Ministry of Agriculture submitted a major loan application to AID to provide short- and intermediate-term credit to the small- and medium-sized farms in Peru.

Iowa Mission provided technical advice and assistance in land reform and credit to the Instituto de Reforma Agraria y Colonizacion (IRAC), an agency of the National Office of Agrarian Reform and Promotion, through studies and development of a program in

agrarian reform consistent with national economic growth and a more equitable distribution and efficient utilization of agricultural resources.

This particular area of concentration lasted slightly over a year.

During the first year of the contract, it became obvious that there was a great lack of studies and investigations as a basis for making decisions in agrarian reform and agricultural development in Peru. In view of this situation, discussions were opened with the Ministry of Agriculture (MOA). In March, 1964, plans were developed to prepare a new program to provide technical assistance in research and investigation in agricultural development.

The change in emphasis in 1964, emphasized by amendments to Contract AID/1a-49, reflected the following changes in the Peruvian Government: (1) A new Agrarian Reform Law was passed by the Peruvian Congress in May, 1964, (2) A national planning system was created by the Peruvian Government, (3) The public agricultural agencies were substantially reorganized.

By mutual agreement between AID and Iowa Mission, in an amendment to the contract in October, 1964, emphasis was focused upon the role of agriculture in the economic and social growth of Peru.

Technical advice and assistance were provided to the Sectoral Planning Office (OSPA) and the Directorate of Agricultural Economics (DAE) in the Ministry of Agriculture, and the National Planning Institute (INP), as well as to the other Peruvian agencies when requested.

In the DAE and OSPA in the Ministry of Agriculture, Iowa Mission helped to: (1) formulate policies and investment programs for agriculture and criteria for allocation of investment within agriculture, (2) appraise land ownership and operating credit needs and legal means for defining and transferring titles to land, (3) analyze alternative means for achieving and maintaining economic-sized units of agricultural production, (4) analyze marketing and institutional arrangements operating between producer and consumer and supplier and producer, and (5) develop efficient and equitable marketing systems for products.

In the INP, the Iowa Mission assisted in the formulation of economic development plans

for Peru and created economic models which helped the government of Peru to assess the effects of alternative policies upon the various sectors of the economy as well as of the economy as a whole.

During the development of the above areas of work, it became evident that the nature of the activities of the Iowa Universities Mission to Peru under the AID contract were much more oriented toward consultation and short-term analysis than was conceived in the contract negotiations.

The Institute of Agrarian Reform and Colonization (IRAC) was basically an action agency pressed into action by political conditions in the country. Although IRAC had a studies and planning section to which the Iowa Mission was attached; lack of manpower, urgency of the situation politically, and several reorganizations did not present an environment favorable to conducting studies.

In addition, adjustments within the AID Mission associated with the shifting from a large direct-hire staff to operating with contract groups brought about many changes from the original ideas as to what might be expected from the contract staff. This resulted in conflicts with the contract terms resulting from the original contract negotiations, which had been carried out with major emphasis on studies and investigations and providing graduate training to Peruvian participants.

The Agrarian Reform Law passed on May 21, 1964, made the following changes in the administrative structure of public agrarian reform agencies: (1) IRAC became the National Office of Agrarian Reform (ONRA). (2) ONRA became the Institute of Agrarian Reform and Promotion (IRPA); the Council became the National Agrarian Council (CNA) with the Minister of Agriculture as President. (3) IRPA, ONRA and SIPA became administratively dependent on the Ministry of Agriculture. (4) A newly-created agency, the Agrarian Reform Finance Corporation (CFRA), administered all Agrarian reform funds and was an autonomous agency governed by the Superior Council (CS), of which the Minister of Finance was President.

On June 8, 1964, the National Planning Institute made public a short-run investment plan consisting of two volumes. These plans were based on growth rates of 5.5 and 7 percent in the gross national product.

Agriculture figured strongly in the public investments, with large expenditures scheduled for irrigation projects, mostly on the coast.

Results of Work

Given these Peruvian changes, work of the Iowa Mission moved into the following areas with the attending results.

Mission members in the macroeconomics and regional planning sections of the National Planning Institute directed their attention to helping with the completion of the short-term investment plan for Peru for 1964-65. Later they helped in planning the work to be done in the preparation of the Medium Term Investment Plan. Eugene Brady replaced Erik Thorbecke as the leader of the Iowa group in the National Planning Institute. Under the direction of these two men and with the assistance of Rene Vandendries and Apostolos Condos the following areas of study and investigation were developed with Peruvian counterparts:

a) Assisting in the completion of the revisions of the short-term investment plan for Peru for 1964-65.

b) Construction of a policy oriented macroeconomic model for Peru.

c) Generation of reliable historical relationships among macroeconomic variables. The relationships were used to help in the development of investment plans.

The work of Iowa technicians in the National Planning Institute was well received and the technicians had close rapport with their counterparts.

Melvin Elase and Dean Schreiner continued to work with the National Office of Natural Resources, an institution of the National Planning system. In addition, they worked with the new Directorate of Agricultural Economics.

Dean Schreiner was active in assisting his counterparts in Natural Resources with the analysis of a land survey made in the Puno Department. This survey was designed to determine the characteristics of farms, farm operators and farming practices. Estimates

of farm incomes for different sized farms were generated and relationships of farm income to land labor and capital were established.

In addition, Schreiner assisted in the preparation of an investment decisions program designed to maximize income from the use of land, water, human and other resources in the Puno Department. Much of his work was devoted to adapting physical information from surveys into an economic framework that permitted the making of national policy decisions for resource use. The programming model, which had been developed for this purpose, was tested by computer technicians at Iowa State University.

Melvin Elase worked closely with the Director of the Natural Resources Division in planning for a resource policy planning department. The proposed department was designed to remedy the deficiency of a national policy entity with respect to natural resources conservation and development.

The approval of the new Agrarian Reform Law created a milestone in the legal concept of private ownership of agricultural land in Peru. The traditional Peruvian concept of absolute rights to dispose of and utilize privately-owned agricultural lands virtually free of controls was altered within the limits of the constitutional provisions of the social obligations of private property. The new law essentially granted to the executive branch of government the power to decide whether or not privately owned agricultural lands were fulfilling their social obligations. If the decision was negative, the tenure relationship could be altered by administrative act to conform to criteria set forth in the law as necessary to fulfill the social obligation. There were both mandatory and indicative criteria in the law which were to be taken into account by the executive power when making decisions.

The new law provided the opportunity for Fred L. Mann, law advisor, and Melvin Elase, agricultural resource economist, to work on the development of implementing regulations for the title and tenure aspects of the law. This work was carried out both at the initiation level with ONRA personnel and at the

review level with members of the national Agrarian Council. They were assisted by David Brown and Enrique Vignes.

Of importance also was the work performed by Mann, Blase and Vignes in reviewing the proposed law at its various stages of development in Congress and offering suggestions for improvements. One such suggestion in the tenure area that was ultimately adopted was that not only should individuals and Indian comunidades be allowed to become owners of Agrarian reform lands, but production cooperatives of farmers as well. In retrospect, this was an important addition, considering the constitutional restrictions placed on land owned by comunidades.

Lehman Fletcher, a short-term consultant in marketing, helped in evaluating the merits of marketing studies. He also gave assistance in making a diagnostic study of marketing in Peru and contributed by advising on the organizational structure of the Directorate of Agricultural Economics.

Dean Schreiner, in cooperation with a counterpart from the Directorate of Agricultural Economics obtained and analyzed quantity and price data for several food products sold in the Lima wholesale market. Those and other available data were used to establish tentative demand parameters for these products.

Enrique Vignes assisted agricultural economics personnel with advice and direction regarding the collection of basic data to be used in establishing a marketing system in the Central Sierra region. He also helped in making a preliminary study of a cooperative marketing system of the horticultural products in the Tarma area.

David Brown assisted the personnel of the Stanford Research Institute in a pre-feasibility study of agribusiness development in the Tacna area. The study was organized as a task force and addressed itself towards the discovery and evaluation of promising enterprises for the processing and marketing of agricultural products in and around Tacna.

The new Agrarian Reform Law included several articles on the valuation procedure for Agrarian reform lands and other agricultural assets, both from the viewpoint of acquisition by ONRA and the transfer to new owners. Enrique Vignes continued economic

analysis of data obtained in a survey of the Indian comunidades in the Central Sierra region that were eligible to receive lands under the reform program being executed there. Results of this analysis provided criteria for determining the transfer scheme of the lands as between comunidades, and the value at which it should be transferred.

Raymond Beneke assisted in a study of the laws which specified mandatory food crop quotas to farmers. He presented his conclusions to the Directorate of Agricultural Economics and suggested alternatives to the present provisions of these laws. In addition, he advised production economics personnel on proper research methods for current and proposed work particularly as it applied to farm planning. He gave seminars and lectures on numerous occasions and advised the Director in Agricultural Economics with regards to the organization of his department.

David Brown assisted the production economics section in the new Agricultural Economics Directorate in two major ways. He participated regularly as a resource person in the planning and execution of a highly successful workshop for about 20 key technicians. He prepared an analytical structure for viewing the activities of the new Directorate and generated a format for outlining individual projects.

The Iowa Mission, with encouragement from both Peruvian and AID personnel, continued work of financing Agrarian reform and relating it to industrial development. The new law included a chapter creating a special fund for industrial investments. This was based largely on a previous study and report by Blase and Mann. Samuel Fahr, short-term legal consultant, working with Mann and Blase, as well as with Peruvian counterparts in the Direccion de Economia Agraria and the Banco Industrial developed detailed regulations and internal statutes for the special fund created by the law.

The Agrarian-Industrial Trust scheme received interamerican attention. By invitation, Mann and Blase presented a paper at the OAS Agrarian Reform Seminar in Panama in May, 1964. Thereafter, the Ecuadorian Agrarian Reform Law was adopted and included various adaptations of the scheme. Additionally, the Nicaraguan government expressed interest in

developing a similar scheme to be included in their law.

Fred Mann assisted the Secretary General of the newly-created Agrarian Reform Finance Corporation in developing regulations to implement the law. This Corporation was charged with receiving and administering all funds from whatever source destined for Agrarian reform purposes. It issued the Agrarian debt bonds used to pay for Agrarian reform lands and was designated titleholder of such lands until they were redistributed.

The critical path program method was used by Enrique Vignes for planning three specific projects of the Central Sierra Land Reform Program including (a) implementation of the expropriation decree No. 11 (covering 78,000 ha.), (b) establishment of a training center for farmers, (c) acquisition and distribution to comunidades of 309,000 ha. of land.

Similar work was performed by David Brown for the Southern Sierra region. In addition, David Brown, Enrique Vignes and Melvin Hase contributed lectures on the application of critical path methods for agrarian reform projects and regional development planning.

James Prescott, Raymond Beneke and Dean Schreiner were instrumental in bringing together personnel from the Directorate of Agricultural Economics and computer technicians of the Engineering University. The group prepared and ran a linear program for a farm firm. Previously, neither organization had had any experience in this type of work.

James Prescott, working with the projects section of the National Planning Institute, prepared a computer program to be used in the storage and retrieval of data connected with proposed projects.

In a broad sense the Iowa Mission became a teaching mission, involving demonstration, consultation and formal presentations among Peruvian staff members in Peru. Members of the Iowa Mission developed working relationships with Peruvian counterparts in their research activities.

In addition, there were formal seminars extending over such topics as linear programming, research methodology, production economics and agricultural marketing. Typically, the seminars were with groups of from

four to twelve technicians who had special interests in the area under discussion. Twenty seminars were held for educational purposes.

Erik Thorbecke with assistance of Stephen McGaughey and Renee Vandendries prepared an analysis of "The Macroeconomic Implications of and the Cost of Financing Agrarian Reform in Peru."¹ The purpose of this analysis was twofold; first, to derive estimates of the cost of financing agrarian reform in Peru; and second, to examine the feasibility of land transfers in the light of the present and expected future macroeconomic (and fiscal) conditions underlying the Peruvian economy.

The first magnitude estimated was the value of the land subject to transfer of ownership (either through expropriation or voluntary sale). In order to make this estimate, the average value per hectare of cultivated and cultivable land and of natural pasture was estimated. The procedure was to use data from the Census of Agriculture in order to divide land into these two categories, by Departments.

The next step consisted of estimating the total land area subject to expropriation. The proposed government bill was selected as a starting point because it was more explicit than the others and because it reflected the view of the party in power.

On the basis of the progressive expropriation scale contained in the proposed law and the 1961 Agricultural Census breakdown by size groups and by types of land, the total amount of land subject to expropriation was computed. Since the Census breakdown did not correspond to the scale contained in the law, a number of assumptions and judgments had to be made which were explicitly stated in the publication.

The total amount of cultivated land (tierras arables o de labranza and cultivos permanentes) was 407,000 hectares, and the total cultivable land not cultivated (tierras cultivables no trabajadas) amounted to 1,336,000 hectares. Thus, a total of

¹International Studies in Economics. Peru Program Monograph No. 3, Iowa State University, Ames, Iowa. January, 1966.

1,743,000 hectares of cultivated and cultivable land were estimated.

The total amount of natural pasture land was estimated at three million hectares.

The total value of land subject to expropriation estimated on the basis of the above procedure amounted to 8.25 billion soles (1743 thousand ha. at 4429 soles per ha. = 7.72 billion soles + 3000 thousand ha. at 176 soles per ha. = 0.53 billion soles).

Allowance was made for Indian community land included in the preceding computations, since it was in most cases not subject to expropriation. The great bulk of community land consisted of natural pastures. However, the above results would be only marginally altered if the value of community land were excluded.

As a rough approximation, 8.25 billion soles (US\$308 million) represented the total value of the land subject to expropriation under the government sponsored bill.

The procedure which the law envisaged for land transfer and land financing was to compensate present landlords by means of bonds carrying an interest rate of five percent and amortizable in 20 years by annual lottery drawings (Ar. 42). On the other hand, the new landowners would pay for their land over a period of not less than 20 years and be charged an interest rate of two percent per annum.

Thus, if the repayment scheme of the new landlords took place over a term of exactly 20 years, the government would not need any funds for land transfer purposes, since every year the inflow of funds from the new landowners would be equal to the redemption of bonds. The only direct cost attributable to land transfer as such would be the interest rate differential of three percent (the five percent payment to bond holders minus the two percent earnings from new landowners).

There were, of course, a number of indirect costs which had to be incurred simultaneously with land transfers and which were basic to the success of agrarian reforms. In any case, the fiscal implications in terms of the government receipts and payments on principal and interest resulting from land transfers over time could be determined. It was necessary to make such calculations in order to evaluate the financial

feasibility of a land reform program and to assess the capacity of a country to complete this type of program.

An attempt at determining the quantitative effects of land transfer on the government's budget was based on the following assumptions:

1. The total value of the land subject to expropriation amounted to 10 billion soles. This figure was slightly higher than the amount arrived at above. Reasons for selecting 10 as opposed to 8.25 billion soles, provided a margin for (1) the administrative costs of executing the program, (2) some of the essential inputs and services to the new settlers, and (3) a slight cushion against possible inflationary pressures which would reduce the purchasing power of the land bonds.

2. Land would be transferred over a 10-year period, so that each year one billion soles worth of land would change ownership; therefore, bonds totaling one billion soles would be issued annually for 10 years.

3. These bonds would be redeemed over a 20-year period from their date of issue and carry a five percent interest rate.

4. The new landowners would purchase their land over a 30-year period and pay two percent on the unpaid balance. It appeared realistic to provide for a four-year "grace period" before the new landowners started repaying the principal of their land. It was assumed, however, that they would pay the interest charges from the beginning.

On the basis of these assumptions, the fiscal implications of this land transfer scheme could be worked out over time. Under this scheme, annual outlays of the government for land transfer purposes would increase between Year 0 and Year 9, at which time they would reach a peak of 451.5 million soles (US\$16.85 million). After that, outlays declined gradually until Year 22 (43.3 million soles). In Year 23, the outflow would be replaced by an inflow which would keep increasing on a level of 333.33 million soles in Year 30. From that time on, the inflow would decline continuously to zero in Year 43.

It would seem that the magnitude of these figures was well within the fiscal capacity of the country. The total public

expenditures for 1962 and 1963 amounted to approximately 15 and 16.5 billion soles (at 1960 prices), respectively. The National Planning Institute projected total public outlays in 1970 at 31 billion soles (at 1960 prices) and public investment in agriculture of 3 billion soles. There would, therefore, appear to be little doubt that the above land transfer scheme was feasible from a fiscal standpoint with the highest net public outlays occurring in Year 9 and representing less than two percent of projected total government expenditures.

Indirect costs of land reform have so far been ignored. Before a rough estimate of these costs could be made, it seemed essential to attempt to estimate the number of families which might be involved in the resettlement process. The total population employed in agriculture was 1.6 million, according to the 1961 Census. A fairly reasonable assumption was that a farm family consisted of approximately 1.6 employed persons (i.e., between four and five persons in total). Thus, the total number of farm families might amount to approximately one million.

The government sponsored law was quite vague with respect to determination of the average size of farms made available to the new owners. The main criterion in determination of the size seemed to be labor employment. In other words, the size of the farm should be such that except in peak harvest periods only family labor would be employed. Another criterion governing farm size was that the farm income be above the strict subsistence level.

These criteria are indeed quite vague and therefore very difficult to translate into quantitative terms. Another factor which further increased the task of estimating average farm sizes—corresponding to the preceding criteria—was the great diversity of land types and productive conditions throughout Peru.

As a very rough approximation it was assumed that the average size farm would vary between 10 and 15 hectares for cultivated and cultivable land and between 100 and 150 hectares for natural pastures. On the basis of these judgments it was possible to estimate the order of magnitude of the number of

families which could be resettled. The total land area subject to expropriation in cultivated and cultivatable land was estimated at 1,743,000 hectares, while the estimate for natural pastures was 3,000,000 hectares. Using the above estimates meant that, respectively, between 116,200 and 174,300 families could be granted new ownership on the former type land and between 20,000 and 30,000 on the latter type land. Since the land transfer process was assumed to take 10 years, it meant that between 13,620 and 20,430 families could be resettled every year for 10 years.

A first observation suggested by these last data was that the land reform scheme affected only between 13.6 percent and 20.4 percent of the total farm families in Peru. Secondly, these estimates further strengthened the almost self-evidence presumption that the employment alternatives in Peruvian agriculture and more generally in the agricultural sectors of the lesser developed countries were very limited.

A land reform scheme is not a panacea, yielding a solution to population pressures in agriculture, and it is not a substitute for a well-conceived industrialization scheme. Land reform can be successful and contribute to economic development only if it is undertaken jointly with investment programs in the nonagricultural sectors which may over time provide employment opportunities for the unemployed or disguised-unemployed labor force in agriculture. It has been the experience of almost every country that, throughout the process of economic development, the proportion of the labor force employed in agriculture has declined significantly. The surplus labor force in agriculture has to be absorbed by the nonagricultural sectors if the economy is to grow over time.

Estimating the indirect costs previously mentioned as connected with agrarian reform was as difficult and as risky as estimating the average farm size. These costs included (1) short-term production credit to purchase inputs such as fertilizer, insecticides, seeds, and cattle; (2) medium- or long-term credit for construction, irrigation, farm improvement and other purposes; and (3) public expenditures for technical

assistance extension and the building of necessary social overhead capital projects. A tentative estimate of at least the first two types of indirect costs—based partially on amounts requested by the Institute of Agrarian Reform and Colonization (IRAC) from AID for credit to small farmers—was around \$1,000 per family. Roughly one-half the amount went for short-term production credit and the other half for medium- and long-term credit. The first type of credit was revolving, whereas the second type had to be considered as a public investment in agriculture.

It was assumed that (1) the short-term production credit became part of a revolving fund available on a continuous basis to the same number of farmers; and (2) the medium- and long-term credit was made available only once to each new landlord. It followed that the government had to provide each year for 10 years an additional \$13.6 million to \$20.4 million. Half of this sum became part of the revolving fund for short-term production credit, whereas the other half had to be repaid over a longer period of time and might even, in a number of cases, be charged to public investment in social overhead capital.

The above estimates of the indirect costs of agrarian reform were highly tentative. It appeared, nevertheless, that they reflected roughly the order of magnitude involved.

A great deal of research was necessary before these costs could be measured with some degree of confidence. Here again, the regional and agricultural conditions were so diverse that it seemed worthwhile to design a stratified sampling survey to attempt to obtain more reliable information.

The first conclusion which was reached on the basis of the preceding analysis was that the land transfer process was feasible from a fiscal standpoint if it were spread over a 10-year period. Secondly, it appeared on the basis of very limited information, that the burden of the indirect costs of agrarian reforms could also be carried by the government.

The Agrarian-Industrial Investment Trust was developed by Melvin Elase and Fred Mann from ideas presented in the report of the initial contract. This was one of the major

problems studied by Iowa Mission personnel. This work dealt with the problem of financing the land transfer portion of agrarian reform. But it also encompassed disguised problems of flight capital, inflation, and shortage of domestic capital for financing expansion of the industrial sector of the economy. The problem was further differentiated from those in the U.S. by a general lack of 1) knowledge of and experience with mutual funds, 2) legislative protection for minority shareholders, 3) confidence in government bonds, and 4) recognition that the welfare of one group did not always have to be improved at the expense of another one.

One method introduced to the Peruvians for agrarian reform analysis by Elase and Vignes was Critical Path Programming. Known in the U.S. as the Critical Path Method and Performance Evaluation Review Technique (PERT), it proved useful where 1) time delays were commonplace, and 2) planning horizons tended to be relatively short. By analyzing each step of a development project in terms of the time most likely needed to complete it, the procedure allowed an analyst to anticipate the bottlenecks most likely to delay completion of the project. Subsequently, resources could be shifted so that completion of the project would be expedited. In short, it provided a means of directly focusing on procedures for speeding-up the economic development process—one of the basic reasons for the U.S. foreign aid program.

In its application to two agrarian reform projects and one large-scale research project in Peru, it broadened the horizons of the project managers to enable them to see all of the steps involved in their programs. However, this was but a small portion of the contribution. When it was utilized in its entirety, i.e., when time estimates were made to determine the critical path, it was employed as a control device in reducing the time required to accomplish economic development objectives.

Regional applications of linear programming were introduced to the Peruvians based upon experiences in the U.S. In Peru, there were several reasons that application of this allocative technique had special merit. First, there were large areas of undeveloped land that could be planned for optimum

resource use without regard to farm boundaries, preferences of established farmers, and established customs. Second, and most important, the shortage of agricultural economists made it imperative that an area rather than an individual farm be given consideration as the planning unit. If a significant quantity of agricultural resources were to be included in a planning effort to improve the efficiency of their use, regional application of linear programming appeared to constitute a logical approach.

Although applied in a somewhat oversimplified way, the use of linear programming in planning the Perene-Satipo-Ene Colonization Project served as an illustration of the contribution of the technique. This technique could be applied not only to one project, as in this case, but also to several projects competing for the use of a limited amount of development capital. The results provided direction for the improved allocation of loan funds and technical assistance personnel. Further, the regional planning of resource use with this tool could be done in such a way as to combine several separate feasibility studies, e.g., studies for credit for colonization projects and highway feasibility studies.

Education about the capability of techniques such as the regional application of linear programming, increased their acceptance. Encouraging in this regard was the growing recognition that an allocation problem existed with respect to the use of foreign aid funds. This awareness, coupled with the expanding capability of Peruvian technicians to undertake linear programming problems, resulted in the improved use of domestic and international resources in Peru's development process.

Land title registration problems emphasized in the report on Contract IeAC-2226, 1961, discussed in Part 3 above, became even more important as legislation pointed to imminent reforms in land holding. Accordingly, Sam Fahr and Herbert Somerwitz launched investigations on land titles.

As stated by Samuel Fahr¹,

¹Samuel Fahr. "Final Report," Iowa-Peru Program Staff Report No. 30, Iowa State University, Ames, Iowa. August 8, 1967.

"The opinion of every Peruvian I discussed the problem with was the same: The present system of land title registration is inadequate, unreliable, time-consuming, and expensive. Likewise, in this report I shall simply say that Dr. Somerwitz and I were convinced that we ought to recommend that Peru adopt a tailor-made version of the Torrens System; the latter is fully described in our publication. The essence of it is this, that in place of the present voluntary separate registration of individual land transactions without any guarantee as to all the rights existing in the land (many of which may be totally unregistered) our version of the Torrens System prescribes a title certificate on which all essential rights and interests must appear, or be invalid (except in case of fraud). Thus the certificate is the title, recites all existing rights and interests and may be fully relied on by all. After much thought we felt it best to make registration mandatory, at least after a period of time.

"Building upon the earlier work of Dr. Somerwitz, we drafted a series of changes to the Peruvian Codigo Civil; we tried to make as few changes as possible and to confine our suggestions wherever we could to existing law, practice, and institutions. Using the same philosophy we also drafted a complete set of Reglamentos to carry out our proposals. In addition we wrote an explanation of the Torrens System, together with a discussion of the chief technical objection we met, which was that it could not succeed without cadastral maps. All these documents are now to be had in dittoed form in both Spanish and English."

Also, Dale B. Furnish prepared a guide to Peruvian legal dispositions for use in developing economic policy orientations.² This guide was useful in Agrarian reform policy and also in the work on price policy which was undertaken.

²Dale B. Furnish, "An Economic Developer's Guide to Peruvian Legal Dispositions," Special Reports. Iowa Mission. Iowa-Peru Programs Special Report No. 1, Revised Edition. Iowa Mission. Lima, Peru. May, 1968.

"The hierarchy of Peruvian national laws is made up of three categories, or seven distinct levels. Two other sources of written law must figure in any consideration of legal precedents in Peru: international agreements and municipal acts. The former probably represent the highest level which can affect Peruvian affairs, while the latter rank below the lowest national administrative act.

"Thus, the hierarchy of written laws for Peru might be illustrated this way, starting at the highest source:

- I. International Agreements
- II. National Laws
 - A. Constitution
 - B. Congressional Legislation
 - C. Administrative Acts
 - 1.- Decretos Supremos
 - 2.- Resoluciones Supremas
 - 3.- Resoluciones Ministeriales
 - 4.- Resoluciones Directoriales
 - 5.- Other Written Dispositions
- III. Municipal Acts

"In considering Peruvian government and laws, one should always remember that the Peruvian Constitution is written in such a way that the Legislature should have most of the real power. In Peru, political commentators and other knowledgeable people generally refer to the Congress as the "First Power of the State." Neither the Executive nor the Judiciary exercises a true constitutional check against the legislative will. There is no veto by the President against bills approved in Congress. There is no tradition of judicial review by which the Supreme Court might safeguard the integrity of the Constitution against improper laws. If the Legislature wishes to enact a law, no matter how clearly against the dictates of the Constitution it may be, there is no one who can prevent them from doing so. In effect, this means that while legislative acts are supposed to be subservient to the Constitution they may in practice rank ahead of it.

"The controlling party in Legislature has usually been the same as the party of the Executive. At other times, the Congressional majority has not been free to exercise its Constitutional powers. Extra-constitutional

regimes have often governed without allowing the Legislature to legislate.

"Understandably, the present majority opposition in the legislature may not feel a responsibility to cooperate with the executive when past executives have usurped its powers. Such a majority has neither the tradition nor experience of the concept of a "loyal opposition". Often it will obstruct purely for the chance to land a blow against the other party. A salient example is the present Legislature's use of its censure power against Ministers of the President's Cabinet.¹

"Faced with an unfriendly and intractable Congress, the Executive may push its own programs and policies through its administrative acts. The Executive is supposed to act wholly within the guidelines set for it by Congress. It is supposed to apply the law and fill in the vacancies in the legislative acts, but not to create its own law.² The line between implementation and creation is a very fine one, however. A vigorous Executive may utilize the administration acts as

¹The Parliament can remove a Minister for virtually any reason which suits it. See Constitution, arts. 169-73. Under these articles the Congress must interpelar, or formally call, a Minister before it for testimony. If a Minister appears in Congress for any reason other than the interpelacion, he is not subject to censure. But when he is censured on the basis of his interpelacion presentation, he must immediately resign. Almost any pretext for censure may be employed. A Minister of Education was censured in 1966 for using improper language in addressing the Congress when he replied vigorously to sharp questions from the legislators.

²See Constitution, art. 154, inc. 8. The problems of execution of laws are not new. A very early law considered that Congress had passed laws which the Executive had not applied even though five years had passed. The law provided in its first article, "El Ejecutivo procedera inmediatamente a dar exacto y puntual cumplimiento a todas las leyes publicadas para la marcha del regimen constitucional." Ley of 1 August 1831.

the one means it has of exercising real initiatives and truly running the State.

"Executive law is often written by technicians whose skills lie in their own fields of specialization, not in law. The resulting laws may often conflict with legislative acts, perhaps because the men who draft them work for an activist Executive and are not primarily concerned with the niceties of law, but rather its basic effect. Given such a situation the Peruvian may ignore the option of taking his case to court for a judicial determination, choosing instead to work to get a special Executive act promulgated to achieve the desired legal effect. Where feasible, the pressure for special consideration may be directed at Congress rather than the Executive. Such vigorous use of influence, or *vara*, is by no means remarkable or inexplicable, nor even necessarily undesirable in all cases. In Peru, the citizen who wants a law affecting economics or commerce changed is likely to have the power and personal contacts to do so, and will not be timid about using them. Even if a person were without strong personal influence but had a legitimate economic or social argument in favor of his desired action would have a good chance of getting the Executive or the Legislature to listen to him and act in his favor, without the money and time required for a lawsuit.

"The tendency to try to change laws rather than test them in court is encouraged by the fact that the Supreme Court has never declared a law null and void because it is unconstitutional. Neither does a decided court case stand as a reassuring precedent upon which a party can base future conduct; a law does. For this reason the hierarchy of laws is extremely important in Peru. It is clearly recognized by all, even if it is not observed absolutely."

Price Policies for Major Food Crops

Beef, rice and milk, three of the most important food consumption products, were studied by the Iowa Mission in assisting the work of the Corporacion Nacional de Abastecimientos del Peru (CONAP). Findings of the beef study by Geoffrey Shepherd and Dale

Furnish are summarized.¹

Beef was then, as now, the most important meat in Peru. Beef production was about double the production of pork, and pork in turn was about double the production of each of the other important kinds of meat.

The demand for beef in Peru was expanding with increasing population and income more rapidly than domestic production had been able to supply. Peru did not have as extensive beef producing resources as some of its neighbors. Accordingly, beef prices in Peru had been rising more rapidly than the cost of living, and beef imports had been increasing to fill the gap.

The policy of free importation was modified by a nominal import tariff and by variable payments by importers of 75 percent of the difference between current prices and Argentine and Colombian prices in January, 1968. The purposes of this variable levy were in effect to partially stabilize Peruvian prices.

Internally, municipal controls over the flow of livestock, as at Trujillo and Arequipa, impeded supply and demand. Abolition of these controls would increase marketing efficiency. So would the abolition of price controls within individual markets, to the benefit of both producers and consumers.

Another factor in marketing efficiency was the location of slaughtering plants. In some countries, it was most efficient to locate the plants out in the cattle producing areas; in other countries, it was better to locate them close to the cities. In Peru, most of the feedlots for finishing (fattening) cattle were located close to the large cities; the feedlots and the consuming centers were close together, so the plants could be located close to both.

With more modern production technology and free marketing, efficient beef producers, located on efficient ranches and farms, would be able to develop their industry and prosper. Those who could not would do better

¹Geoffrey Shepherd and Dale Furnish, "Price Policy for Beef in Peru." Special Reports. Iowa Mission. Iowa-Peru Program Special Report No. 8. Lima, Peru. April, 1968.

to produce other products than beef. They and the nation would both be better off.

Controlling prices at wholesale. Before the devaluation of the sol in August, 1967, CONAP controlled beef prices at the wholesale level by controlling the quantity of imports. At times, it imported live beef cattle itself. But after the devaluation and the appointment of a new Minister of Agriculture, Degree 219-A of December 29, 1967, established free importation of beef. Wholesale beef prices in Lima became practically equal to the world (import) price level, except for a nominal tax per head and a variable levy equal to 75 percent of any decline below Argentine and Colombian beef prices in January, 1968. The purpose was not to raise or lower prices, but to stabilize them, and to permit the importers to regulate the competition among themselves. The Lima municipal officials then simply supervised the mark-up from wholesale to retail prices at S/.2.5 per kilo.

In smaller cities in the country, the municipal authorities consciously kept wholesale prices low, to benefit their consumers. They tried to keep these prices below prices in Lima minus freight to Lima, by refusing to let livestock shipments through. They forced the truckers to sell the cattle in their city; they kept the wholesale prices low by keeping the supply artificially high.

At one point, the Garita de Control de Viru at Trujillo ordered that 15 percent of the cattle that passed through there be retained. Truck drivers who did not comply were heavily fined.¹ Similar events happened in Arequipa.

All this was contrary to Art. 48 of Law 16727, which established free transit for all kinds of agricultural produce in Peru and exonerated them from taxes.

Control over transit, taxes, and prices exercised by municipalities interfered with a free market and acted as a drag on production. The power to control prices belonged properly to the central government.

Controlling prices at retail. It was difficult to control prices efficiently or accurately at the retail level.

A beef carcass was cut up into dozens of retail cuts, all with different values, and all selling at different prices. It was difficult enough for a large supermarket or chain of supermarkets to set the retail prices for these different cuts at levels that would keep them all moving at the right speed (so as to avoid gluts or scarcities) and come out with the right average price to cover costs and the price paid at wholesale. How could a small puesto operator do this job accurately, with practically no records, and only a market inspector looking over his shoulder? How would he charge the right prices for lomo, chuck, oxtails, etc., so that the weighted average price would cover his costs and the price he paid for the carcass? And how could the market inspector check up on him if he did not comply? These questions posed difficult problems.

The system was inefficient and out-of-date. The consumer and the retailers would have been better served by a free market that permitted efficient retailers to develop their business and narrowed their marketing margins. In developed countries, these margins had been reduced from 25 percent or more over the preceding 15 years to 18 percent or less, yet they still provided normal profits, on an increasing volume of business. Moreover, Peruvian retail markets could greatly reduce the cost of their then system of inspectors; this would reduce marketing margins further, to the benefit of producers and consumers.

The full maximization of beef production and consumption required many changes in the rest of the economy, which were needed for sociological, welfare, nutritional and other reasons as well as economic ones, including a less uneven distribution of income, land tenure reforms, a higher level of general education, higher levels of sanitation, and other reasons.

Alternative solutions to rice marketing problems were analyzed by Geoffrey Shepherd, Gustavo Prochazka T., and Dale Furnish, and examined with the following conclusions.²

²Geoffrey Shepherd, Gustavo Prochazka T., and Dale Furnish, "Rice Marketing Problems and Alternative Solutions." Special

¹La Prensa, 1/11/67 and 2/11/67.

Rice was one of the basic foods in the Peruvian diet, especially in Greater Lima, where per capita consumption of rice could reach 60 kilos per year. Rice was a popular food because it gave the consumer a high food value for a low price.

Rice had been a problem in Peruvian agriculture in recent years. Like many other basic food products, rice was subject to two conflicting pressures: (1) producer prices needed to be maintained as high as possible because increased production was needed but (2) consumer prices needed to be kept as low as possible.

The government-controlled single-price marketing system for rice provided little or no reward or incentive for producing high quality rice, except by subterfuge. This retarded production, milling, and consumption, with adverse effects all around. Initial steps toward a mixed government and free-enterprise system could lead to the complete elimination of the government from rice marketing.

Shepherd et al. outlined the following specific alternatives that could be taken, and the costs and benefits to be expected from each:

Abolish milling quotas. Milling quotas reduced competition among the millers. Abolishing the quotas would cause the millers to compete openly for the farmer's rice, and pay premiums for the higher grade in line with their higher values.

These higher prices would stimulate farmers to produce more and better. They would also provide higher grade rice for high-income consumers, and lower grade rice at lower prices for low-income consumers, so they would all be better off. And imports of rice could be reduced, with a saving of foreign exchange.

At the same time, the mills could be paid higher compensation for their work, allowing them to modernize their physical plants. Quotas might be used as an incentive, awarded only to mills which would meet high standards of equipment and performance.

Reports, Iowa Mission. Iowa-Peru Program Special Report No. 6. Lima, Peru. November, 1977.

This would encourage higher performance, rather than protecting weaker members.

Grade specifications. The quality and value of rice was determined by two conditions:

(1) By the way it was produced—its variety, stage of maturity, plumpness, length, purity (freedom from other varieties, trash, mold, etc.) taste, odor, and percentage of milled grain that the rough rice yielded.

(2) By the way it was milled—the percentage of the brown skin that was removed, the percentage of the grain that was broken, the size of the broken pieces, purity, length of time after milling (the surface of milled rice deteriorated with age) and so forth.

Accordingly, two sets of grade specifications were needed for rice—one set for rough rice (en cascara) from farmers to rice mills, and another set for milled rice from mills to consumers.

At the time, there were about 15 commercial varieties of rice in Peru and they appealed in different ways to different consumers. Different consumers liked different kinds of rice—sticky rice, long rice, short rice, etc. So one of the first things to be specified was the variety of the rice.

The other characteristics were more technical. The specifications used in the United States were given as an example. They would need to be somewhat different for Peruvian rice; i.e., adapted to the special characteristics in Peru.

If a simpler set of specifications could have been developed in Peru, it could have been applied through conferences among producers, millers, wholesalers, retailers, consumers, rice specialists from the Universities of La Molina and Lambayeque and rice marketing administrators from the government agencies concerned.

The reports of such conferences, the set of grade specifications, and the reasons for their use, would have had the greatest impact upon all parties concerned if they were widely publicized and if the simple screening and weighing equipment required were provided at cost.

Get grades into use. It was one thing to provide grade specifications. It was quite another to get them widely used. Most

farmers were not used to grades, and many traders preferred to buy and sell with the minimum use of objective standards and the maximum use of subjective obfuscation.

The first step in putting the grading system into effect would be to offer grading simply as a service, when requested. Whenever a seller was not sure that he was being offered all that his rice was worth, he could ask for the government to grade it. Then if the buyer had been offering less than the rice was worth, as established by the official grade, and if competition existed among the buyers, another buyer would be able to outbid the first one and the seller would get more nearly the full value of the rice.

Experience would show whether this "as requested" system of grading would work, or whether official grading would need to be required for all rice transactions.

In either case, positive steps would have had to be taken to keep the government graders accurate and honest. It would have been easy for the grader to favor a large rice producer, or mills, or other merchant for subjective reasons.

This danger could be avoided, as it had been in the United States and other countries, with other products as well as rice, by setting up "inspectors of inspectors." One sample of each lot of rice graded would be given to the seller, one to the buyer, and another sent in to the "inspector of inspectors," the head grader in Lima. Any grader who was not doing an accurate job, intentionally or unintentionally, would be detected and reprimanded. If he did not change his ways, he would be replaced.

An adequate budget would be needed, to provide trained graders to do the job well. But it was an essential responsibility of the government to provide and enforce honest grades, as well as honest weights and measures.

Keep governmental guaranteed prices. Government guaranteed prices were often called "incentive prices." They provided an incentive for farmers to produce to the maximum, uninhibited by concern that open-market prices would turn out to be low when the crop was ready for market. Most economists believed that farmers would produce more for a price that was specified and guaranteed in

advance than they would for an unknown and variable price—even though the unknown price would actually average as much as the guaranteed price.

Experience in a number of other countries, including the United States, Venezuela, and Japan, showed that setting the guaranteed price above the open-market price distorted production, and led to the accumulation of large surpluses of government ownership, or to the burden of large subsidies. Setting the guaranteed price at the open-market price level, however, avoided this danger. It permitted the government to acquire stocks when supplies were large, and return them to the market when supplies were small.

After the government had had some experience with this, it could proceed to a more sophisticated stage, and put a normal seasonal price movement into its guaranteed price, equal to the cost of storage over the seasonal period.

A similar result could be obtained more simply by setting the government price somewhat below the average open-market price for the year (or a longer period) and letting the open market raise the price later in the season to cover the cost of storage.

These storage methods could be used only with durable crops like rice, beans, wheat, etc., and not for perishable crops like tomatoes.

Set government prices at the farm, at wholesale, at retail, or all three. The simplest way to fix the price of a farm product was to set it at wholesale.

The reason for this was that wholesale markets were usually located at a central point, or at a small number of central points. The number of wholesalers was small compared with the number of farmers, country markets, consumers, and retail markets, and the quantities per wholesaler were large. Thus it was relatively simple to police (enforce) the fixed prices on a small number of wholesalers gathered together at one point or a few points, close to the seat of government.

The shortcoming of this system was that the farmers had no assurance that they would get the price that corresponded to the fixed wholesale price (minus shipping and handling

charges from their farm to the central market). Farmers could depend only on the competition of the open market and their own business acumen. Both of these were often not very adequate; in fact, this was one of the reasons for fixing prices in the first place.

Accordingly, there were strong economic and political reasons for setting prices at the farm. Whether the government could manage to do so depended upon how the rice was produced, as well as upon the financial power and technical competence of the government.

If a product was produced by a few large producers, the job of fixing prices at the farm was relatively easy. It required only a few government inspectors. But also, in that case, the job was less necessary, because the few large producers were likely to be able to get all that their product was worth in the market by themselves.

Conversely, if the crop was produced by many small farmers, the job was more difficult, but it was also more necessary.

Peru's experiences with beans were perhaps a useful guide for rice. The Peruvian government located local country buyers, who bought only a small part of the crop at the government fixed price. But the price was set at about the open-market level, and a buyer who offered less than the beans were worth knew that farmers would not sell to him, so the government buying program effectively set the price for the whole crop, even though the government bought only a small part of the crop.

Set different government prices for different grades. The single government price for rice provided no incentive for farmers to produce superior quality rice, nor for millers to mill it. This is one reason why the grade of domestic rice traditionally had been low.

Superior quality rice was worth more than common quality rice, so in previous years millers had been paying extra-official premiums to farmers for superior quality rice, and indulging in various practices to skim off the best quality rice for their own use; then they could turn the lower quality rice to the government explained earlier. Millers could make extra-official profits

from this, at the expense of the government, the producers, and the consumers of rice.

There were two contrasting ways to deal with this situation. One was to get the government more fully into the rice business. The other way was for the government to get out of the rice business.

Under both systems, the government would need to set up a two-part set of grade specifications—one part for rough rice, and the other for milled rice.

Under the first system, the government would pay different government prices for different grades of rice, reflecting the different values of the different grades in the market.

Under the second system, the government would pull out of the rice business. It would leave the prices for the different grades of rough rice and milled rice to be set, not by the government, but by the free play of competition in the open market. The government would maintain and preserve this competition by developing an extensive and detailed current and long-run market news system. This system would carry accurate and current news of market supplies, demands and prices to all producers, millers, dealers and consumers, who wanted to read or listen to it. They could all get the full value of the different grades of rice—"full value" defined as that amount a fully competitive market would pay—and consumers could all get their worth for the different grades of rice that they bought, according to their different tastes and purchasing power. Fully informed competition would reward business enterprise and efficiency so that production, milling, and distribution would steadily move into the hands of the most efficient low cost operators to the benefit of consumers and the country as a whole.

These prices would not be stable over periods of time, for free market conditions change from day to day and year to year. If this were disturbing to producers, the government could minimize this by standing ready to affect prices by purchases, storage, and sale, tariff actions, and other means consonant with its limited budget. Thus, the government could reduce fluctuations, without trying to eliminate them entirely. Most Peruvian rice producers committed their

profits ahead of time to finance each year's crop. For this reason, the introduction of these methods possibly had to await a more advanced stage of commercial and economic organization in Peru's rice-growing sector.

These different systems represented different economic philosophies, different stages of development and different political and business know-how. The choice between them was a matter for each country to decide. The economist's job was not to try to urge or cajole, but simply to outline and weigh the costs and benefits of the different possible solutions, in the light of economic analysis and experience, so that each country could make the best choice for itself.

In the study of price policy for milk¹ Geoffrey Shepherd and Lorenzo Souza E. found that the following milk price policy would maximize the welfare of Peruvian milk producers, distributors, and consumers:

(1) Administered prices, set not by the milk distributors alone, nor by the milk producers, nor the consumers, but by all three. The prices would be set under a formal system similar to those used in developed countries, within the context of world competition (free importation of milk powder).

(2) The sale of (a) completely reconstituted powdered milk at low prices, sufficient to cover costs, in the *barriadas* and (b) milk consisting partly of reconstituted milk, as at present, at medium prices, and (c) milk constituting entirely of domestic fresh fluid milk, at higher prices, for higher income consumers.

(3) A program to eliminate T.B. in dairy herds, over the following 15 or 20 years.

(4) An expanded program of research, education and extension to help Peruvian milk producers bring themselves technologically up to date. This would include dairy feed producers as well, for dairy feed was a limiting factor at the time.

(5) Import high producing cows only if they were going to be better fed and cared for than the present cows.

This policy would benefit the milk industry as well as consumers. The policy was felt needed for the milk industry, which would soon be feeling the competition of less expensive sources of protein for low-income consumers including:

(a) Milk powder purchased directly by consumers from retail stores, thus avoiding the high costs of fluid milk distribution.

(b) Inexpensive vegetable protein like Peruvita, and Incaparina, made from cottonseed and soybeans, etc. (Vitasoy, a drink made from these sources, was already outselling Coca Cola in Hong Kong).

(c) Inexpensive animal protein from fish flour, which had been approved for direct human consumption by the United States Bureau of Public Health.

This policy would help the milk industry meet its competition.

Below is a summary of a study made by Geoffrey Shepherd and Dale Furnish on price controls in Peruvian agriculture.² The study results included controlling prices under monopoly and competition and legal aspects of price controls on foodstuffs.

Controlling prices under monopoly. In Peru, a country with a relatively small population, a significant proportion of which lived outside the market system, monopoly was more prevalent than in countries with large populations. The reason was that many large-sized industries were more efficient and therefore had a lower cost per unit of output. The large firms thus could drive the small ones out of business. The output of a large-scale efficient plant was sometimes as large as the total demand for the product in the country. The production of the product then settled into the hands of a few large firms, or only one.

This constituted free enterprise, but not free competition; it was monopoly, or oligopoly. It led not to free prices, but to prices controlled by private enterprise.

¹Geoffrey Shepherd and Lorenzo Souza E. Price Policy for Milk. Special Reports--Iowa Mission. Iowa-Peru Program No. 7. Iowa Mission. Lima, Peru. March, 1968.

²Geoffrey Shepherd and Dale Furnish, "The Economic and Legal Aspects of Price Controls in Peruvian Agriculture," Iowa-Peru Program Special Report No. 2. Special Reports--Iowa Mission. Lima, Peru. June, 1967.

This was the situation in many industries in Peru and led to exorbitant profits.

Shepherd and Furnish suggested several ways for the government to deal with monopolies or oligopolies of this sort.

(1) Break them up. This method could result in numerous small inefficient high-cost and high-price companies, leaving the country worse off than before.

(2) Monitor them. Under this method, monopolies would continue to exist, but the government had access to their books and kept a close watch on them. When the industry was not operating in the public interest, the government could force it to do so.

(3) Bring the government in as a competitor, as discussed earlier.

(4) Declare the industry a "public utility" and set its price or rates.

(5) Nationalize the industry.

Different methods were required for different industries. The choice of method, and its specialized application, needed to be worked out separately for each case.

Controlling prices under competition. Small-scale farmers, because of their limited holdings and large numbers, were operating under conditions of competition. No one was large enough to affect the price. Stabilizing prices through government programs would give farmers a firmer foundation for their production and marketing plans.

Controlling prices under free competition required controlling the supply of the product, or the demand, or both. Setting prices simply by decree was likely to be disastrous.

The prices of durable crops could be controlled if, when large supplies were depressing prices, the government purchased the part of the crop that was deemed to be excessive. Then the government could put these excess supplies into storage until later in the season when supplies had become deficient. This deficiency would make prices rise so that the government could release the stocks to the market to depress the high prices about as much as the original purchase had raised them.

If the government performed less than complete stabilization, prices during the season would rise. If they rose enough to

cover the storage costs, the operation would not be costly to the government. Otherwise, the government could incur heavy losses. To operate such programs when the future was unknown required an accurate crop and market forecasting system, and careful planning.

There was need for Peru to define its price objectives more clearly. Governments in some cases could go further than stabilizing prices by raising the prices of farm products, or depressing the prices of foods to consumers. It was difficult enough to do either job alone, and impossible to do both at the same time (except by subsidy, which was beyond the means of most governments).

Raising prices to farmers would reduce the amount that consumers could buy, and leave both groups worse off than before. And lowering prices to consumers would reduce the amount that farmers would produce, again leaving both groups worse off in the longer run.

There were two or three long-run ways to reduce the price of food without harming farmers. One was to continue to help farmers produce at lower cost, by the proper use of fertilizer, insecticides, and other improved cultural practices. Another was to reduce the costs of marketing, which were as great as the costs of production.

A third way had been proposed at a conference on Latin American Presidents at Punta del Este. They had proposed a common market—free trade area—among the Latin American nations, with tariff reduction beginning in 1970 and proceeding to completion by 1985.

These were the long-run options, as Shepherd and Furnish saw them, to reduce prices to consumers without reducing prices to producers.

Legal aspects of price controls on Peruvian food products

Shepherd and Furnish further felt that the current law on business concentrations, price controls, and regulation of commerce in general was out of step with economic realities in Peru. The Constitution and other laws prohibited monopoly and commanded

freedom from government controls on commerce, especially price controls, except in exceptional circumstances. Despite this, almost every basic food item sold in Peru was subject to some form of price control. There were apparently problems with monopolies and monopolistic practices.

Ideally, the laws regulating commerce should reflect the economic facts in the restrictions they may place on economic activity. At the time, law revision commissions and the Congress were investigating Peru's trade regulation laws, to see if modifications were necessary in light of the existing situation.

Possible modifications suggested by Shepherd and Furnish included allowing price controls and monopolistic or oligopolistic activity under some conditions, but only in the interests of aiding public economic goals.

With the push to increase agricultural production, particularly food crops and export crops, attention turned to fertilizers.¹

CONAFER, the National Fertilizer Corporation, planned to install a small packet plant as an emergency measure to offset the fall in guano production in an effort to save foreign exchange. Several bids were received and one was studied in detail. The estimated cost of the plant was about \$11,000,000. Its rated capacity was about 125 metric tons of urea per day.

The original bid was on a 60-40 (credit-cash) basis. The project proposal by the bidder showed CONAFER selling urea at \$90.00 FOB plant and paying for the plant in 4 or 5 years. The General Manager requested a review of the project on the basis that CONAFER would have to finance the project (100 percent credit).

After recalculating the total outlay for a period of 10 years (nine years of production) on the basis that the plan could produce and sell at the rate of 60 percent the first year, 80 percent the second, and

100 percent for the remaining years, the average outlay per metric ton was estimated at \$108. This did not include interest costs on a \$2.3 million dollar loss in the first two years of operation which would have had to be financed.

At this time, urea was being imported at \$106.00 per metric ton CIF. The recommendation not to accept the bid was not popular but was accepted by the Directorate after several weeks of discussion and reviews.

Another fertilizer project plan had been completed by the United Nations' expert for CONAFER. This project was reviewed by a Peruvian economist according to law prior to being accepted. The data as presented by the report of the Peruvian economist was used to make this evaluation. The average outlay per metric ton of urea during the 10-year financing period (eight years of production) was about \$108.00. This did not include interest costs on a \$5.6 million deficit (which would require financing) during the first two years of operation.

Again the recommendation was not to accept this project, in contrast to the recommendation of the Peruvian economist. This was discussed for several weeks. Finally, a meeting was held with the Technical Manager, Chief of Industrial Projects, the Peruvian economist and Robertson to discuss the project. The general conclusion was that the plant was not economical as proposed. After the meeting, the Board of Directors decided not to accept the project based on the large deficit that would result in the first two years and the high cost of urea from this plant (it should be stated that the production cost was reasonable). The problem was the financing burden—about \$38.00 per metric ton of urea. The estimated cost of this plant was about \$23,000,000.

CONAFER's plan was to put the packet plant into operation as an emergency measure and then later install the larger urea plant. Fortunately, \$34,000,000 were saved in investment costs.

Two of the worthwhile experiences for Robertson during his first two years in Peru were the presentation of his research project to the Primer Congreso Peruano de Ingenieros Quimicos and an appearance in the Directorate meeting of a Senatorial Investigation

¹Abstracted from Thyrele Robertson, "Final Report." Iowa-Peru Program Staff Reports. Iowa State University. Ames, Iowa. July 14, 1967.

Committee. By request he presented his fertilizer research project to the First Congress of Peruvian Chemical Engineers including a brief meeting with President Fernando Belaunde-Terry followed by his presentation of research methods and results to 30 Peruvian scientists.

By special request from the president of CONAFER, Ing. Carlos Llosa, Robertson gave a presentation on the problems confronting the development of an efficient Peruvian fertilizer industry to a Senate Investigation Committee. He explained to this Committee why CONAFER had rejected the two proposed nitrogen plants. This part of the presentation was very well received because at the time the newspapers and Congress were criticizing CONAFER for not building a fertilizer facility.

National Planning Results

The recognition by the Peruvian Government that agrarian reform and agricultural development were intimately tied to national growth led to several studies concerned with national and regional development within which the agricultural sector played an important role. This recognition was implemented by the newly organized National Planning Institute (NP).

This work, included in an amendment to the Contract, brought growth economists into the construction and application of models to the Peruvian economy, concerned with aggregate and sectorial growth rates, balance of payments, policy instruments, production functions, projects and data systems.

The following analysis of aggregate and sectorial growth rates in Peru for the period 1960-1970, was included in material written by Erik Thorbecke at the request of the National Planning Institute of Peru, during the period September, 1963 to April, 1964.¹ Certain parts were incorporated, directly or

¹See Erik Thorbecke, "Determination of Aggregate and Sectorial Growth Rates for Peru, 1960-70." International Studies in Economics. Iowa-Peru Program Monograph No. 1. Iowa State University. Ames, Iowa. January, 1966.

indirectly, in the official Public Investment Program for 1964 and 1965.²

Under two per capita growth rate alternatives, the rates of growth of primary production (4.9 and 5.7 percent) and of other services (4.9 and 6.5 percent) were lower than the averages of 5.5 and 7 percent, respectively, for Gross Domestic Product. The projections for agriculture were perhaps optimistic in view of the institutional reforms which were taking place, such as agrarian reforms, and the time needed for these reforms to affect output favorably. Fishing was included under agriculture. Even though the value added in fishing was still a small proportion of that in agriculture per se, the fishing growth prospects appeared excellent.

Thorbecke contended that the above growth rates for agriculture could be achieved only if the government embarked on a national and consistent policy of providing more social overhead capital, technical assistance, credit and other farm inputs to small-scale farmers in the Sierra. Even then, it was possible that the impact of these recommended actions might not be reflected in a substantial increase in output until after 1970.

The projections which were derived for industry in general appeared reasonably sound to Thorbecke, with the qualification that a strong public (and private) effort would be needed to implement these rates.

Thorbecke checked the consistency of the rates of growth of manufacturing on the basis of the Economic Commission of Latin America's (ECLA) study of the relationship between the rates of growth of manufacturing and of Gross Domestic Product for a number of Latin American countries. He computed the elasticity of industrial growth to global growth,

$$\epsilon_{i/g} = \frac{\frac{\Delta M}{M}}{\frac{\Delta \text{GDP}}{\text{GDP}}} \text{ where } M \text{ was manufacturing output,}$$

²Instituto Nacional de Planificacion, Gobierno del Peru, Programa de Inversiones Publicas 1964-65, June, 1964.

to be between 1.2 and 1.3 for Latin American countries at the current stage of development of Peru. For a rate of growth of GDP of 5.5

$$\left\{ \frac{\Delta \text{GDP}}{\text{GDP}} \right\}$$

percent, he expected the rate of growth of manufacturing to fall between 6.6 and 7.15 percent; for a global rate of 7 percent, he expected 8.4 to 9.1 percent. The relatively very high rates of growth which he obtained for construction (7.9 and 9.5 percent) appeared consistent with the objectives of the government.

Finally, Thorbecke issued a note of warning with respect to the methodology used in deriving the projections. The growth rates were determined on the basis of international cross-sectional parameters and on the assumption of certain actions by the government. At the same time, since each sectoral growth rate was derived independently, no mutual consistency check in terms of an input-output framework was undertaken.

Findings from the balance of payments study performed for the National Planning Institute by Erik Thorbecke and his associates Rene Vandendries and Pedro de los Casas¹ were incorporated into the Programa de Inversiones Publicas 1946-64.²

Thorbecke et al. projected the balance of payments of Peru for the period 1964-71. The projections were made in terms of current dollars up to and including 1965. Since no estimation existed of changes in imports or exports prices or implicit Gross Domestic Product price deflator, the figures for 1966 to 1971 are equivalent to constant 1965 dollars.

Each major transaction entering the balance of payments was estimated and

¹Erik Thorbecke, Rene Vandendries and Pedro de las Casas, "Peru, Balance of Payments Projections, 1964-70." International Studies in Economics. Iowa-Peru Program Monograph No. 2. Iowa State University. Ames, Iowa. January, 1966.

²June, 1964, Instituto Nacional de Planificación. Gobierno del Peru, June, 1964.

whenever necessary the consistency between transactions (such as between new loans and future amortization and interest charges) was calculated and checked.

Exports of Merchandise and Services

For merchandise exports (FO B) Thorbecke et al. used data based on a detailed product-by-product projection of export prospects made by the Foreign Trade Department of the Peruvian National Planning Institute (INP). For 1964 and 1965 they projected both volume and price changes, whereas for the subsequent years they only estimated volume changes.

Exports of services were calculated as a fixed proportion of merchandise exports. The ratio of the former to the latter was taken as 0.19, which is consistent with the historical experience and the very stable level of this ratio annually between 1950 and 1962.

The sum of merchandise exports (FO B) (item a above) and services exports (b above) provides the projected values of total exports.

Imports of Merchandise and Services

For merchandise imports (CIF) Thorbecke et al., after experimenting with a number of import functions, finally selected two functions. These functions were statistically fitted by least squares using observations covering the period 1950-62.

The first function expressed imports of capital goods as a linear function of Gross Investment expressed in constant 1960 prices. The second function gave imports of all other goods (raw materials, fuels and consumption goods) as a linear function of Gross Domestic Product. The statistical significance of these two regression lines was relatively high, as indicated by the value of the coefficient of determination (R^2).

The form of these function was as follows:

$$1. M_{CI} = -989 + 0.5289I_{CI} \quad (1950-62)$$

$$R^2 = .86$$

where,

M_{cn} = imports of capital goods (CIF)
in million soles at constant 1960
prices in year n

n = 1950, ..., 1962

I_n = Gross Investment in million soles
at 1960 prices.

$$2. M_{Tn} = -686 + 0.1275Y_n \quad (1950-62)$$

$$R^2 = .88$$

where,

M_{Tn} = imports of noncapital goods in
1960 soles

n = 1950, ..., 1962.

Thus, total imports of goods (CIF) = M_{cn}
+ M_{Tn} .

These functions were used to project imports by incorporating the corresponding value of Y_n and I_n . Gross Domestic Product (Y_n) was assumed to grow at seven percent per annum over the period under consideration, while the values used for gross investment came from the macroeconomic projections of the INP.

Once total merchandise imports had been estimated—on a CIF basis—and at constant 1960 soles, these data were converted into current dollars in the following way: First, the imports in constant soles were derived, i.e., $Q_n P_{60}$ (volume in year n at 1960 prices); second, the latter value was multiplied by a price index corrected for exchange rate variations:

$$\frac{Q_n P_n R_n}{Q_n P_{60} R_{60}}$$

Where, R_n and R_{60} are the exchange rates in years n and 1960, respectively, expressed as the amount of dollars per unit of domestic currency (sole).

Third and finally, the product of the two preceding steps was multiplied by the rate of exchange in 1960. In this way, the current dollar values ($Q_n P_n R_n$) were

obtained for total merchandise imports (CIF):

$$Q_n P_{60} + \frac{Q_n P_n R_n}{Q_n P_{60} R_{60}} \times R_{60} = Q_n P_n R_n$$

To arrive at the total value of imports of goods and services, Thorbecke et al. added 10.6 percent to merchandise imports. This last percentage was based on a historical examination, between 1950 and 1962, of the

$$\frac{\text{Imports of goods and services}}{\text{Imports of goods (CIF)}}$$

ratio which remained quite stable, averaging 10.6.

The series of import values obtained following this procedure included some import substitution of an essentially passive form. Since the preceding projections were based on historical data, any import substitution induced by new government policies would have to be calculated separately.

On the basis of a preliminary and tentative study by the Planning Institute, it appeared possible to achieve an import substitution of 45, 52 and 60 million dollars in 1968, 1969 and 1970, respectively. Thus, the final projections of imports of merchandise and of services appearing in the balance of payments were made out of a structural part and a "policy" part which depended on the measures to be taken by the government to encourage and achieve import substitution.

The inflow of new private investment was highly sensitive to changes in the political situation and to the availability of complementary public social overhead facilities and infrastructure. In the projections, Thorbecke et al. assumed that net private investment would grow substantially in response to the availability of additional social overhead facilities. Thus, net private investment would increase from a relatively low average level of between 5 and 10 million dollars in 1970. This last amount was only slightly higher than the annual net inflow in some of the years preceding 1964.

Likewise, servicing of private investment was roughly adjusted to the stream of new inflow.

This item was subject to erratic and essentially volatile forces; consequently, the projected amount of net short-term capital investments was placed at zero.

With respect to public investment, Thorbecke et al. made projections on the basis of a detailed study of the absorptive and of the foreign indebtedness capacity of the Peruvian economy.

For subsequent years no thorough study was made of the absorptive capacity of the public sector, so the data used were broad estimates consistent with the "big push" doctrine according to which the investment effort was to be concentrated on 1966 and 1967. Thorbecke et al. assumed that the average interest charges on new public investment would be six percent with a maturity of 15 years.

They used a rule of thumb that a desirable level of international reserves is the equivalent of three months of imports (or 25 percent of the value of imports). Given the above magnitudes, they estimated that the international reserves of Peru would amount to 23.2 percent of imports at the end of 1964, and to only 22.4 percent by the end of 1970. Even though a slight accumulation of reserves was projected for the period 1963-70 (66 million dollars), the relative level of reserves as a function of imports was to have declined.

The main conclusion of Thorbecke et al. was that an annual rate of growth of Gross Domestic Product of seven percent over the period 1964-71 appeared compatible with a balance-of-payments equilibrium.

In an approach to analyzing policy instruments in the economy of Peru, Gene Brady provided a valuable framework in a study he completed for the National Planning Institute.¹

¹Eugene A. Brady, "A Methodological Procedure for Analyzing the Policy Instruments of All Underdeveloped Economy--Using the Economy of Peru as a Demonstrative Case." *International Studies in Economics*. Iowa-Peru Program Monograph No. 9. Iowa State University. Ames, Iowa. November, 1968.

He assumed that the policymakers for Peru wished to achieve the targets of a 5.6 percent annual growth of real income, balance of payments equilibrium, and limitation of price inflation to ten percent per year or less. He considered the following five instrument variables subject to their control: the level of government expenditures, the marginal profits tax rate, the marginal rates on indirect taxes and the money supply. Since the number of instruments was greater than the number of targets, the policymaker could arbitrarily fix the levels of any two instruments and then manipulate the other three instruments to achieve the desired three target objectives.² Brady set up the model for this problem as follows:

<u>Equation</u>	<u>Type and Description</u>
$U = A+aY$	Behavioral consumption function
$V = B+b(Z-TP)$	Behavioral investment function
$G = G_0$	Exogeneous government expenditures
$X = X_0$	Exogenous export level
$M = C+c_1U+c_2V$	Import function
$Z = D+d_1U+d_2X$	Profit function
$TP = E+eZ$	Profits tax function
$T^I = F+f_1U+f_2X$	Indirect tax function
$p = G+gC$	Absolute price level function

²For example, see J. Tinbergen, *Economic Policy: Principles and Design*, North-Holland Publishing Company, 1956; N. V. A. Narasimham, *A Short Term Planning Model for India*, North-Holland Publishing Company, 1956; and Elias T. Balopoulos, *Fiscal Policy Models of the British Economy*, North-Holland Publishing Company, 1967.

$$Y = U+V+G+X-M \quad \text{Definitional}$$

$$\frac{\dot{Y}}{Y} = \frac{\dot{p}}{p} + \frac{\dot{Y}^*}{Y^*} \quad \text{Definitional}^1$$

His revised model consisted of seven equations, an exogenous level of exports and exogenously determined government expenditures. He then classified the variables of the model into three possible categories: (a) targets, (b) instruments, or (c) data and irrelevant variables:

Targets

- (1) $\dot{Y}^*/Y^* = 0.056$ per year
- (2) $\dot{p}/p \leq 0.10$ per year
- (3) $D = X - M = 0$

Instruments

- (1) G_0 : level of government expenditure
- (2) e : marginal profits tax rate
- (3) f_1 : marginal indirect tax rate on consumption
- (4) f_2 : marginal indirect tax rate on investment
- (5) C : quantity of money.

Data and Irrelevant Variables

These variables included the intercept coefficients of the functional relationships (A, B, C, D, E, F, G), the noninstrument slope coefficients of the functions (a, b, c_1 , c_2 , d_1 , d_2 , g), and the exogenous variable X_0 .

Brady's study on production functions for the industrial sector of Peru, developed

a methodological approach to estimating demands for inputs and outputs for Peru.² In it he argued that the empirical study of the Peruvian industrial sector formed a basis for an assessment of the impact that policies affecting the industrial sector would have on the economic development of the overall Peruvian economy. Historical data showed that the output of the registered industrial sector had increased almost as fast as that sector's capital, and that the rates of growth of capital and output had both considerably exceeded the rate of growth of the labor force employed in the registered sector. Over the period 1950 through 1961, both capital and output had increased at an annual cumulative rate of about 22 percent, while the labor force had increased slightly less than 14 percent per year. Thus, the change in the level of technology had induced an increasing ratio of capital to labor over the period, and the capital stock had increased about eight percent per year faster than the labor force. In 1950, there were about 39,000 1960 soles of fixed capital per man in the registered sector. By 1961, this figure had increased to slightly over 100,000 1960 soles per man.

The development that took place in the industrial sector of Peru in the decade of the 1950s was characteristic of the type of technological change that a developing economy goes through in the process of industrialization. The growth of overhead capital was more rapid than the growth of the labor force. This secular increase in the proportion of capital in the input mix had resulted in an increase in output and a significant increase in the real income of labor employed in manufacturing. However, the amount of labor used in the production process was not rising as fast as it would have if the change in technology were not labor-saving and capital-using.

Brady defined a labor-saving technological innovation as one which raised the

¹The dots over the numbers refer to their rates of change with respect to time. Thus, $\dot{Y} = dy/dt$, and $\dot{Y}/Y = (1/Y)(dY/dt)$. The latter is the percentage rate of growth of income.

²Eugene A. Brady, "Production Functions for the Industrial Sector of Peru," *International Studies in Economics*. Iowa-Peru Programs Monograph No. 5. Iowa State University, Ames, Iowa. November, 1967.

capital/labor ratio. He criticized the Harrod definitions of a capital-saving change in technology (one which decreases the capital/output ratio) and a labor-saving innovation (one which tends to increase the capital/output ratio) as incapable of differentiating between a shift of the production function and a movement along it. For example, the Harrod definition would consider the type of technological change the Peruvian industrial sector had undergone in the decade of the 1950s as a neutral innovation (neither capital-saving nor labor-saving) because the aggregative capital/output ratio in the manufacturing sector remained roughly the same over the period. However, as Brady indicated, technological change in the manufacturing sector had clearly been labor-saving.

The introduction of new technologies that substituted capital for labor over time led to aggregative increases in output that were greater than the increases in labor inputs required in the production process. Brady contended that if this could be done in an aggregative sense, then the obvious result was an increase in the overall productivity of labor and a rise in the real wage over time. However, if the economy did not have sufficient capital to increase capital stock at a rate sufficient to absorb the increasing population into the employed labor force, then the paradoxical situation would develop in which aggregative output and unemployment were both increasing.

The policy instruments that the Peruvian government had utilized in the industrial sector were clearly geared to induce labor-saving and capital-using changes in the level of technology.

The Peruvian Industrial Development Law was the major policy instrument that affected the industrial sector. The target of the Industrial Development Law was the enlargement of the existing industrial structure in Peru, and the instruments were primarily inducements to the private sector to invest capital in the industrial sector, without discrimination between domestic and foreign sources. The Law covered those manufacturing activities in the 20 groups classified by the International Uniform Industrial

Classification of the United Nations.

The article of major relevance was the provision of permanent exemption from import duties and consular fees of machinery and equipment that was essential to the manufacturing process. This instrument applied to existing firms and to new businesses formed within 10 years from April 26, 1960. The equipment had to be essential to the industrial process of the importer; not compete with equipment of the same kind already produced in Peru, and be entirely new. Article 32a of the Industrial Promotion Law stated that the specific reason for the latter provision was to develop an entirely new and modern industrial plan in Peru, and stated that the general focus of the Industrial Development Law was to set in motion economic forces that would contribute to this target. In addition, Article 47 stated that the objective of the Law was to discourage the importation of used equipment and machinery by subjecting it to high import duties.

The overall focus of the Industrial Development Law, which subsidized the import of new capital equipment, relative to old or obsolete equipment, was to provide the Peruvian industrial sector with modern technology. However, unless Peru was capable of generating sufficient capital to duplicate the technology of advanced economies in all sectors, policies pursued in the industrial sector would run counter to the then state of, and feasible growth rate for, endowments of capital and labor. Peruvian policies to stimulate the industrial sector by promoting the utilization of modern labor-saving methods of production could, at the same time, raise the per capita income of labor in the manufacturing sector and increase aggregative unemployment. This could lead to the paradoxical situation where the economy had a higher mean per capita level of real income with a resultant more unequal distribution of real income. If mean per capita real income rose while median per capita real income fell, it was difficult to assess whether this was an increase or a decrease in aggregative welfare.

Schreiner and Timmons developed an integrated growth model for the basic sectors and dependent residential sectors and applied it

in Southern Peru.¹ They found that, in 1963, per capita income in Southern Peru was 74 percent of the national per capita income level. Lower income levels in Southern Peru had instigated a natural equilibrating force equating factor returns to labor between regions. This equilibrating force was observed in migration rates between areas of low wage payment and areas of high wage payment. Southern Peru's population growth rate had been 1.13 percent annually versus 2.25 percent for the entire Republic and 4.32 percent for the departamentos of Lima and Callao.

Schreiner and Timmons found labor movement from low wage areas to high wage areas to be in agreement with the theory of spatial equilibrium, which stated that factor payments tended toward convergence due to marginal spatial adjustments of all factors in a perfectly competitive market. The process of establishing spatial equilibrium, however, was slow. In addition, institutional rigidities of the system prevented or slowed the movement to spatial equilibrium. Hence, the lack of an organized capital market prevented movement of capital to areas where it was needed most, and an alternative distribution system was established with other than highest returns as a criterion. Government policies and changes in government policies disrupted natural processes of spatial adjustment. Indirect government subsidization of certain sectors through import duties created artificial equilibrating forces and discriminated against regions which had a comparative advantage in producing commodities of the nonimport duty sectors.

A more realistic tendency for economies was toward a center-periphery relationship, particularly with a strong national capital dominated social and intellectual activity. Such a relationship was strengthened by economies of agglomeration and imperfect or

biased information concerning peripheral opportunities.

Schreiner and Timmons hypothesized that:

(1) Complete and accelerated spatial equilibrium was inoperable in Peru (limited to the relationship between Southern Peru and the Republic) without external forces directed by national policy.

(2) Lagging development in social and educational facilities hindered changes in occupational mixes to keep abreast of changing technologies, and retained the professional and investor type personnel within the region.

(3) National policy with respect to food imports discriminated against the agricultural regions of Peru, particularly Southern Peru.

(4) Intermediate policy variables were available to move Southern Peru closer to the per capita income level of the national norm.

Despite the forces creating interregional income inequalities, Southern Peru had a powerful force operating which was improving its per capita income position. This force was its favorable export base. It was claimed that a region developed only as its export base developed. A theory of regional development was evolved which advocated that the main thrust to development came from the exports of a region, which acted as income generators. To service the export sector and the wage earners of the export sector, residentiary activities developed and acted as income multipliers to the initial export earnings.

With this basis, Schreiner and Timmons developed an economic growth model of the basic sectors and dependent residentiary sectors of Southern Peru. Within the framework of the model, the four hypotheses were tested. Data organization of the model followed input-output accounting procedures. A unique set of input-output relationships was estimated. The closed portion of the input-output matrix included only the basic sectors, which were defined broadly as the export base. Data availability permitted detailed information analyses of the basic sectors. Nonbasic or residentiary activities were not so well defined on a regional basis.

¹Dean A. Schreiner and John F. Timmons, "An Integrated Growth Model for the Basic Sectors and Dependent Residentiary Sectors of Southern Peru," *International Studies in Economics. Iowa-Peru Program, Monograph No. 7.* Iowa State University, Ames, Iowa. November, 1968.

By establishing a relationship between basic sector income and residentiary sector income, a complete accounting system had been estimated, one surprisingly adaptable to most conditions. National parameters describing residentiary income as a function of basic sector income were assumed for the regional model.

The researchers made additional assumptions to those conventionally used in input-output analysis in determining direct and indirect sector requirements from an exogenous change in final demand:

(1) Domestic and international imports were a linear function of domestic output.

(2) Inputs to the residentiary sectors of materials from the basic sectors were a linear function of total residentiary output, which in turn was a function of basic sector output. Thus, a new basic sector interaction matrix was defined.

(3) Net value was added linearly to total sector output. Multiplying the net-value-added vector by the new basic sector interaction matrix yielded a set of basic sector income multipliers for the region.

The results of the Schreiner and Timmons model suggested certain policy considerations that had not been evident previously. For a less developed region of a country, regional convergence to the national norm of per capita income growth and per capita income levels had not been a natural development. This had also been proven for Southern Peru with respect to assumed national parameters for income growth. What was more striking was the fact that generated regional income was within three to eight percent of the regional income targets for this presumably underdeveloped region. The significance of this fact was that regional convergence of per capita income levels in Southern Peru to the national average was possible with only slight policy changes.

A major contribution to the development of Southern Peru was its favorable export base. The largest single surge for Southern Peru had come from its copper exports. In addition, coffee exports had increased at an annual value rate of 20 percent from 1950 to 1965. Fish-meal value exports had increased 25 percent over the same period. Value of

silver exports had increased at a 10 percent annual rate. Southern Peru had also been in a favorable position with respect to domestic exports to other parts of Peru. There had been large increases in national demand for industrial fruit crops of olives and grapes, significant export crops from Southern Peru, since 1959. National output of prepared milk products and beverages had substantially increased. These products were also exported from Southern Peru.

Schreiner and Timmons saw further effects of the current relationship of Southern Peru to the Republic in the departamento population growth rates and the per capita income index. They estimated that with respect to the per capita income level of 1961, population in Southern Peru should have been increasing at a 1.64 percent annual rate. Population in Southern Peru between 1940 and 1961 had increased at a 1.13 percent rate. The favorable position of Southern Peru during the latter part of this period suggested the hypothesis of a larger population growth rate in accordance with the higher per capita income level.

Before applying this model to expected conditions in Southern Peru for the projected time periods of 1970, 1975, and 1980, Schreiner and Timmons verified the regional response of residentiary income to basic income. They further emphasized the importance of the distribution of generated income in Southern Peru. If every 1,000 soles of increased basic sector income in Southern Peru did not create an additional 1,336 soles of residentiary income, then the effects of the new ratio had to be traced out through the model and a new regional income gap determined. Lack of a system of regional accounts prevented estimation of this relationship. It was doubtful that each basic sector produces the same residentiary sector income multiplier. For this reason, Schreiner and Timmons explained that expansion of sectors which possessed the highest residentiary income multipliers would have the most beneficial effect on income distribution.

Economic data generated by the model were also relevant to private sector policymakers. For example, with the expansion of the prepared milk industry in Southern Peru

and the expansion of fish canning, the need for tin products and alloys was increasing. Effective demand for tin products was determined directly, using the direct and indirect requirements matrix. Tin ore supplies from Bolivia which passed through Southern Peru could be incorporated into a feasibility study within the model to determine other needed inputs and resources for production of tin products for use in Southern Peru and as exports to other parts of the country.

James R. Prescott developed a model accounting system for project analyses.¹ This study resulted in the report which discussed the relative advantages of a data system for the projects section within the I.N.P. At the time, various feasibility study contracts had been executed with engineering firms in Peru and the United States to do initial substudies of the economic, engineering, agronomic and meteorological aspects of project development. A benefit-cost analysis was part of the economic substudy for each project.

The first part of Prescott's report described an accounting system for project data utilizing approximately sixty items from a statement of operating receipts and expenditures, a brief cash-flow account and a balance sheet. A separate section discussed the types of economic variables which would be of most use in formal economic analysis.

The second section dealt with the types of analyses which could be performed with the system recommended in the first section. It was broken down into two major parts: (1) individual project analysis, and (2) uses of project data in economic models. The data could be used to evaluate on an annual basis the efforts of project management in cost control, inventory handling and other aspects of actual operation. Competitive norms for efficient management could be developed and analyzed. The data could also be used in formal economic models and less formal analyses of public investment on an inter-regional and intersectoral basis. Both of

¹James R. Prescott, "A Model Accounting System for Project Analyses." Staff Report No. 23. Iowa-Peru Program. Iowa State University, Ames, Iowa. June, 1964.

these types of analysis could be accomplished by Prescott's accounting system, supplemented by other economic variables.

Prescott's third section, requested by the Projects Section of the I.N.P., dealt with project analysis used by the United States government. Benefit-cost analysis had been formally required in certain areas of water resources since 1936. This section reviewed this experience, described the economic basis for the analysis and illustrated the concepts with specific application to hypothetical data. This section was supplementary to the main task of developing the projects inventory.

In the forward to Peru Program Staff Report No. 25, the following memo was included:

TO: AID/W TOAID A-722
FROM: LIMA
DATE: November 26, 1965

"On the following pages, USAID is presenting the end-of-tour report of Apostolos Condos, who served in Peru as research associate in economic planning under the Iowa Universities contract from September 11, 1963 to November 17, 1965. Mr. Condos was a member of the initial three-man unit from the Iowa team which has been working with the National Planning Institute on improved methods for diagnosing policy and investment needs basic to an accelerated and more orderly growth process in agriculture and other sectors. This work has been conducted under the leadership of Professor Erik Thorbecke who was stationed in Peru in 1963-64 and who since then has kept in close touch with Iowa's activities in the National Planning Institute.

"Mr. Condos concentrated on the design and empirical application of constructs for identifying and linking together the development policy variables which have a key bearing on Peru's national income growth rate—taxes, public investment, domestic consumption, exports and imports, and others. A companion piece of work is currently being completed by Iowa's Professor Eugene Brady. The results of these analyses will provide Peruvian planners and policymakers, as well as external assistance agencies, with a much

more comprehensive basis for pinpointing the quantitative effects of possible changes in fiscal and monetary policies than has existed heretofore; previous national economic policy decisions have been based largely on personal judgments and analyses which do not take into account important interrelationships.

"Iowa technicians in Peru will be working with personnel in the National Planning Institute and related agencies on the development of more specific policymaking information related to Peru's foreign trade,

price stabilization, and regional development priorities. Among those providing leadership in this work will be five Peruvian economists who have recently returned from graduate study in the U.S. under AID/Iowa auspices."

For the Ambassador

George J. Greco
AD/USAID/Peru

PART FIVE: AGRICULTURAL SECTOR ANALYSIS

AND PLANNING:

CONTRACT AID/1a-592 (1/1/69-6/30/74)

Purposes of Work

According to Contract AID/1a-592, the broad objective of this contract was to assist the Government of Peru in the formation, as an institutionalized element in the planning process, of an improved and expanded capability to execute economic planning research and to attempt to insure the prompt incorporation of the results of such research into the Government's planning, programming, budgeting and evaluation process. The intermediate contract goal was to improve and increase applied research activities and improve planning quality that influences development policies. The ultimate goal was to increase the annual growth rate of food production and marketing to satisfy the internal food demands of Peru's rapidly increasing population.

In an amendment to the Contract in April, 1972, a more specific purpose was introduced to include assistance to Peruvian institutions in their efforts to formulate and implement effective planning and project evaluation with emphasis to be placed on production, marketing, and price associated with policies affecting agriculture production, particularly meats and edible oils.

Procedures and Working Environment

The Military Coup which took place on October 3, 1968, resulted in reorganization of Peruvian agencies and transfer of the counterpart Peruvians with whom Iowans had been working. Thus, the Iowa mission found it necessary to utilize considerable effort and discretion in establishing new working relationships and obtaining reconfirmation by the new Peruvian Government of mutual obligations and responsibilities. Complicating

this transition, U.S. and Peruvian governmental relations became strained as the U.S. endeavored to apply the Hickenlooper amendment when the new Peruvian Government nationalized certain industries and firms in which U.S. companies had substantial financial interests.

These instabilities continued into 1969, when on April 9 the U.S. Government instituted a "deferral period." The Iowa Mission was instructed by USAID to take no new initiatives with regard to its programs and to comply only with existing firm commitments toward Peruvian counterpart agencies. As the result of compliance with this policy, Iowa Mission staff members whose tenure in Peru expired were not replaced and the Mission staff was reduced to three individuals by June 30, 1969. The deferral policy continued throughout 1969 into mid-1970, as remaining Iowa Mission staff members continued to work with their Peruvian counterparts on existing programs. Despite the severe limitations imposed by the political situation, considerable progress was made in specific areas. Technical assistance was provided to OSPA, National Agricultural Marketing Corporation, Direccion of Statistics, MOA, Universities and other institutions.

To effect a maximum multiplier in terms of a reduced Iowa Mission staff (Chief-of-Party and two specialists), the Government of Peru made budget funds available directly to the Iowa Mission for use in providing "research fellowships" to Peruvian university students and junior faculty to work on studies supervised by Iowa Mission staff. Throughout the so-called "deferral period," twenty to thirty Peruvian students and young faculty were working on a half-time basis on a wide range of studies, including legal, macro- and micro-economic and sociological subjects.

It was during this period that the Fundacion para el Desarrollo Nacional was

established, with assistance of the Iowa Mission, as a vehicle for continuing within a Peruvian institution analytical studies on various aspects of Peruvian development problems.

The Fundacion continues to function in their role.

The goal was to pursue a continuing effort in sector and regional analyses that could eventually result in quantitative sector modeling, related to the development of alternative policies and investments proposed or taken by the GOP.

In 1971, two additional events took place which affected the Iowa Mission. One was the release of "Evaluation of Peruvian Agriculture Relative to USAID Assistance" known as the Caton Report; the other was a study of the AID programs in Peru, including the Iowa Mission, made by the AID Inspector General's Office.

Both reports expressed concerns that recent studies made with Iowa Mission help had not been translated into action by the GOP.

One result of these reports was the development of proposed "sub-sector" studies by AID/PERU as AID struggled to maintain a semblance of intercountry cooperation. The idea was that the Ministry would select a priority product or topic for a study to be conducted largely by Peruvians but with U.S. financing and technical assistance from the Iowa Mission.

This approach became AID policy, culminating in early 1972 in the proposal for joint Peruvian-U.S. studies on meat and edible oils. This new policy went into effect in March, 1972, and was reflected in an amendment to the Iowa Contract in April, 1972. The two remaining Iowa Staff members were active in preliminary aspects of the proposed studies, drafting suggestions, terms of reference and attending meetings.

In May 1972, a new PRO/AG between AID and the Ministry of Agriculture was signed, which included elimination of the Iowa Mission account "Project Support in Peru." This measure caused difficulties since it shut off all U.S. current expense aid to on-going Iowa Mission projects, including Fundacion para el Desarrollo Nacional, legal compilation pro-

ject, program to improve land transfers, and projection of irrigation water flows. This meant that the Iowa Mission became dependent for project financial support on funds available in the Ministry, but there were none.

In July 1972, due to a critical shortage of foodstuffs, a program to develop a national food production plan began in the MOA. This absorbed much of the time of Ministry employees. Furthermore, in November, a thorough reorganization of the Ministry began and continued for six months. This, too, affected Iowa Mission counterparts, which interfered with the technical cooperative work of the Iowa Staff.

There was one project which showed real promise in 1972. The Iowa Staff in collaboration with OSPA personnel developed a detailed proposal for the initial steps leading to sector analysis. However, AID did not approve the proposal, ostensibly because of funding problems. Rejection of this proposal seriously damaged AID's relations with OSPA. Later on, when AID indicated that the project could be financed, Peru reacted negatively and decided that the project could not be fitted into OSPA's plans.

These were difficult times for the Iowa Mission. Very little could be accomplished as the Peru Government turned inward and foreign advisors were not particularly welcomed. This was neither a productive nor pleasant period in technical assistance for foreign advisors. By August of 1973, there were no Iowa Staff in Peru, except the Chief of Party. About this time, Peru's Decree Law of International Technical Cooperation (D.L. 18742) went into effect. This law required that all international technical assistance from henceforth was to be planned, approved and directed by the Peruvian Agencies. This law reflected the independence and national pride of the Peruvians and constituted a reasonable and probably long overdue policy by the Government. This law was Peru's remedy to the proliferation of technical assistance agreements whereby the MOA had basic agreements with 22 countries and international organizations.

In retrospect, the Iowa Mission could well have terminated at this point. As Peru and U.S. relationships were very strained,

with the predictable fallout effect on the Iowa Mission, this course was seriously considered by Iowa and by AID.

On the other hand, the Iowa Mission provided a nucleus of international goodwill between the two nations from which could be built future improved relations. This, in fact, did occur during the next Contract period. Toward the end of 1972, relationships between the U.S. and Peru improved and steps were initiated to revive technical assistance work. Fortunately, the Iowa Mission had remained in Peru to help in this revival.

On December 4, 1972 the Minister of Agriculture, General Valdez, in a letter to AID/Peru outlined a program of technical assistance to which AID resources could be applied, thus providing the basis for Project Agreement No. 21, signed in early 1972. The Minister's letter brought out a number of major points which can be summarized as follows:

1. AID assistance should focus on the solution of specific problems considered by the Government of Peru as having top priority within the Agricultural Sector.

2. AID assistance should address not only problem areas involving specific products or groups of products, but also other aspects of the agricultural sector related directly and indirectly to specific problems.

3. There was a need for developing a methodology for performing continuous integral analysis of the Agricultural Sector.

To address these problems, assistance in four areas was requested: (1) technical advisors, (2) long-term academic and short-term non-academic training abroad, (3) other support activities such as on-the-job and in-country training, and equipment, and (4) special studies of problem areas which could serve as reference for action programs and policy determinations to improve performance of the agricultural sector.

Project Agreement No. 21 initiated a new orientation of USAID assistance to Peruvian agriculture. Project Agreement 21 reflected USAID's attempt to align itself with the dominant policy thrusts of the military government. Hence the deemphasis on agricultural science and a shift towards the social sciences, particularly the field of agricul-

tural planning and policy analysis. This area, which had been a minor component in USAID's effort in the recent past, now became its major component.

Activities and Results

Responding to the minister's request, USAID technical assistance efforts entered a new phase in 1973, as did the work of the Iowa Mission.

Work of the Iowa Mission concentrated on the following areas: (1) agricultural sector analysis, (2) water law and administration, (3) farm management and training, and (4) statistics assistance.

Agricultural Sector Analysis

The possibility of integrating the proposed resource and commodity studies of PROAG 21 into a single unified policy framework had been discussed with AID/Peru in February, 1973. This concept had been endorsed by AID/Washington when they reviewed the PROP. The key word suggested by AID/Washington was that of agricultural sector analysis. Point III of PROAG 21 was consistent with this, and could, therefore, be supported by all four parties involved; i.e., the MOA, AID/Peru, AID/Washington and Iowa. The Iowa Mission under the initiatives of Hylke Van de Wetering, held a series of meetings with AID in November, 1973 to explain the several types of sector analysis that could be conducted. The decision was made to approach the MOA, and let them choose and define the type of sector analysis to be conducted. Subsequently, the appropriate joint financing agreements were prepared and approved.

The Agricultural Sector Planning Office (OSPA) under Director General Luis Paz was best qualified and most interested in performing an integral analysis of the agricultural sector. The Director of the Office of Socio-Economic Research (OISE) within OSPA, Lizardo de las Casas, felt that, given time, OSPA could incorporate sector analysis within its programmed plan of work to the benefit of the ongoing planning process. All parties concurred that sector analysis should be

primarily an effort conducted under the leadership of Peruvian professionals, with Iowa playing an essential but low-profile role.

OSPA proceeded to form a core group of Peruvian economists at the Ph.D. level, educated under the Iowa and North Carolina programs, who had the responsibility of executing the proposed studies. Trainees under the earlier participant training program of the Iowa Mission, including de las Casas, became important personnel within their core group of Peruvian economists. OSPA developed and authorized the general framework and supervised and evaluated the studies program. A special effort was made to use the flexible administrative mechanism provided by the Foundation for National Development, and to utilize qualified personnel from the Agrarian University at La Molina. Four "becarios" were returning to La Molina. They had been approached previously and had expressed interest in working together as a team on a sector study, provided they received competitive salaries.

Beginning April 1, 1974, Dr. Hylke Van de Wetering, previously Iowa Mission's Chief-of-Party, worked on a full-time basis with the Oficina de Investigaciones Socio-Economicas (OISE) of the Oficina Sectorial de Planificacion Agraria (OSPA). His activities with OSPA had two objectives. The first was to prepare a regional linear programming model that generated the optimal allocation of public investment in agriculture as between 11 crops and 9 regions. The model was an extension of the methodology and data used by Salaverry in his Iowa dissertation in 1969. It served as a stepping stone towards the second objective, which was to assist OISE in the design and execution of a policy model that would allow for the systematic study of alternative policies in continuous support of the 1975-1978 Agricultural Development Plan. This was to be achieved in three consecutive steps including (1) qualitative consistency of objectives and policies, (2) quantitative consistency of objectives and policies, and (3) a numerical policy model that allowed for the systematic study of alternative policies in continuous support of the 1975-1978 Agricultural Development Plan. Steps 1 and 2 were significant improvements in plan formulation and served as approximate tools for coordinating policies and programs within the public sector.

Furthermore, in a two-level planning system, OSPA, more than any other agency, had to have a comprehensive view of all aspects related to the behavior of the public and nonpublic sector as related to the production, marketing, and consumption of agricultural commodities, services, and inputs. The separate MOA directorates were primarily engaged in solving partial problems. Nevertheless, the satisfactory solution of a partial problem required a number of critical assumptions with respect to policies and conditions beyond the control of individual MOA agencies. If these assumptions were correct, then the solution of a partial problem might worsen the solution of the general problem and become detrimental to reaching overall strategies.

The above situation, from a technical point of view, had become acute because of the administrative decentralization in formulating the plan. OSPA received the initial proposals from the MOA agencies, and after the necessary modifications, approved them. Ideally, however, OSPA should have provided each of the MOA agencies with an initial set of guidelines and resource constraints within which each MOA agency could proceed with its efforts.

In order that OSPA might have the initiative in plan formulation, it had to make a prior assessment of the feasibility and desirability of different sets of policies. Moreover, such policies had to be related to the fundamental objectives of public sector action such as income generation and redistribution as between rural and urban areas and as between income groups and social classes, and other related socio-economic indicators such as nutrition and employment. No single MOA agency, other than OSPA, was directly concerned about these fundamental objectives.

A comprehensive numerical policy model was developed by Lizardo de las Casas and Hylke Van de Wetering. The model consisted of four sectors as follows: the agricultural and non-agricultural sectors, each subdivided into the public and nonpublic sectors. The model is illustrated in Figure 2.

Section I is a schematic presentation of nonpublic agricultural sector containing five principal components: (1) supply of and demand for owned resources ("recursos propios") and purchased resources, (2) the

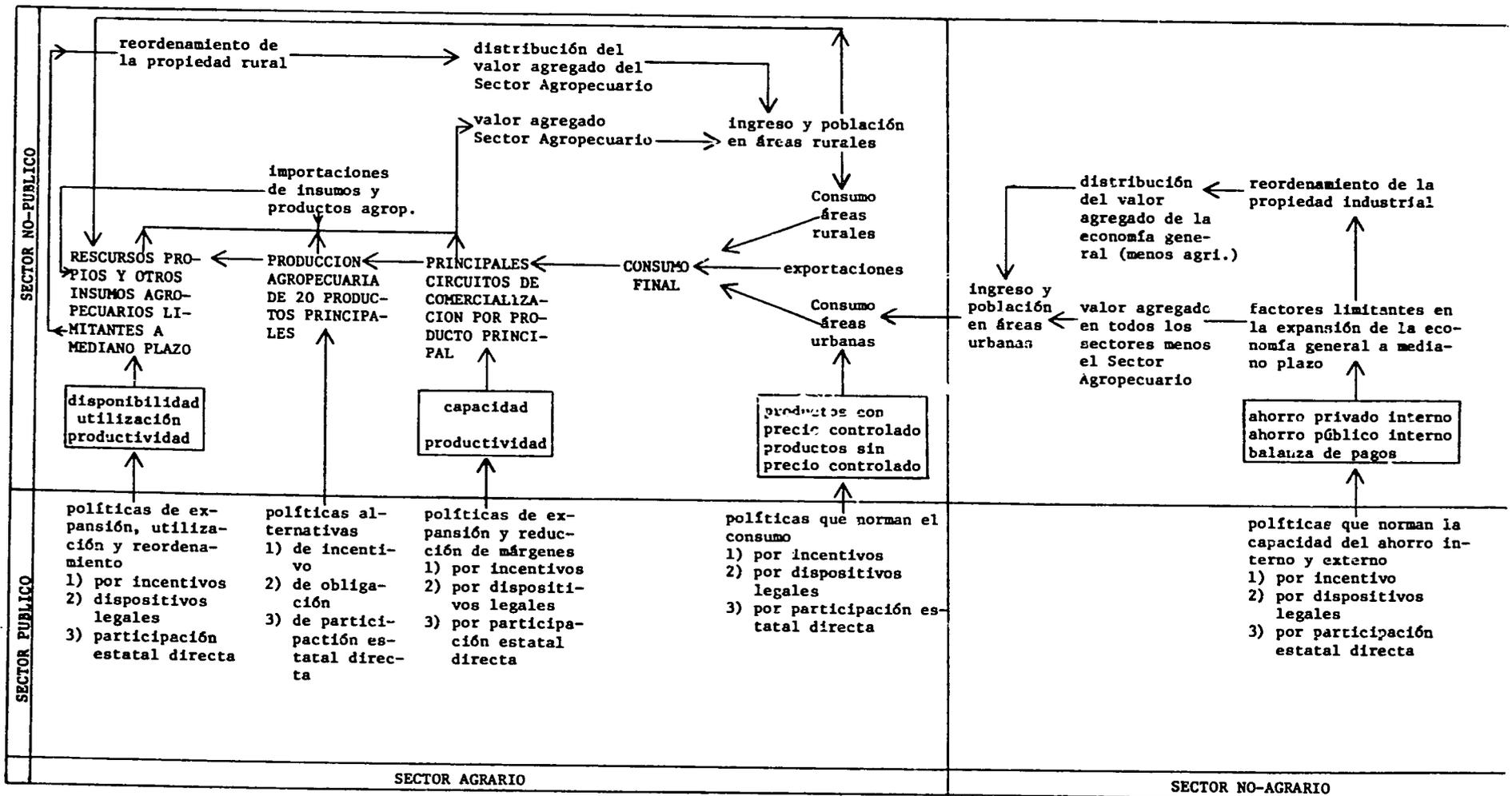


Figure 2. Principales de Una Estructura Que Permita Analizar las Políticas En Apoyo del Plan Agropecuario 1975-1978.

supply of agricultural commodities, (3) final demand for agricultural commodities, (4) the distribution system of agricultural commodities as between production and consumption, (5) distribution system of agricultural inputs (not sketched in Figure 2). The interaction of the production, distribution, and consumption generated agricultural incomes. This and the redistribution of rural property under agrarian reforms determined the level and distribution of incomes in rural areas. These, with prevailing prices for agricultural commodities, determined consumption of such commodities in rural areas.

There were two important feedback effects in this scheme. First, the supply of agricultural commodities determined rural incomes, but rural incomes partially determined the demand for agricultural commodities. Second, rural population determined the availability of agricultural labor, but the availability of agricultural determined agricultural production, rural income, and to some extent rural population.

The scheme, apart from Sections III and IV, allowed for three additional important exogenous connections: (1) with respect to the rest of the world it allowed for imports and exports of agricultural commodities and inputs and (2) with respect to the rest of the national economy it allowed for two effects: (a) the demand for food and fiber in urban areas and (b) the supply of industrial inputs used by the agricultural sector (not sketched in Figure 2).

Section IV dealt with the determination of the levels of income and the distribution of income in urban areas. Urban areas were taken as synonymous with the nonagricultural sector.

The fundamental limiting growth factors were related to the level and distribution of savings for investment purposes as contributed by the private and public sector and as between Peru and the rest of the world. The industrial community law and the social property law were seen as the principal instruments that aimed at a redistribution of industrial property.

The policy model essentially tried to estimate the impact of Section III (agricultural policy), Section IV (general economic

policies), and Section II (non-agricultural income formation) on Section I (agricultural production, distribution and consumption). Sections II, III, and IV were peripheric; Section I was the core of the scheme. Section I generated a number of index variables such as income generation, income redistribution, employment, improvement in nutritionally critical problems, etc. The general use of the policy model can be stated as follows: (1) given a series of hierarchically ordered objectives, (2) given a knowledge of general economic policies (Section IV) and its impact on income and population in urban areas (Section II), (3) given a behavioral model of the agricultural production, marketing and consumption system (Section I), (4) then find a set or sets of agricultural policies (Section III) that satisfy the hierarchically ordered objectives under 1.

Twenty-four publications and papers resulting from the agricultural planning work are listed below. Unless otherwise indicated, Hylke Van de Wetering authored these reports. Most of these materials appear in Appendix B.¹

1. "Agricultural planning: The Peruvian experience, in the role of agriculture in economic development." Erik Thorbecke (ed.) Universities-National Bureau Conference Series, Vol. 21, National Bureau of Economic Research, 1969.

2. (with Jose Salaverry Llosa) "An interregional linear programming model for the analysis of agricultural development policies in Peru," Iowa Universities Mission Studies, No. 18, May 1970.

3. "Agricultural planning: the Peruvian experience," reprinted in Essays on Peruvian agriculture, Richard Webb and Shane Hunt (eds.) Instituto de Estudios Peruanos, Lima, 1976.

4. "A first measurement of the rate of unemployment of the Peruvian agricultural labor force." Paper presented at the Conference on Problems of Agricultural Development

¹Much of the research background for these publications was generated under the Government of Peru budget funding directly to the Iowa Mission for the "research fellowships" mentioned above.

in Latin America, Caracas, Venezuela, May 17-19, 1971.

5. "Agrarian reform: an approach to measure its impact on the provincial economy." Paper presented at the Fourteenth International Conference of Agricultural Economists held in Minsk, Belyorussia, August August 24-September 8, 1971.

6. "Practices, issues and problems in agricultural planning in the Andean Zone countries." Paper presented for the first international conference of directors of agricultural planning, Interamerican Institute of Agricultural Sciences, Lima, February 1971.

7. "A first estimate of the underemployment of the population economically active in agriculture in rural areas, by months, provinces and regions, in 1967." Study presented at the Conference on employment, unemployment, and underemployment in Peru, Centro de Estudios de Poblacion y Desarrollo, April 14-17, 1971.

8. "The potential impact of land redistribution on agricultural and nonagricultural production in rural areas," Department of Economics, Iowa State University, October, 1973. "The demand-induced impact of land redistribution," Land Tenure Center Paper No. 91, Madison, Wisconsin, July 1973.

10. "Peru, Long-term projection of demand for and supply of selected agricultural commodities through 1980," Agricultural University at La Molina, and the United States Department of Agriculture, March 1968.

11. "Planning in stages: a suggested approach towards multi-level planning at the national, regional and sector level," Conference on Regional Agricultural Planning, Interamerican Institute of Agricultural Sciences, Bogota, Columbia, June 1972.

12. "Problems related to the development of the livestock industry in Peru," Tropic Beef Production Consortium Meeting, Purdue University, Lafayette, Indiana, September 1972.

13. "La Reforma Agraria y el Empleo Agrícola," Oficina Sectorial de Planificación Agrícola, Ministerio de Agricultura, Lima, Octubre 1974 (title in English: Agrarian Reform and Agricultural Employment).

14. "La Cooperativa de Producción Agrícola y el Empleo de Obreros Eventuales," Oficina Sectorial de Planificación Agrícola, Ministerio de Agricultura, Lima, Noviembre 1974 (title in English: The Agricultural Production Cooperative and the Employment of Non-member Workers).

15. "Criterios de interés social y el Plan Nacional de Cultivos," Oficina Sectorial de Planificación Agrícola, Ministerio de Agricultura, Lima, Diciembre 1974 (title in English: Criteria of Social Interest and the National Crop Plan).

16. "Pensamientos Doctrinarios sobre 'costo', 'precio' y 'valor' y su uso en la determinación de políticas de precios en una economía mixta," Oficina Sectorial de Planificación Agrícola, Ministerio de Agricultura, Lima, Marzo, 1975 (title in English: Doctrinal Thoughts on 'Cost', 'Price' and 'Value' and Their Use in Determining Price Policies in the Mixed Economy).

17. "Criterios para la determinación de una política de precios para los fertilizantes," Oficina Sectorial de Planificación Agrícola, Ministerio de Agricultura, Lima, Abril 1975 (title in English: Criteria in Determining a Price Policy for Agricultural Fertilizers).

18. "La nueva política de precios y la producción agrícola," Oficina Sectorial de Planificación Agrícola, Ministerio de Agricultura, Lima, Mayo 1975 (title in English: The New Price Policy and Agricultural Production).

19. "La relación recíproca entre una política de precios y la reglamentación de los áreas de sembrío de los cultivos," Oficina Sectorial de Planificación Agrícola, Ministerio de Agricultura, Lima, Junio 1975 (title in English: The Reciprocal Relation Between a Price Policy and the Regulation of Acres Sown of Different Crops).

20. "The two product-two factor model and its relation to some important issues in agricultural sector programming," Oficina Sectorial de Planificación Agrícola, Ministerio de Agricultura, Lima, Julio 1975.

21. (with Hugo Maradique Obando) "A Comparative Social Benefit-Cost Analysis of the Twelve Principal Projects of Peru's Public Investment Program 1968-1975,"

Department of Economics, Iowa State University, 1977.

22. (with Lizardo de las Casas) "A Theoretical and Applied Approach Towards the Formulation of Alternative Agricultural Sector Policies in Support of the Peruvian Agricultural Planning Process," Department of Economics, Iowa State University, 1977.

23. (with John F. Timmons and Julio Echevarria) "An Interregional Linear Programming Model of the Peruvian Agricultural Sector and the Impact of Selected Components of a Comprehensive Agricultural Sector Development Strategy by 1980," Department of Economics, Iowa State University, 1978.

24. (with Eduardo Cobas) "A Social Benefit-Cost Analysis of Peru's Four Major Irrigation Projects," Department of Economics, Iowa State University, 1978.

Water Law and Administration

Decree Law 17752 of 1969, nationalized all water rights. In its language and intent it was further reaching than the agrarian reform law. It was also more difficult to execute. The agrarian reform law revolved fundamentally around the expropriation and allotment of privately-held landed property. Both expropriation and allotment had to be undertaken only once. It was a time-consuming process and absorbed the bulk of the MOA's budget and manpower between 1968 and 1973. By comparison, the nationalization of water rights was accomplished at the stroke of a pen. But the administration of this renewable, now publicly owned, water resource had to be a continuous activity. Its general objective—i.e., the rational use of this resource in harmony with the development of the country—gave little concrete guidance as to how to allocate water between users and uses. The regulations of Decree Law 17752 essentially built on existing practices in water administration. The principal instruments were tariffs, quotas and authorizations. No drastic changes were foreseen in either of these. The regulations, therefore, did not spell out as to how the "rational use of water, etc." was to be reflected in the administration of this resource. In practice, therefore, allotments under the pre-

viously existing water rights continued to exist. The Directorate-General of Waters was reluctant to make any changes without the necessary studies. This was the primary motivation of the DGA's request for a special study on the establishment of tariffs and quotas.

The study was conducted under the leadership of Ing Santos Galarza, (Director of the Tariffs and Quotas Division of the D.G.A.), and Professor James Seagraves of the Iowa Mission on loan from the North Carolina State University.

Galarza and Seagraves asserted that irrigation water assumed distinct aspects as it was (1) dealt with by water laws, (2) subjected to prescriptions of economists, and (3) actually managed and divided among farmers. For example, Peru's new Water Law declared that all the water belonged to the state, that the state was responsible for assigning it rationally to users, and that user fees should be levied on measured volumes of water delivered so as to recover all the costs of water to the government. Economists were mainly interested in using prices to achieve efficient use. They recommended special pricing schemes such as seasonal prices, and almost always recommended use of measured volumes. In actual practice, irrigation water was highly subsidized, the collection of the money had little relationship to the amount of water used, and it was often uneconomic to measure volumes.

Galarza and Seagraves felt it possible that neither water laws nor the commendations of economists had been based on sufficient analyses of water. First, flows tended to be highly variable unless there were regulatory reservoirs. Uncertain flows led to the use of proportions to ration water when it was scarce rather than promises to deliver in volumes. Variable flows also helped explain a tendency to err on the low side in assigning prices so as not to discourage use when flows happened to be abundant. Second, most irrigation projects involved large fixed investments with long lives, were associated with the opening up of new land, and tended to be influenced by a variety of political, as opposed to economic, considerations. Subsidies could be explained partly in terms of the multiple objectives of political

decision (in the U.S. as well as Peru). Third, the value of irrigation water was often low compared with the cost of measuring it.

Galarza and Seagrave's tentative conclusions with respect to Peru were that it would be worthwhile to begin a modest program of recovering the capital costs of irrigation projects, that the formula specified by current regulations—forgetting interest but including inflation—would be a good start, that volumetric measure should be stressed only where water had a high value and flows were regulated, and that proportional allocations be accepted as a local *modus operandi* where flows were uncertain.

Seasonal fees appeared to be warranted in Canete and many other valleys of the coast of Peru. Neither estimates of the value of water nor linear programming studies were needed to fix these charges. The only requirements were estimates of the costs to be recovered each year and the total volume of water that would be delivered in the high-valued season. Where flows were uncertain, it would continue to be logical to use proportions and minutes to ration the water among farmers and as a basis for estimating volumes. In valleys in which the value of water was extremely high and the cost to be recovered very low, dual fees may be more logical. Seasonal fees could provide an easy transition to dual fees in the future.

Linear programming provided a way of estimating the value of land and water by months as well as a framework for simultaneously considering a large number of alternatives using just one set of product prices, technology, and interest rates. Similar programming models of a single valley could be applied to adjacent valleys to compare a large number of projects and also to estimate the net benefits of connecting the valley. Galarza and Seagrave's felt this valley-by-valley approach to water resource planning was indicated in the case of Peru.

Farm Management Assistance

Staffing of the farm management positions presented special problems. The original request was to locate two advisors with the Direction General de Promocion Agropecuaria. At the request of the Minister of Agriculture these advisors were to be located with the Centro Nacional de Capacitacion e Investigacion de La Reforma Agraria (CENCIRA). This agency played an important role in providing management assistance to the newly-created production cooperatives, a crucial component of the Peruvian Government's revolutionary program. It was also an agency with a pronounced ideological and somewhat anti-American orientation. The director of the agency had therefore expressed a preference for advisors of a Latin American nationality. But the recruitment of third country nationals, compensated on an international salary scale, presented problems under AID's rules and regulations. The compromise was to staff the two positions with Randall Hoffmann of ISU and Tomas Mulleady from the University of Castellar in Argentina, who was an ISU Ph.D. graduate in economics.

Accomplishments under this activity are reported under Contract AID/1a-1069, since most of the work was performed during the period of that Contract.

Statistical Assistance

Insufficient time remained for the staffing of the long-term statistician under Contract AID/1a-592, but commitments were made for this staffing under the new contract AID/1a-1069 which became effective July 1, 1974. However, a short-term statistician, Roy D. Hickman, devoted two months in working with Peruvian officials of the Director General for Information and Statistics (DGIEMA) on foundation work to be continued by Barry Arnold under the new contract.

PART SIX: SECTOR ANALYSIS AND PLANNING:

CONTRACT AID/1a-c-1069

(JULY 1, 1974-JUNE 30, 1977,

EXTENDED TO OCTOBER 1, 1980)

Purposes of Work

According to the Contract, objectives of requested technical assistance were: "To assist the Ministry of Agriculture (MOA) in analyzing key problems in the agricultural sector and improving its medium and long range planning system. Emphasis will be placed on improving methodology, conducting a series of studies on agricultural problems, and assisting Peru (GOP) in implementing programs resulting from the analysis and studies."

The Iowa contract was amended in September, 1976, with the additional objective of assisting the Ministry of Agriculture and the Ministry of Food (which had become a separate ministry) in the analysis of key agricultural problems affecting the (1) productivity and welfare of small rural producers and (2) supply of food at reasonable prices to consumers. Design of action programs was to alleviate these problem areas. These objectives were to be achieved through extension of the institutional capacity for problem analysis and program design in the rural sector through training programs for Ministries personnel and the expansion of pilot projects.

Procedures and Working Environment

Procedures in achieving the purposes of work included training personnel and giving assistance in methodology and analysis of particular problems which would improve the functioning of specific development programs. Also, formal linkages were to be developed between programs and alternative planning methodologies which would be tested, and in

the longer run, would lead to the establishment of a multi-level planning model.

Work would include but not necessarily be limited to the following areas: (1) sector analysis and planning, (2) water resources, (3) farm management, (4) price policy, (5) statistics, and (6) forest management. Major means of achieving these objectives were through research, training and advisory activities.

The turbulent late 1960s and early 1970s, bringing the military coup, revolutionary social and economic changes, and strained Peru and U.S. relationships generating ill feelings and suspicions by Peruvians toward U.S. citizens, were accompanied by severe and almost disastrous fallout on the Iowa-Peru Program and the Iowa-Peru staff. By 1974, however, as was mentioned in Part Five of this Report, the relations between the two countries were on the mend. Thus, the working relationships under the new Contract AID/1a-c-1069, were considerably improved compared with the almost hostile environment during the period of the previous Contract AID/1a-592.

While working conditions were improved, they were altered. Peru had changed and many foreign groups working in Peru had to adjust to these changes. In the process, Peru had undergone a Renaissance, drastically altering its institutions, its national integrity and its relationships with other nations.

At the same time, certain excesses of the revolutionary period were accompanied by serious economic problems including inflation, reduction in public funds, flight capital, flight personnel, and serious difficulties in borrowing funds from abroad.

Such was the situation as the Iowa-Peru Program, which had barely survived the revolution, received a new lease on its commitment to assist Peru in carrying out Peruvian

economic and social objectives through technical assistance from a friendly and sympathetic Iowa Mission.

Sector Analysis and Planning

Hylke Van de Wetering continued to work with Lizardo de las Casas and Luis Paz and their colleagues in the Office of Sectoral Planning of the Ministry of Agriculture (OSPA) in generating an improved data base for planning purposes and in developing an improved methodological framework for integrating special studies into a comprehensive sector analysis.

The sector model begun under Contract AID/1a-592, as reported in Part Five of this report, was completed and additional studies were undertaken to provide and process data for the model.

Before leaving Peru, Van de Wetering assisted OSPA with the completion of the "Anteproyecto" of the 1975-1978 Agricultural Development Plan and in the development of studies on demand of crop and livestock products, on agricultural employment and agricultural production. These studies were part of the larger agricultural policy model to study alternative approaches within the context of the 1975-1978 Agricultural Development Plan.

Two other studies were undertaken to achieve a framework which would allow comparisons of alternative agricultural policies in support of the Agricultural Development Plan. This work was continued in Ames by Lizardo de las Casas, who had returned to the I.S.U. campus to complete his dissertation for the Ph.D. degree and by Hylke Van de Wetering, who had returned to the campus to continue his resident teaching and research duties, which included working with de las Casas.

These studies were on (1) the supply of food and fiber, given alternative supply promoting policies, and (2) the integration of the consumption, employment, and supply data into one comparative policy programming model. Both these studies were completed by de las Casas and Van de Wetering by September, 1977. The on-campus component of these studies was supported by I.S.U. through 211-D

funds provided by AID in combination with Iowa-Peru project funds.

A detailed description of the scope and method of the above planning and policy mechanism is contained in de las Casas' doctoral dissertation. The approach is based upon the following key features of the agricultural planning process in Peru:

1. The public sector does not directly control the allocation of privately owned resources at the farm level.

2. Due to far-reaching agrarian reform programs, virtually all farm units are either small family farms or large production cooperatives.

3. The public sector owns, produces, or controls the availability of several scarce resources or services necessary for agricultural development. These include, for example, natural and chemical fertilizers, improved seeds, agricultural credit, major storage and processing facilities, extension, training and research services.

4. Within the public agricultural sector, the several governmental agencies retain a large degree of autonomy. The Agricultural Sector Planning Office, by law, must coordinate the short-term and long-term policies and resource allocations of the separate agencies.

5. Planning decisions normally relate to a medium- or a long-term perspective, resulting in the periodic preparation of comprehensive Agricultural Development Plans.

6. Due to the exigencies of unforeseen development, the Development Plan is continuously revised. Because of this, planning is a continuous and not a periodic activity.

7. The Office of Agricultural Policy Analysis of the Agricultural Sector Planning Office has the responsibility of estimating the impact of the several agricultural policies, singly and jointly, on the performance of the private agricultural sector and related variables of social concern.

8. In case such outcomes clearly violate predetermined high priority social objectives, the Office of Agricultural Policy Analysis must propose alternative policies.

The modeling of the interaction between the private and public agricultural sector was based upon the principle of a general equilibrium interaction among autonomous

decision makers. The major categories of decision-makers in the private sector are the consumers, the producers, and the firms (and households) engaged in the distribution of agricultural inputs (including labor). The major categories of decision-makers in the public sector were the several agencies that compose the Ministry of Agriculture, the Ministry of Food, and other separate governmental agencies whose policies have a direct bearing on agricultural production, marketing, and consumption.

For each of the autonomous decision units an appropriate behavioral theory was formulated. Particular attention was paid to obtain an appropriate theoretical framework for the economic behavior of the agricultural production cooperatives, the small family farm, and the consumer.

The economic behavior of the major categories of decision-makers was analyzed with respect to a situation-specific data framework. This principle of disaggregation was carried out along space, time, commodity and resource dimensions. It permitted the quantification of the reaction functions of individuals or groups of decision units with respect to changes in the above data, specifically as they related to public sector policies such as price policies and the distribution of those scarce resources, as identified earlier and controlled by the public sector.

The subsequent consolidation of micro, situation-specific, reaction functions along time, space, commodity or resource dimensions resulted in a corresponding macro-reaction function; e.g., a market demand or market supply curve for a commodity or resource.

The above approach permits a systematic study of the impact of given public sector policies on a large number of performance variables of the agricultural sector. The public sector institutes such policies in order to achieve certain goals. Diverse optimization techniques can be used in determining public sector policies as a function of social objectives. Further numerical manipulation of this framework shows how a variation in a single policy or set of policies would affect the attainment of these social objectives. It would, therefore, give a comprehensive and relatively quick evalua-

tion of the immediate and total impact of proposed alternative agricultural (and non-agricultural) public sector policies.

To the extent that short-term development forces a revision of past policies, the above framework suggests sets of policies that imply a minimal sacrifice of long-term societal goals with respect to consumer and farmer welfare. It, therefore, provides for the needed connection between short-term and long-term planning.

Implementation of the above project started in June, 1975. Apart from the methodological contributions, it required:

1. a review, delineation and disaggregation of agroclimatic areas within each of the jurisdictional units of the Ministry of Agriculture.

2. further delineation of such areas by land use, soils, water availability and general infrastructure on basis of a cross-tabulational analysis of a variety of statistical sources and studies.

3. the current and projected available human resources for agricultural employment; the current degree of underemployment of this labor force, by areas, by months and by type of farm units.

4. identification and quantification of the marginal cost at which, and the extent to which, additional land can be incorporated for the purposes of cropping and grazing.

5. identification and quantification of existing cropping and livestock production practices by agroclimatic areas.

6. quantification of enterprise budgets by crops and livestock production by agroclimatic areas.

7. economic evaluation of public sector promotional best-cropping practices packages, taking into account the opportunity cost of privately owned resources and the capability of installed infrastructure to deliver the suggested inputs in quantity and on time.

8. the derivation of optimal reaction functions of family farms and production cooperatives given a variation in privately owned resources, publicly provided resources (including advanced technologies) and prices.

9. the derivation of income elasticities of demand for all major and locally

important agricultural crop and livestock products, by climatic zones, rural-urban areas, and income strata.

10. the derivation of base year production and disposition balances for all major and locally important crop and livestock products.

11. a preliminary estimate of the inter-provincial trade in agricultural products, and an evaluation of the entry potential of currently marginal trading centers in given agricultural products.

12. an evaluation of current marketing and transport facilities; the estimation of transportation costs in terms of distance and road conditions; the estimation of the other components of marketing margins in agricultural products; the evaluation of the impact of the proposed integral rural storage and marketing program.

13. the formulation of an initial trial linear programming model on a regional and inter-regional basis, detailed by commodities and spatially separate demand, traditional and advanced cropping practices, selected irrigation projects, selected integral research-extension programs by major agricultural commodities and policy alternatives as to agricultural production for export purposes or for the purpose of import substitution.

14. construction of a comprehensive data collection, retrieval and up-dating system relative to the above.

Parallel to the above studies, Julio Echeverria, Professor of Economics at the Agrarian University, followed Jose Salaverry's interregional programming approach, and in the process, substantially expanded the number of regions to 52. Echeverria completed his Ph.D. thesis in August, 1978 and thereafter returned to Peru to continue his work in the Agrarian University and the University of Agriculture.

Water Resources

James Seagraves continued to assist personnel in the Water Resources Division (DGA) developing a rational system of water tariffs and quotas to improve the efficiency of water distribution, as well as a methodology for evaluation costs and benefits for

irrigation investment projects. Also, this work contributed to providing elements essential for sector analysis including crop production activities using water as an explicit variable.

A method for studying alternative pricing schemes was defined and AID funding was obtained for one-half of the costs of the study. The study is described in the February, 1975, report entitled, "Description General del Estudio Especial de Tarifas de Agua" and is summarized briefly.

The study consisted of: (1) estimating the average cost of irrigation water and defining the costs to be recovered by the Government, (2) estimating seasonal values of water through use of the marginal cost of additional water, linear programming and other techniques, (3) analyzing the history of water distribution in selected valleys, (4) illustrating alternative systems of water fees some of which rely on marginal costs or estimated values of water, (5) analytically applying the systems in several valleys of western Peru, and (6) evaluating the systems under conditions projected 10 and 20 years in the future.

Steps 1, 2 and 4 were defined precisely and illustrated for the Canete Valley (Iowa Mission Economic Study No. 6). In Tacna, the history of water distribution was studied and alternatives with respect to agricultural and nonagricultural allocations were outlined. Marginal costs of additional water were estimated for Chancay-Lambayeque and Tacna as well as Canete.

Estimation of seasonal values in Canete was based on a linear programming model that provided results for both the present and potential future investment. These results were published in Report No. 10 of the study and presented in two seminars, one at the Ministerio de Economia y Finanzas July 24 and another at the Direccion de Aguas July 25, 1975. Peruvian counterparts preferred this type of study because it was constructive and noncontroversial. Linear programming studies of new investments and the value of water by valleys were not essential to the design and implementation of new water pricing schemes. Basically, they served to help define economic concepts—the marginal cost and the seasonal values of water. Understanding of these concepts was useful in developing

pricing systems for the future that would not only recover more money from the water users but improve water allocation, which were major objectives in Peru's water laws.

Consideration was given to the proportion of capital costs to be recovered. The rationale for using replacement costs and real rates of interest was developed and illustrated. Section III D of Iowa Mission Economic Study No. 6 presented observations on this topic. The costs of investments of the central Government were currently not being recovered from the water users. Peru could begin recovery of capital costs as defined by current regulations, including amortization of the Government's capital cost over the useful life of the investments at zero percent but including a factor for inflation in the annual amounts. This would amount to recovery of about 50 percent of the capital costs from the users.

Alternative systems of water charges are illustrated in Section III F of Economic Study No. 6 and prepared in Spanish as Report No. 11 of the Estudio Especial de Tarifas de Agua.

Two bachelor's-degree candidates participated in these studies and prepared theses based upon their work; including Nancy Liendo, with her study of water supply and distribution alternatives for Tacna, and Carlos Ireimon, with his study of indices of water and land values.

Several conclusions emerged from these studies. Peru's Water Law specifies that the full costs of developing water supplies should be recovered from the users and that water charges should be based on measured volumes of water delivered. One of the needs in this study was to explain why these laudable economic policies were not implemented. Agricultural subsidies are common in many countries and subsidizing the development of land and water is one means to stimulate production. Peru is seeking ways to increase agricultural production quickly and especially to increase the intensity of land use. It is not surprising that irrigation water is subsidized, especially in the case of the large politically-motivated projects which reflect similar motivations in the U.S.

Volumetric measurements of water tend to be ignored when the water is distributed proportionally (in shares) and proportional

distribution is logical whenever flows are variable. There are several valleys in which flows are regulated by reservoirs and it is possible to promise delivery of a certain amount of water. However, in the majority of the valleys flows are uncertain, proportions (turnos) are used to distribute the water from about June to January, additional water has very low values in the period February to May and estimated water volumes are based on the area seeded to various crops. Current policies in these valleys appear to be a logical compromise, and suggest that volumetric measurements at each farm are not necessary.

Tentative conclusions for Peru are that subsidies of irrigation water should be defined and reduced from their present levels. It is recommended that full costs of operation and maintenance continue to be covered in the fees charged and the Government begin to recover roughly one half of its capital expenditures.

It is further recommended that in certain valleys seasonal pricing schemes be tried, stressing estimates of the volume of water only during periods of high value. Estimates could be based on proportions and recorded volumes at the head of each major canal rather than on individual measurements of water volumes at each farm.

A system of dual fees could stress water's occasional high value even while it is subsidized. A low basic fee would apply to a basic allotment and a seasonally sensitive marginal fee equal to the value of water would be charged for any water requested beyond the basic allotment. Dual fees could also help (1) restrict excessive use of surface water, (2) restrict excessive use of wells in some valleys, (3) stimulate use of wells in other valleys, (4) ration water to its highest uses in times of extreme shortages, and (5) ease the strain of a redistribution of water. It was recommended that dual fees be tried in some valleys in which irrigation water has had extremely high values in the past. Either volumes or proportions could be used depending on the degree of control of the total volume that is possible.

It is clear that most of the irrigation projects are highly profitable. However, Peru should be careful in assigning project

priorities. It remains difficult to use existing benefit/cost ratios in decision making because studies are not prepared in a consistent way. An effort should be made to standardize prices, shadow prices and interest rates and a new set of acceptable or "normal" prices should be drawn up annually.

There remains the need to develop a framework for comparing actual and potential water and land resources of the coastal valleys, particularly the valleys for which projects are proposed. One could estimate the following data with and without each project: hectares served, water per hectare, and net income per hectare; and then use the annual cost of the project and the value of the additional water on the old hectares to calculate the net cost per new hectare. It might be easier for decision-makers to compare net income and net costs per new hectare than to compare the benefit/cost ratios of projects. The basic idea behind these simple geographic-economic summaries would be to prevent gross exaggerations of the agricultural benefits.

It is also hoped that the linear programming models developed in these studies for selected valleys will find their real payoff in future project appraisals. These studies facilitate with and without comparisons, separate consideration of components, and estimation of optimum sets of investments at different interest rates.

Major publications summarizing results of these studies include: (1) "Description General del Estudio Especial de Tarifas de Agua" Sub-Dirección de Tarifas y Cuotas, Dirección General de Aguas, Lima, Peru, February, 1975; (2) Economic Study No. 6 of the Iowa Mission, "Values, Costs and Prices of Irrigation Water, Canete Peru" Iowa Universities Mission to Peru, USAID, U.S. Embassy, Lima, July, 1975 (also published as Informe No. 9 del Estudio Especial de Tarifas de Agua); and (3) Informe No. 10 del Estudio Especial de Tarifas de Agua, "Valores y Costos de Agua de Riego en Canete: Una Aplicación de la Programación Lineal" (Documentos de Trabajo) Ministerio de Agricultura, Dirección General de Aguas, Dirección Distritos de Riego, Sub-Dirección Tarifas y Cuotas, División de Análisis Económicos, July 1975. These studies are included in Appendix B.

The report, "Values, Costs and Prices of Irrigation Water, Canete, Peru," Economic

Study No. 6 of the Iowa Universities Mission to Peru USAID, U.S. Embassy, Lima, July 1975, was translated into Spanish and published as "Valores y Costos de Agua de Riego en Canete: Una Aplicación de la Programación Lineal," Informe No. 10 de Estudio Especial de Tarifas de Agua, Dirección General de Aguas, July 1975.

In addition, a selected number of teaching materials was published and translated for the course in Resource Economics for students working on these studies as described in the following statement on training.

In order to interest personnel of the Water Resources Agency to help form a group of research workers and to recruit students for the La Molina graduate program, a course was organized in resource economics for about 20 students. Roberto Castro, Abraham Febres and James Seagraves were the instructors. The course lasted six weeks with six hours of classes per week. It included numerous exercises, exams and handouts for the students. It was a worthwhile course.

Most of the training activities were on a one-to-one basis with personnel from the office, especially with Ing. Santos Galarza and Renan Ochoa.

Considerable time was devoted by Seagraves in consultation with the Irrigation Projects Agency (especially Ruben Parra and Roger Sanchez) on methods they could use in the evaluation of projects and the comparison of incomes from valley to valley. A number of valleys on the coast of Peru for purposes of discussing alternative water rationing schemes with the directors of the irrigation districts. Seagraves participated with a group of scholars from Chile, Columbia, Peru and Resources for the Future in preparing a book on irrigation. This involved meetings in Santiago and Cartagena. Results of the linear programming analysis of Canete were presented at two seminars, one at the Ministry of Finance, and another at the Water Resources Agency.

Farm Management

Tomas Mulleady and Randall Hoffmann continued to advise and assist the Center for Training and Research on Agrarian Reform (CENCIRA) on studies required to develop model production plans for associative

enterprises organized under the Agrarian Reform Program. They also helped plan and conduct training courses by CENCIRA and assisted executing special studies required for farm planning, sector analysis and the training of CENCIRA staff.

The work included development of farm planning models, analysis of results from the models, and linking farm level results to higher level planning and policy evaluation systems through simplified aggregation procedures. Once the farm data were assembled, contacts were established with the Ministry of Economy and Finance Computational Center where linear programming software were adapted and modified for processing farm data. Results of the farm planning analysis were discussed with appropriate professionals of the Ministry of Food, Ministry of Agriculture, Ministry of Economy and Finance, and Agronomy Faculty at La Molina. Procedures and analysis of results were later presented at seminars and as part of organized training programs.

The simplified linear programming procedures which were developed permitted more rapid calculation of agricultural production plans with fewer errors and more complete analysis of farm plans. The computerized planning system also permitted the rapid calculation of alternative farm plans for comparative analysis under various farm prices and resource constraints. Sensitivity analysis of product prices and resource costs provided a further insight into the range over which prices or costs could be shifted without affecting the basic production plans.

Coordination between CENCIRA Training and Research divisions did not exist prior to assistance rendered by Hoffmann and Mulleady.

CENCIRA consisted of the national headquarters and regional offices. Regional offices were in charge of organizing training activities at the regional level and CENCIRA personnel from Lima traveled to the region to teach short courses for the required personnel.

Courses also were organized in CENCIRA headquarters for Ministry of Agriculture (MOA), Banco de Fomento, and other government professionals dealing with production cooperatives. Iowa personnel assisted in

training activities and curriculum development and preparing training materials.

Thirteen courses on farm management and farm planning with an average attendance of 25 professionals per course were taught by Dr. Mulleady. Most of these professionals were providing technical assistance in farm management and farm planning to the production cooperatives. Cooperatives were supposed to submit production plans to the Ministry of Agricultural Zonal Office before applying for production and investment credit in the BFA.

Also presented were two one-month courses in linear programming applied to farm and regional planning for professionals working in the planning divisions of the Ministries of Agriculture, Food, CENCIRA and Direccion General de Apoyo A las Empresas Campesinas.

Preparation of training materials and curriculum development were important activities at CENCIRA. Originally, farm management courses consisted of mainly training MOA professionals (Agronomists) to complete a series of tables that resulted in the cooperative annual production plan and the financial requirements to carry the plan. These courses did not include any analysis of different production alternatives nor basic economic principles to decide among alternatives.

A new curriculum was developed trying to integrate into a unit the basic courses of accounting, farm management principles, farm planning and financial management. Preparation of training materials was emphasized. This basic curriculum was improved after successive experiences and during 1976, the farm management course was CENCIRA's main training activity. This in part was due to the need to increase the number of MOA technicians trained in farm management to provide technical support to the production cooperatives that were beginning to show financial problems. Ultimately, each course of the farm management curriculum had its course outline and teaching materials. The weakest point in the whole training process was the lack of basic information about the many problems that were affecting the production cooperatives. These farm management courses helped very much in terms of changing the attitude of CENCIRA toward research at the

cooperative level. MOA professionals were bringing to class in the form of questions some of the problems that they were facing when dealing with cooperatives. The need for research became evident and Iowa personnel collaborated with the CENCIRA research division in developing a research program at the cooperative level. The research project was financed by AID.

Consultation activities were taking place almost continuously with CENCIRA professionals and the Director of Training. Main consultation activities were: (1) To help CENCIRA Research Division to develop a research framework analysis at the cooperative level. This consisted in developing the questionnaire with the information to be collected and the basic analysis. (2) To assist the FAO communications team at CENCIRA to develop audiovisual material to train cooperative members in the basic principles of cooperativism, cooperative organization and basic principles of accounting. (3) To help AID/Peru in the preparation of the economic analysis of two Project Identification Documents for Development of Cooperative Centrals and Increase of Soybean and Corn Production in Peru.

A report was prepared for the Director-General of CENCIRA containing an analysis of resource use, production and financial constraints, organization problems, production potential alternatives and a technical assistance program for the eleven cooperatives of Alto Piura. Due to a request from the Director of CENCIRA, the results of this analysis were presented in a seminar for the CENCIRA professional employees.

Another memo to the Director of CENCIRA analyzed the production and economic situation of the SAIS J. C. MARIATEGUI (12,000 beef cows) in CATAMARCA. Recommendations included a technical assistance and training program for SAIS members.

Publications generated with assistance of the Iowa Mission included:

(1) Manual de Administracion para Empresas Campesinas (Administration Manual for Associative Enterprises), R. Palacios, O. Castilla, G. Carranza, H. Diaz, J. T. Mulleady, CENCIRA, 1975. This was a 37-page publication describing the functions of the production cooperative manager in relation with the direction, organization, and

planning of the cooperative. This material was later on used in the Farm Management course.

(2) Computerized production planning of associative farm enterprises in Peru, Iowa Mission publication, R. A. Hoffmann, June, 1975.

(3) Planificacion mecanizada para los fines de produccion agricola de las empresas asociativas en el Peru, Iowa Mission publication, R. A. Hoffmann, April, 1975.

(4) Production cost analysis of major agricultural crops and comparative crop feasibility analysis for evaluating future national production programs. In Feasibility Report submitted to USAID by the Ministry of Food, S. H. Sosnick and R. A. Hoffmann, 1975.

(5) Evaluation of "Agricultural Sector Survey-Peru." Special report requested by, and submitted to, the Director of USAID/Peru, R. A. Hoffmann, May, 1975.

(6) Agricultural sector development, a program sector assessment approach. Special report requested by, and submitted to, the Director of USAID/Peru, R. A. Hoffmann, January, 1975.

(7) Plan de Trabajo, Cencira-Mission Iowa, R. A. Hoffmann and J. T. Mulleady, October, 1974.

(8) Programacion Lineal Aplicada al Planeamiento de las Empresas Campesinas (Linear Programming Applied to Associative Enterprise Planning), J. T. Mulleady, CENCIRA, May, 1977. This publication was the result of the material presented in the two linear programming courses—120 pages. It contained the basic principles of model building and primal and dual interpretation.

(9) Teaching materials prepared by Mulleady included:

(a) Costo de Produccion de una Empresa Lechera (Production Cost of a Dairy Farm), 19 pages.

(b) Notas sobre Teoria de la Firma (Notes on theory of the firm), 20 pages.

(c) Eficiencia de la Produccion a Travez del Tiempo (Production efficiency through time), 9 pages.

(d) Riesgo e Incertidumbre on la Produccion Agricola (Risk and Uncertainty in Agricultural Production), 13 pages.

Most of these publications are listed in Appendix B.

Examples of training courses conducted by Mulleady for Professional Personnel included the following:

<u>Place</u>	<u>Date</u>	<u># of participants</u>	<u>Participants</u>
Cusco	May 12-June 5, 1974	35	MOA Professionals
CENCIRA	Aug. 5-Sept. 28, 1974	30	MOA, SINAMOS, and B.F.A.
Chiclayo	Oct. 24-Oct. 28, 1974	12	MOA Professionals
CENCIRA	Oct. 8-Oct. 25, 1974	30	MOA, SINAMOS and B.F.A.
Arequipa	Nov. 18-Dec. 6, 1974	30	MOA, SINAMOS and B.F.A.
CENCIRA	Feb. 17-April 1, 1975	20	CENCIRA Professionals
CENCIRA	May-June, 1976	23	DGAEC Professionals
CENCIRA	June 21-July, 1976	32	DGAEC Professionals
CENCIRA	June, 1976	25	MOA, MDF, BFA and CENCIRA
Cusco Univ.	Aug. 2-Sept. 4, 1976	24	Graduate students and farm managers
Tarapoto	Sept. 9-12, 1976	30	DGAEC Professionals
CENCIRA	April, 1975	10	CENCIRA Professionals
CENCIRA	Oct. 18-Nov. 22, 1976	12	OSPA, DGAEC, CENCIRA

Price Policy

Working in the DGPA, Stephen Sosnick (on loan to the Iowa Mission from the University of California, Davis) assisted the Peruvians in the following four applied research projects: (1) comparative costs of different tractors, (2) best use of a refinery for edible oils, (3) comparative advantage in soybean production, and (4) estimation of average costs of production. In addition, I served as a consultant on three Peruvian projects—(1) identifying inefficiency in food marketing, (2) implementing price controls, and (3) designing a system of packing houses and food markets.

Results of this work were summarized in the following reports and publications: (1) Comparison of Tractor Costs, (2) Inefficiencies in Marketing Food in Peru, (3) Report on the Edible Oil Refinery, (4) Importing vs. Growing Soybeans, (5) Methodology For Estimating Average Costs of Production, and (6) C. Lescano, R. Morales, and S. Sosnick, "Estudio de Rentabilidad de Refinacion de Aceite Comestible en la Central de Cooperativas Agrarias del Huallaga Ltda. No. 25" (April, 1975, 73 pp.). This report showed that the additional investment needed to process edible oil at the refinery in question would have had a yield of less than two percent per year.

Six Peruvians within the DGPA were assisted by Sosnick in the use of techniques and analysis in the above studies.

Statistical Assistance

Responding to the Peruvian request for statistical assistance, postponed from the year earlier, Barry A. Arnold arrived in July, 1974, and immediately began work in OGEMA, on several activities which Roy Hickman, Iowa short-term consultant, had discussed with the OGEMA staff in 1973. These activities included training research in sampling, data collection and data analysis.

The following courses were presented to professional personnel in the public sector:

(1) Regression theory. Barry Arnold presented an introductory course in regression theory and methods to staff members of the Information and Statistics Office as well as other offices of the Ministries of Agriculture and Food in addition to other Ministries. Attendance was about 40. The class notes were transcribed by two class members and circulated in multilithed form.

(2) Introductory courses on theory and applications of statistics. Roger Arroyo and Barry Arnold with the assistance of technicians from the Biometry Office (Ministry of Food), taught these courses in Chiclayo (July 29-August 6, 1975) and then in La Molina (August 12-August 22, 1975). The notes from this course were bound by the Direccion General de Investigacion of the Ministry of

Food under the title: "Estadística Experimental: Curso Básico." Roger Arroyo and colleagues subsequently repeated these courses using these course notes, in courses offered in Tarapoto and Arequipa.

Barry Arnold gave a series of lectures on "Characterizations of the exponential distribution and related topics" to students and staff members of the statistics department at San Marcos University. Out of this course came ideas which led to research on modeling Peruvian income distributions with Leonor Laguna (originally with ENCA and subsequently an employee of the Ministry of War).

Much of the consulting involved implicit or explicit training. Arnold was frequently consulted early on in a project and was not involved in the actual implementation of the plans discussed. During the summer of 1974, he consulted with Arturo Rubio in OGEMA regarding sampling procedures appropriate for gathering information about chicken farming operations in Peru. I later attended sessions of the First National Agriculture Conference in Lima where this and related problems were discussed. During the period July-December, 1974, he worked with Arturo Rubio on problems related to analysis of the 1971-72 livestock survey and on developing a model for production costs for rice.

During 1974, Arnold consulted with Roger Arroyo and Arturo Rubio on desirable revisions of the "Plan Alterno." This was the instrument used at that time to gather continuing agricultural statistics. The Plan Alterno was basically a sound instrument and many of the suggestions developed involved modifications designed to insure that its intentions would be, as much as possible, actually implemented in the field. With the governmental reorganization of January, 1975, this project was transferred to Romulo Grados.

Arroyo and Arnold conducted a series of visits to Experiment Stations throughout the country to evaluate the statistical needs and capabilities of the technicians. They also discussed possible candidates for more advanced training.

Major publications growing out of Arnold's work are:

(1) Estadística Experimental, Curso Básico.

249 pp. Multilithed for Biometry Office, Peruvian Ministry of Food (1975). With Roger Arroyo. (2) "A stochastic mechanism leading to asymptotically Paretian distributions." Proceedings of the Business and Economics Statistics Section of the American Statistical Association (1976). With Leonor Laguna. (3) Estadística: Conceptos y Aplicaciones. 140 pp. Multilithed for Biometry Office, Peruvian Ministry of Food (1977). (4) On generalized Pareto distributions with applications to income data, I. Monograph #10, International Studies in Economics, Dept. of Economics, Iowa State University, Ames, Iowa (1977). With Leonor Laguna. Description: The Pareto monograph introduces several families of generalized Pareto distributions. A possible stochastic mechanism to explain generalized Paretian behavior of income distributions is described. Some related inference techniques are illustrated using Peruvian income data.

Barry Arnold was invited back to Peru in June of 1977 to help organize and to lecture on basic statistical concepts in an experimental statistics course for technicians of the agricultural experiment stations gathered in Lima for the purpose of attending this course. Larry Nelson from North Carolina State was invited to teach the experimental design portion of the course. Other topics were simple linear and multiple regression, multivariate and nonparametric analysis. In addition to the lectures given by Arnold and Nelson, several Peruvian statisticians gave lectures on special topics. The course involved approximately 80 hours of lectures and 50 hours of laboratory sessions. Attendance was approximately 30. The course was well received. The notes were bound and circulated by the Ministry of Food. Roger Arroyo was enthusiastic about repeating the course every few years for training and/or refresher purposes among the experiment station staff.

Forest Management

The forest economist, Frederick Hopkins, assisted Peruvian counterparts in the Forestry Resources Division of the MOA (1) on the

evaluation of major programs of reforestation in the Sierra and (2) in several training and consulting activities.

Working closely with Marc Dourojeanni R., and other staff members of the DGFF, Hopkins prepared the following publications reporting on studies:

(1) "The Role of Capital in a Reforestation Project" in proceedings of First National Meeting on Forest Plantation Projects, IICA and DGFF, May, 1975. (Spanish)

(2) "Economic Considerations in the Management of Established Plantations" in proceedings of Evaluation of Forest Plantations in Peru. IICA and DGFF, May, 1976. (Spanish)

(3) The following papers were published as a series, Economic Aspects of Reforestation by DGFF and Iowa Universities Mission/USAID-Peru. (Spanish):

(a) Effects of Financial Assistance on the Evaluation of a Forest Plantation. July, 1975.

(b) Comments on the Management Plan for Eucalyptus Plantations—Agrarian Zone XI. July, 1975.

(c) Management Costs of Plantations—Agrarian Zone XI, Cusco. July, 1975.

(d) A Preliminary View of Future Timber Production and Consumption in Peru. September, 1975.

(e) Site Quality and Cost Levels in Relation to Plantation Appraisal. October, 1975.

(f) Evaluation of a Forest Plantation. November, 1975.

(g) Internal Rate of Return: Alternative Levels of Yield, Price, and Cost. December, 1975.

(h) Capital and Interest in Forest Management. January, 1976.

(i) Compound Interest Formulas and Calculations. December, 1975.

(j) Labor Requirements in the Establishment and Management of Forest Plantations. March, 1976.

The following consultations were performed:

(1) Served on a commission of the Agrarian Bank to study and submit recommendations on loans for reforestation. The Commission submitted a report in April, 1976.

(2) Worked with a technician in DGFF on an evaluation of 25,000 Ha. Algarrobo project.

(3) Reviewed proposal for a "Forest Savings" scheme developed by a DGFF technician.

(4) Consulted with technicians in DGFF on pricing policy as applied to raw natural rubber.

(5) Worked with a Peruvian enterprise interested in the development of an extraction project on the east slope of the Andes, Pasco, Junin.

(6) Worked with a forestry consultant from California who was interested in the development of forest management services and/or conversion operations in Peru.

(7) Visited the Tarapoto (San Martin) region with AID personnel and Peruvian officials to appraise feasibility of a comprehensive development project in that area including the potential contribution of forest resources.

Following up on these consultations, several memos were prepared as follows:

(1) Memo to DGFF members of Commission on Reforestation Loans commenting on low interest rate and use of simple interest in financial assistance program.

(2) Memo to DGFF technician commenting on evaluation of Algarrobo project. Indicators of productivity were developed under various sets of assumptions.

(3) Memo to DGFF technician commenting on his proposal for a Forest Savings program.

(4) Memos to DGFF personnel commenting on the pricing of natural raw rubber. Rapidly declining production was attributed largely to controlled prices well below cost of production. A price level which would cover production costs appeared to be justifiable. Opportunities for reducing production costs by raising productivity (e.g., renewed efforts at plantation development) seemed to be present.

In addition to one-to-one exchanges of information, techniques and procedures, Hopkins participated in two major training schools as follows:

(1) Participation in First National Meeting on Forest Plantation Projects, May 19-24, 1975, Cusco. Prepared three papers for this conference at request of DGFF on (a) "A Newcomer's Impressions of Forestry in Peru," (b) "Evaluation of Reforestation

Projects: Short-Run Decisions in a Framework of Long-Run Planning," (these two presented in Spanish at the meeting), and (c) "The Role of Capital in a Reforestation Project," (published in proceedings of the conference).

(2) Participated in "Evaluation of Forest Plantations of Peru," May 3-14, 1975, Cusco, Huancayo, Cajamarca. Took part in planning for this study tour and prepared two items as part of the basis for conducting this evaluation of existing forest plantations. (a) "Economic Considerations in the Management of Existing Forest Plantations," (b) "The Role of Financial Maturity," and (c) "Economic Considerations in the Management of established Plantations," (published in proceedings of Evaluation of Forest Plantations in Peru).

Upon leaving Peru, October 15, 1976, Hopkins included the following comments on Peruvian forestry in his final report.

In physical terms, Peru has a substantial forest area and timber volume. About 57 percent of the land area is forested as contrasted with 44 percent of Latin America as a whole and 34 percent for the U.S. However, the obstacles to realization of a significant contribution toward the development of the economy are formidable. Per capita consumption of industrial wood products appears to be less than $.1m^3$ annually vs. approximately $1.8m^3$ in the U.S. Net imports of forest products, particularly pulp and paper products, constitute a significant drain on scarce foreign exchange.

Given the relatively large area of natural forest in Peru, it is perhaps surprising that so much emphasis is placed on reforestation. The DGFF considers forest plantations in the Sierra to be the most productive opportunity for development of forest resources. Several considerations enter into the rationale underlying this conclusion: (1) Proximity to local markets and less costly transportation to coastal consumption centers. (2) Employment opportunities in regions characterized by very high unemployment. (3) Opportunity to determine species composition, especially long-fibered species for pulp and paper production. (4) Potentially higher yields and lower management and conversion costs. (5) Stronger technical basis for management and

utilization. (6) Protection (soil and water conservation) functions.

Forestry has a momentum in Peru well beyond that which one could reasonably expect given the general level of development. This must be attributed to the high calibre and energy of the people responsible for the administration of the DGFF. This is particularly true of Dr. Marc Dourojeanni R., Director General.

The professional staff of the DGFF includes many very capable people with educational backgrounds in agriculture or forestry. At the present time, there are no forest economists in the DGFF, though two plan to undertake graduate study in this field. This seems particularly important in view of the critical role of planning at the present time.

As is true of all government agencies and the Peruvian economy at large, the DGFF is severely handicapped by economic restraints. Obviously this reduces the effectiveness of professional personnel in the agency.

There is no library in the DGFF (though some possibility of establishing a library exists with the development of the new Research Center) and the forestry resources of the central library for the Ministry of Agriculture are negligible. I explored possibilities for assistance in developing a forestry library without success. In my opinion, this is a major handicap for the DGFF.

Much excellent work, investigative and otherwise, is done by forestry professionals but, for all practical purposes, lost because it is not possible to publish reports on such studies. This was distressing.

Some very basic information for planning and management of forestry projects is lacking. For example, tree or stand volume tables or yield tables for important species do not exist. Available maps leave much to be desired. If implemented, the recommendations of the "Evaluation of Forest Plantations" will add significantly to the data base for planning purposes.

There seems to be a need for a clarification of the roles and responsibilities of the various entities involved in reforestation and other forestry activity. The need

for an extension function, however labeled, is critical.

Changes in world market may cause shifts in margins of availability for natural timber. This combined with a more receptive attitude toward foreign investment may induce much greater industrial use of the natural forest in the next decade.

While forestry cannot be given top priority in programs to accelerate the economic development of Peru, there are opportunities to realize significant contributions through the forestry sector. Forestry warrants a role in any comprehensive development plan for Peru.

PART SEVEN: RECOMMENDATIONS

Several recommendations for improvements in technical assistance efforts abroad by U.S. universities and USAID are prompted by experiences gained in the Iowa-Peru Program. These recommendations are summarized as follows:

1. The University must make a firm and continuing commitment to serving the needs of less developed countries. This commitment must be made at the highest levels of administration including the President and Board of Regents, and permeate through the colleges and institutes into the departments. The commitment must place as much priority on encouraging a top staff member to move to another country to work on a contracted technical assistance program as teaching a principles course, performing an important research project or undertaking a high priority extension activity. The staff member should be recognized, compensated, and promoted for performance in the foreign country in line with a comparable performance on a domestic project. The University should welcome the tenured and tenure-track staff returnee with a position befitting his or her competency including the value of recent foreign experience. For nontenured staff members, the University should provide acceptable employment for a period of at least a semester or two quarters to enable the returnee to adjust and to enter the job market and locate an acceptable position.

2. USAID, or its successor(s), should provide sufficient planning and performance horizons for universities to prepare and carry out technical assistance activities commensurable with the importance and time required for the work, which might involve five to ten or more years.

3. USAID or its successor(s) should fully support and not interfere with the University's performance program unless the University's activities are clearly inconsistent with contractual provision or are not in accord with proper rapport of U.S. citizens in another country. Periodic evaluation by competent disinterested parties should be conducted as the basis for USAID actions.

4. The University should provide training in the relevant disciplines prescribed for students' interests, needs and abilities, including application of disciplinary theory and methods to problems, conditions and situations of the foreign student's country, through the means of dissertations, theses, creative components, special workshops and seminars as warranted by the number of students involved and available resources.

5. Arrangements should be made for foreign students to perform their thesis and dissertation research on high priority problems within their native countries with competent advice and assistance by experienced scholars. Through this procedure, the student contributes to the store of needed knowledge within his native country and learns how to adapt and apply theory and methods to native conditions. Also, the student's advisor becomes cognizant of the nature of problems within the foreign country and of the extent to which existing theory, methods, and tools may or may not be applicable.

6. The student's program of study committee and Graduate College should add competent scholars to the student's graduate committee from other universities, foundations or government agencies within the student's native country for purposes of advising the student in lieu of representation not available from the student's university. Since both North Carolina State University and Iowa State University had their respective graduate college staff members in Peru, each University added qualified staff members of the other University to their respective graduate college staffs for purposes of supervising students and holding examinations on behalf of the other university.

7. Students' final oral examination should be conducted by the graduate college within the student's native country whenever and wherever competent examiners can be assembled, thus saving the time and expense of the student traveling to his degree granting university in the U.S. This innovative

procedure was used by I.S.U. in Peru under the Iowa-Peru Program. Since then, the procedure has been used in other countries, including Indonesia.

8. Programs should allow foreign students, while attending the U.S. university, to keep in close touch with their native country's developments through special problems, contacts with their countrymen when possible, and selected newspapers, magazines, and books published in their native countries. Returning home to perform thesis and dissertation research is part of the process. This entire process tends to prevent the student from being weaned away from his or her native environment and tends to encourage return to his or her native country for employment after completing educational requirements.

9. Although an essential part of the university commitment entails staffing the program from within its own ranks, occasionally, the contracting university must seek services for special functions from off-campus sources. In two instances, I.S.U. "borrowed" competent personnel which were not available on campus from North Carolina State University and from the University of Cali-

fornia at Davis. Although borrowing professors from other institutions means loss of the feedback of experiences to the home institutions, it occasionally becomes necessary for universities to collaborate in staffing programs with the best available staff members wherever located. This procedure calls for a reciprocity between universities which does not always exist.

10. Since development problems in less developed (as well as developed) countries seldom can be identified, analyzed and solved within a single discipline, university educational efforts should encourage cross-disciplinary approaches and cooperation among students and their advisors in the several relevant disciplines. This approach, as an inherent part of the training process, can be taken back to their home countries by students through continuing to work closely with colleagues in other disciplines related to common problems within their countries. This approach currently applied through the Team Graduate Education Program developed jointly by ISU's World Food Institute and Water Resources Research Institute, was based, in part, upon experiences gained in the Iowa-Peru Program.

APPENDIX A. TRAINING PROGRAM

The student training component of the Iowa-Peru Program proved to be the most lasting and important part of the Program. As detailed earlier in this Report, hundreds of students were trained on the job in Peru and some 60 students were trained in the U.S. and third countries. This educational component of the Program remains as a lasting

legacy to Peru from the Iowa Mission.

Trainees are listed in two groups: (1) long-term advanced degree trainees, and (2) short-term trainees outside Peru.

The following information was available and is provided for each trainee: name, degree sought or achieved, period of study, and present employment, if known.

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LONG-TERM ADVANCED DEGREE TRAINING

<u>Name</u>	<u>Field of Study</u>	<u>Training Period</u>	<u>Location of Study</u>	<u>Degree</u>	<u>Present Position</u>	<u>Location</u>
Amat Y Leon, Carlos	Economics	5/5/64-6/29/66 2/1/78-1/2/74	Iowa State University Wisconsin University	Master's Ph.D.	Director General for Financial Development Institute	Peru
Amorin, Cesar	Ag. Economics	6/1/64-5/16/66	Iowa State University	Master's	Economics Consultant	Guatemala
Bacal, Azril	Sociology	11/21/62-9/20/65	Santa Barbara Univer- sity	Ph.D.	Professor, Agrarian University	Peru
Bolona, Carlos	Economics	5/5/71-3/3/73	Iowa State University	Master's	Research Director	Peru
Brain, Carlos	Statistics	8/18/64-7/6/66	Iowa State University	Master's	U.S.A.	U.S.A.
8 Chavez, Aurelio	Economics & Statistics	11/24/63-12/1/64	Iowa State University	Master's	Chief, Technical Cooperation	Peru
Chavez, Hector	Statistics	9/2/70-8/16/72	Chapingo, Mexico	Master's	Head, area unit for intensive cattle prod.	Peru
Checkley, Jorge	Macro Econ.	6/16/70-6/14/74	Iowa State University	Master's	Research Analyst	Peru
Cossio, Jorge	Ag. Economics	8/11/63-6/8/65	Iowa State University	Master's	Research Analyst	Peru
de las Casas, Lizardo	Ag. Economics	11/10/65-12/30/65	Iowa State University	Ph.D.	Planning, IICA	Costa Rica
de las Casas, Pedro	Ag. Economics	11/20/62-7/16/65	Iowa State University	Master's	Assistant Manager (Finance)	Peru
Echevarria, Julio	Economics	3/5/64-8/26/66 3/5/72-11/23/74	Iowa State University	Ph.D.	Professor, Agrarian University	Peru
Flores, Otto	Rural Soc.	1/28/64-3/18/66 8/27/70-3/2/74	Iowa State University Wisconsin University	Master's Ph.D.	Professor, Agrarian	Peru

LONG-TERM ADVANCED DEGREE TRAINING (continued)

<u>Name</u>	<u>Field of Study</u>	<u>Training Period</u>	<u>Location of Study</u>	<u>Degree</u>	<u>Present Position</u>	<u>Location</u>
Galvan, Javier	Ag. Economics	6/25/65-11/30/68	Iowa State University	Ph.D.	Andean Common Market	Peru
Gianella, Jose	Economics	6/24/71-6/25/73	Iowa State University	Master's	Research	Peru
Giles, Antonio	Ag. Economics	9/10/63-6/1/65	Iowa State University	Ph.D.		Peru
Grados, Romulo	Economic Analysis	6/20/67-8/30/69	Iowa State University	Master's	Director General, Info. & Statistics	Peru
Huambachano, Jaime	Ag. Economics	2/19/68-2/28/70	Iowa State University	Master's		Peru
Hurtado, Juan	Economics	6/11/66-4/5/68	Iowa State University	Master's	Financial Manager	Peru
Iguiniz, Javier	Economics & Statistics	6/15/70-7/27/73	Iowa State University	Master's	Director, Social Science Program	Peru
Jensen, Brian	Macro Econ.	2/27/66-11/18/67	Iowa State University	Master's	Deputy Vice-Pres., Wells Fargo Bank	Venezuela
Llose, Augusto	Ag. Economics	8/11/67-9/25/69	Iowa State University	Master's	Professor, Agrarian University	Peru
Maradiegue, Hugo	Development Economics	8/27/71-9/1/74	Iowa State University	Ph.D.	National Planning Institute	Peru
Oliart, Francisco	Land Economics	7/17/67-1/27/69	Wisconsin University	Ph.D.	Head, Interamerican Center for Agrarian Reform	Colombia
Otero, Rafael	Ag. Economics	11/20/62-3/10/66	Iowa State University	Master's	COAAP (Economics)	Peru
Pajuelo, Marco	Economics & Public Finance	7/24/66-9/13/68 8/30/71-12/2/73	Iowa State University	Master's	Director General	Peru

Paredes, Angel	Ag. Economics	6/19/67-7/12/68	Chapingo, Mexico	Master's	Coordinator of Projects, ONERN	Peru
Pawelec, Maria	Home Management & Cons. Econ.	11/28/65-3/25/68	Iowa State University	Master's	Professor	Venezuela
Petrovich, Wallter	Ag. Economics	9/11/63-9/19/65	Iowa State University	Master's	General Manager, IOBH	U.S.A.
Portillo, Jose	Economics	3/5/65-1/12/67 9/15/68-1/12/69	Iowa State University	Ph.D.	Advisor	Peru
Quijano, Conrado	Economics	6/24/66-7/27/67	Iowa State University	Master's	Director General (Special Research)	Peru
Reategui, Ernesto	Economics & Administration	11/9/71-4/18/74	University of Iowa	Master's	Financial Manager	Peru
Robles, Julio	Statistics	8/26/71-12/28/73	Iowa State University	Master's	Research	Peru
Ruibal, Alberto	Ag. Economics	7/27/63-7/31/65	Iowa State University	Master's	Research	Peru
Salaverry, Jose	Ag. Economics	8/8/62-3/4/66 4/26/68-8/28/69	Iowa State University	Ph.D.	Director General, Finance Ministry	Peru
Salazar, Eduardo	Ag. Economics	12/30/69-12/30/70	Chapingo, Mexico	Master's		Peru
Salazar, Raul	Economics	8/30/71-11/27/73	Iowa State University	Master's	Director, Economic Studies	Peru
Santibanez, Felipe	Regional Planning	6/21/71-5/24/73	Univ. of Pennsylvania	Master's	Sub-Gen. Manager	Peru
Seinfeld, Eric	Development Economics	7/23/63-12/3/64	Iowa State University	Master's	Private Sector	Venezuela
Seminario, Alejandro	Land Economics	2/25/66-3/12/68	Iowa State University	Master's	Operations Manager	Peru
Silva Santisteban, Gorzalo	Ag. Economics	6/22/66-12/23/67	Chapingo, Mexico	Master's	International Director, Technical Co-op.	Peru

LONG-TERM ADVANCED DEGREE TRAINING (continued)

<u>Name</u>	<u>Field of Study</u>	<u>Training Period</u>	<u>Location of Study</u>	<u>Degree</u>	<u>Present Position</u>	<u>Location</u>
Vergara, Cesar	Ag. Economics	9/1/67-5/22/68	Iowa State University	Master's	Exec. Director, FAMELSA	Peru
Vilanueva, Julio	Computer Sci.	7/10/71-7/19/75	Iowa State University	Ph.D.	Development Analyst	Peru
Zegarra, Hugo	Development Economics	2/17/65-9/15/67	Iowa State University	Master's	Consultant	Peru

SHORT-TERM TRAINING OUTSIDE PERU

<u>Name</u>	<u>Field of Study</u>	<u>Training Period</u>	<u>Location of Study</u>	<u>Present Position</u>	<u>Location</u>
Anselmi, Fernando	Statistics	9/2/70-12/17/70	Chapingo, Mexico	Head, Planning Unit	Peru
Balarezo de Veilozzi,	Social Program	6/26/72-7/24/72	Costa Rica & U.S.A.	Maracay University	Venezuela
Caballero, Wilfredo	Invitational Travel	5/11/70-5/24/70	Various	Director, Demographic Research	Peru
Castillo, Alfonso	TVA Fertilizer Program	7/12/67-11/12/67	Tenn. Valley Authority, Michigan University	Manager, National Ferti- lizer Co.	Peru
Castro, Jorge	Crop & Livestock Report & Outlook	7/5/70-9/16/70	New Mexico & U.S.A.	Director, Methodology & Statistics	Peru
☞ Corbera, Jose	Planning Course	9/29/70-12/11/70	Puerto Rico	Director of a land development project	Peru
Cordier, Jose	Statistics	6/3/70-9/18/70	USDA, U.S.A.	Head, Statistical Info.	Peru
Ego Agruirre, Arturo	Special Program	5/3/65-7/27/65	ISU & others, U.S.A.	Retired, translating from English-Spanish	Peru
Geng, Ramon	Planning Course	9/29/70-12/2/70	Puerto Rico	Technical Advisor	Peru
Kawamura, Mario	Statistics	9/2/70-12/31/70	Mexico	Head of Transportation & Data Control	Peru
Montalvan, Hermann	SPURS Program	8/9/70-12/17/70	MIT, U.S.A.	Director General, OSPA	Peru
Moran, Eduardo	Economic Planning	2/23/65-12/9/65	Chili	Consultant	Peru
Paz, Luis	Invitational Travel	5/11/70-5/24/70	Various	General Director, Rural Planning	Peru

SHORT-TERM TRAINING OUTSIDE PERU (continued)

<u>Name</u>	<u>Field of Study</u>	<u>Training Period</u>	<u>Location of Study</u>	<u>Present Position</u>	<u>Location</u>
Price, Nestor	TVA Fertilizer Program	7/16/67-11/11/67	TVA, University of California	Research	Peru
Prochazke, Gustavo	Invitational Travel	1966-1967	USDA, U.S.A.	Administration	Colombia
Rivera, Luis	Crop & Livestock Report & Outlook	7/5/70-9/16/70	New Mexico, U.S.A.	Administration	Peru
Torres, Rodolfo	Statistics	9/3/70-9/18/70	USDA	Chief (Statistics)	Peru
Wendorff, Manuel	Crop & Livestock Report & Outlook	7/5/70-9/16/70	New Mexico, U.S.A.	Program Director	Peru
Wu, Alredo	Statistics	6/3/70-9/18/70	USDA, U.S.A.	Director	Peru

APPENDIX B. PUBLICATIONS

The Iowa-Peru Program produced over 100 publications reporting on activities of the Program. Copies of these reports, most in Spanish, some in English also, remain in Peru for the continued use of the Peruvians as a legacy of the Iowa Mission.

In addition to publications listed in this Appendix, numerous memoranda and informal reports were produced for direct use in training and by decision makers within Peruvian entities.

Seven publication series were developed into which the publications are listed in this Appendix. An example of the front cover for each series is included.

The seven series are:

B-1. Iowa-Peru Mission Program Reports reporting on the activity programs of the Mission.

B-2. Iowa-Peru Program Staff Reports, including end-of-term reports, periodic progress reports and program plans.

B-3. Special Reports—Iowa Mission reporting on major studies.

B-4. Economic Studies—Iowa Mission.

B-5. Boletines Informativos Por La Mision Iowa.

B-6. International Studies in Economics, Iowa-Peru Program, containing major studies of interest to scholars. Copies of these monographs are sent to a library exchange list of about 250 university, foundation and governmental libraries throughout the world.

B-7. Reports issued prior to development of series.

APPENDIX B-1. IOWA-PERU MISSION PROGRAM REPORTS

- Fahr, Samuel M., Chief of Party. "End of Tour Report from 23 June 1971 through August 1973."
- Fahr, Samuel M. "Plan of Work from March 2, 1973 through September 24, 1973." April 1973.
- Fahr, Samuel M. "Report of Progress from July 1, 1972 through December 31, 1971." February 1973.
- Fahr, Samuel M. "Plan of Work from April 1, 1972 through March 31, 1973." September 1971.
- Mann, Fred L. "Report of Progress from July 1, 1970 through June 30, 1971." July 1971.
- Mann, Fred L. "Plan of Work from April 1, 1971 through March 31, 1972." March 1971.
- Mann, Fred L., John Huerta, Dennis Morrissey, et al. "Preliminary Analysis—Agrarian Reform Law No. 17716 Enacted on 24 June 1969." January 1970.
- Mann, Fred L. and John Huerta. "Text of Decree-Law No. 17716—Agrarian Reform Law." December 1969.
- McGaughey, Stephen. "Small Sierra Irrigation Projects: Recent Experience." May 1969.
- Shepherd, Geoffrey. "End of Tour Report." May 1969.
- Shepherd, Geoffrey, Gordon Sanford, and Jorge Cossio Lopez. "Marketing and Price Policy for Menestras in Peru." April 1969.
- Shepherd, Geoffrey, Gordon Sanford, and Jorge Cossio Lopez. "How to Set Guaranteed Prices." February 1969.

IOWA-PERU MISSION

PROGRAM REPORTS



No. _____



TITLE

AUTHOR(S)

IOWA STATE UNIVERSITY / AMES, IOWA

UNIVERSITY OF IOWA, IOWA CITY, IOWA
UNDER CONTRACT WITH AGENCY FOR INTERNATIONAL DEVELOPMENT

DATE

Lima, Peru



APPENDIX B-2. IOWA-PERU PROGRAM STAFF REPORTS

- No. 1. Final Report: Three Months Duty as Legal Consultant to Iowa-Peru Project, 1963, by Samuel M. Fahr.
- No. 2. Annual Report: Iowa State University and State University of Iowa, September 1, 1962 to August 31, 1963, by Herbert B. Howell.
- No. 3. Final Report: Observation Concerning the Future Role of Iowa Marketing Personnel, October 1, 1963, by Lee Kolmer.
- No. 4. Semi-Annual Report: Iowa Universities Contract Group, September 1, 1963 to February 29, 1964, by Herbert H. Howell.
- No. 5. Final Report, May 25, 1964, by Lehman B. Fletcher.
- No. 6. Final Report, August 27, 1964, by Raymond R. Beneke.
- No. 7. Semi-Annual Report: Iowa State University and State University of Iowa, March 1, 1964 to August 31, 1964, by J. T. Scott
- No. 8. Final Report, Summer 1964, by James R. Prescott.
- No. 9. Final Report, Summer 1964, by Erik Thorbecke.
- No. 10. Final Report, September 14, 1964, by Samuel M. Fahr.
- No. 11. Final Report from Puno, April 19, 1965, by David W. Brown.
- No. 12. Final Report, May 24, 1965, by Lehman B. Fletcher.
- No. 13. Final Report, July, 1963 to May, 1965, by Melvin G. Elase.
- No. 14. Semi-Annual Report: Iowa Universities Contract Group, September 1, 1964 to February 28, 1965, by J. T. Scott.
And, Final Report: June 10, 1965, by J. T. Scott.
- No. 15. Final Report, June 24, 1965, by Donald R. Kaldor.
- No. 16. Focusing on Research Priorities in Agricultural economics, June 24, 1965, by Donald R. Kaldor.
- No. 17. Relation of Agricultural Price Policy to Economic Growth and Income Distribution Objectives, June, 1965, by Donald R. Kaldor.
- No. 18. Progress Report: Agricultural Programs, Planning and Research, July 29, 1965, by David W. Brown.
- No. 19. Final Report, August 3, 1965, by Raymond R. Beneke.
- No. 20. Final Report and the Use of Aerial Photographs in Land Title Registration in Peru, August 5, 1965, by Samuel M. Fahr.
- No. 21. Final Report, August 5, 1965, by Donald L. Winkelmann.
- No. 22. Final Report, August, 1965, by Erik Thorbecke.
- No. 23. A Model Accounting System for Project Analysis, June, 1964, by James R. Prescott.
- No. 24. Final Report, September, 1963, to November, 1965, by Dean F. Schreiner.
- No. 25. Final Report, September, 1963 to December 13, 1965, by Apostolos Condos.
- No. 26. Final Report, December 18, 1963 to December 13, 1965, by Enrique Viques.
- No. 27. Final Report, June 1, 1965 to November 25, 1966, by William C. Merrill.
- No. 28. Final Report, May 1, 1965 to December 24, 1966, by David W. Brown.
- No. 29. Final Report, December 1, 1964 to July 14, 1967, by Thyrele Robertson.
- No. 30. Final Report, June 9, 1967 to August 8, 1967, by Samuel M. Fahr.
- No. 31. Final Report, September, 1965 to May, 1969, by Geoffrey Shepherd.

IOWA-PERU PROGRAM

STAFF REPORTS



Staff Report No. _____



Final Report

by

DEPARTMENT OF ECONOMICS AND SOCIOLOGY
IOWA STATE UNIVERSITY / AMES, IOWA

COLLEGE OF LAW, UNIVERSITY OF IOWA, IOWA CITY, cooperating

UNDER CONTRACT WITH AGENCY FOR INTERNATIONAL DEVELOPMENT



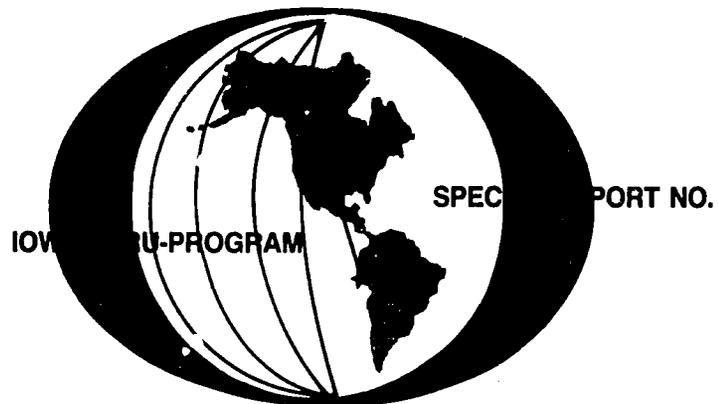
Date



APPENDIX B-3. SPECIAL REPORTS--IOWA MISSION

1. "An Economic Developer's Guide to Peruvian Legal Disposition." Dale B. Furnish, May 1967.
2. "The Economic and Legal Aspects of Price Controls in Peruvian Agriculture." Geoffrey Shepherd and Dale B. Furnish, June 1967.
3. "The Peruvian Land Registration System and Some Suggestions for Its Improvement." Herbert S. Somerwitz and Samuel Fahr, July 1967.
4. "The Response of Food Prices to a Devaluation of the Sol." William C. Merrill and Rene Vandendries, September 1967.
5. "An Analysis of Livestock and Meat Laws in Peru." Dale B. Furnish, September 1967.
6. "Rice Marketing Problems and Alternative Solutions." Geoffrey Shepherd, Ing° Gustavo Prochazka Travi and Dale B. Furnish, November 1967.
7. "Price Policy for Milk in Peru." Geoffrey Shepherd and Lorenzo Souza C., March 1968.
8. "Price Policy for Beef in Peru." Geoffrey Shepherd and Dale B. Furnish, April 1968.
9. "Economic Development Through Agrarian Reform in the Central Sierra of Peru." Enrique Viques Riog, June 1967.
10. "An Analysis of the Evolution of Peru's Beef Imports from 1950 to 1966." Rene Vandendries, October 1967.
11. "Peruvian Macro-Economic and Agricultural Prospects and Strategy, 1967-1972." December 1967.
12. "An Economic Developer's Guide to Peruvian Legal Disposition." Dale B. Furnish, May 1967.
13. "The Economic and Legal Aspects of Price Controls in Peruvian Agriculture." Geoffrey Shepherd and Dale B. Furnish, June 1967.

SPECIAL REPORTS—IOWA MISSION



(Title)

(Author(s))

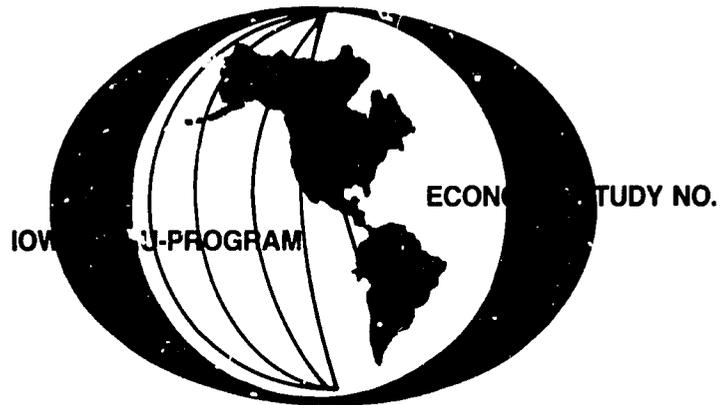
(Peruvian Agency)

(Date)

APPENDIX B-4 ECONOMIC STUDIES—IOWA MISSION

1. "Economic Development Through Agrarian Reform in the Central Sierra of Peru." Enrique Viques, June 1967, 144 pages.
2. "An Analysis of the Evolution of Peru's Beef Imports from 1960 to 1966." Rene Vandendries, October 1967, 19 pages.
3. "Peruvian Macro-Economic and Agricultural Prospects and Strategy, 1967-1972, December 1967, 267 pages.
4. "The Peruvian Fertilizer Industry Present Situation and Future Prospects." Thyrele Robertson, May 1968, 223 pages.
5. "Investment Criteria for the Evaluation and Planning of Public Investment in Water Resource Development Projects: Peru." Stephen McGaughey, August 1968, 282 pages.
6. "Values, Costs and Pricing Alternatives for Irrigation Water: Canete—Peru." J. A. Seagraves, July 1975, 89 pages.
7. "La Reforma Agraria Como Instrumento Para El Desarrollo Economico en la Sierra Central Del Peru." Enrique Viques Roig, Enero 1967, 285 pages.
8. "Análisis de Precios de Productos Agrícolas en el Peru." Thyrele Robertson, Enero 1967, 49 pages.
9. "Estableciendo Precios de Arroz en el Peru—Informe Resumido." William C. Merrill and Gustavo Prochazka, Marzo 1967, 38 pages.
10. "Sugerencias Para un Incremento en la Produccion Y Consumo de Leche en el Peru." William C. Merrill and Lorenzo Souza C., Marzo 1967, 67 pages.
11. "El Comercio Exterior Y El Desarrollo Economico Del Peru." Rene Vandendries, Setiembre 1967, 299 pages.
12. "Un Analisis de la Evolucion de la Importacion de Carne de Vacuno Desde 1950 Hasta 1966." Rene Vandendries, October 1967, 21 pages.
13. "Programacion de la Reforma Agraria Peruana." Enrique Viques Roig, Enero 1968, 142 pages.
14. "Panorama Macro-Economico del Peru Y Una Estrategia Para El Desarrollo Economico, 1967-1972." Enero, 1968, 118 pages.
15. "Panorama del Sector Agrario Peruano Y Una Estrategia Para Su Desarrollo 1967-1970." Enero 1968, 184 pages.
16. "La Industria Peruana de Fertilizantes, Situacion Actual Y Futuras Perspectivas." Thyrele Robertson, Mayo 1968, 231 pages.
17. "Peru Proyecciones a Largo Plazo de la A Oferta Y Demanda De Productos Agropecuarios Seleccionados 1970-1975-1980." Gupo Oferta y Demanda—Convenio de Cooperacion Tecnica Estadistica y Cartografia—Univ. Agraria y Ministerio de Agricultura—Direccion de Estadistica y Catastro y Estudios Economicos con el Auspicio de la Mision de las Universidades de Iowa en el Peru y USAID, Marzo 1969, 254 pages.
18. "Análisis Y Recomendaciones: Distribucion Y Sistema de Comercializacion de Fertilizantes en el Peru." Empresa Publica de Servicios Agropecuarios y Pesqueros (EPSAP), ex-CONAFER Tennessee Valley Authority con el auspicio de la Mision de las Universidades de Iowa en el Peru y la USAID, Enero 1970, 310 pages.
19. "Criterios de Inversion Para la Evaluacion Planificacion de Proyectos de Irrigacion en el Peru." Stephen McGaughey, Enero 1970, 357 pages.
20. "La Reforma Agraria: Un Enfoque Dirigido a medir su Impacto en la Economia Provincial." Hyike Van de Wetering, Mayo 1970, 84 pages.
21. "Proyecto Desarrollo Ganadero en la Selva." Carlos Cordova, Agosto 1971, 31 pages.
22. "Un Analisis Macro Econometrico de la Perspectivas de Desarrollo Economico del Peru a Mediano Plaza." Robert Van Slooten, 1973, 603 pages.
23. "Un Modelo de Programacion Lineal Inter-Regional Para un Analisis de la Politica Agraria del Peru." Jose Salaverry, Marzo 1973, 603 pages.
24. "Un Primer Intento para Determinar los Factores que Afectan la Produccion de Maiz de Grano." Armando Tealdo, Abril 1973, 59 pages.
25. "Análisis de Precios en Productos Agrícolas Caso: Tuberculos." Julio Perez Espinoza, Abril 1973, 108 pages.

ECONOMIC STUDIES—IOWA MISSION



(Title)

Prepared by
(Peruvian Agency)

(Author(s))

Iowa Universities Mission to Peru
in cooperation with the Agency
for International Development

(Date)

APPENDIX B-5. BOLETINES INFORMATIVOS POR LA MISION IOWA

1. "Inversion de Los Bonos de La Deuda Agraria en la Industria." Enrique Viques Roig, Dic. 1966, 21 pages.
2. "Investigaciones Legales de las Estructuras de Comercializacion Agropecuaria en el Peru: Trigo." Dale B. Furnish and Raul Munoz Cabrera, February 1967, 47 pages.
3. "Son Los Margenes del Mercadeo de Frutas Y Hortalizas Demasiado Amplios." Geoffrey Shepherd, Enero 1967, 43 pages.
4. "Manual de Administracion Rural de Fundos Para el Departamento de Puno." Ronald Tinnermeier, Abril 1967, 98 pages.
5. "La Economia Y Aspectos Legales del Control de Precios en la Agricultura Peruana." Geoffrey Shepherd and Dale B. Furnish, Junio 1967, 67 pages.
6. "El Regimen de Inscripcion de Tierras en el Peru Y Algunas Sugestiones Para Mejoralo." Herbert S. Soverwitz and Samuel M. Fahr, November 1967, 143 pages.
7. "Problemas de la Comercializacion del Arroz Y Soluciones Alternativas." Geoffrey Shepherd, Gustavo Prochazka and Dale B. Furnish, November 1967, 37 pages.
8. "Un Analisis de las Leyes Sobre el Ganado Y La Carne en el Peru." Dale B. Furnish, Dic. 1967, 69 pages.
9. "La Reaccion de los Precios de los Alimentos a La Devaluacion Del Sol." William C. Merrill and Rene Vandendries, Enero 1968, 79 pages.
10. "Politica de Precios Para la Carne de Vacuno en el Peru." Geoffrey Shepherd, Enero 1969, 42 pages.
11. "Politica de Precios Para la Leche en el Peru." Geoffrey Shepherd and Lorenzo Souza C.. Marzo 1968, 47 pages.
12. "Almacenamiento Para Productos Agricolas en el Peru." Geoffrey Shepherd, Jorge Cossio y Armando Huayanca, Diciembre 1969, 45 pages.

BOLETINES INFORMATIVOS POR LA MISION IOWA



(Title)

(Author(s))

(Peruvian Agency)

(Date)

**APPENDIX B-6. INTERNATIONAL STUDIES IN ECONOMICS
MONOGRAPHS—IOWA PERU PROGRAM**

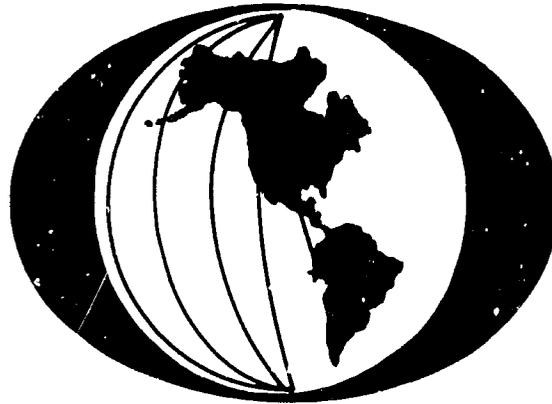
Monographs issued to date in the "International Studies in Economics" series are as follows:

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Monograph 1. Determination of Aggregate and Sectoral Growth Rates for Peru, 1960-70. Erik Thorbecke, January 1966.</p> <p>Monograph 2. Peru: Balance of Payments Projections, 1964-70. Erik Thorbecke, Rene Vandendries and Pedro de Las Casas, January 1966.</p> <p>Monograph 3. Some Notes on Macroeconomic Implications of and the Cost of Financing Agrarian Reform in Peru. Erik Thorbecke, January 1966.</p> <p>Monograph 4. The Marketable Surplus of Rice in Indonesia: A Study in Java-Madura. Mubyarto and Lehman B. Fletcher, October 1966.</p> <p>Monograph 5. Production Functions for the Industrial Sector of Peru." Eugene A. Brady, November 1967.</p> <p>Monograph 6. The Distribution of Total Personal Income in Peru. Eugene A. Brady, January 1968.</p> <p>Monograph 7. An Integrated Growth Model for the Basic Sectors and Dependent Residentiary Sectors of Southern Peru. Dean F. Schreiner and John F. Timmons, November 1968.</p> | <p>Monograph 8. Latin American Agricultural Development and Policies. Lehman B. Fletcher and William C. Merrill, Septemer 1968.</p> <p>Monograph 9. A Methodological Procedure for Analyzing the Policy Instruments of an Underdeveloped Economy—Using the Economy of Peru as a Demonstrative Case. Eugene A. Brady, November 1968.</p> <p>Monograph 10. A Generalized Pareto Distribution with application to Income Data. Barry C. Arnold and Leonor Laguna, May 1977.</p> <p>Monograph 11. Export Instability in LDCs: An Annotated Bibliography. Ken McCormick, 1980.</p> <p>Monograph 12. Economic Growth, Equity and Agricultural Development in the Dominican Republic. Lehman B. Fletcher and Erik Thorbecke, May 1980.</p> <p>Monograph 13. Agrarian Reform, Agricultural Planning and Economic Development in Peru. John F. Timmons, 1981.</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Copies of available monographs may be obtained by writing to the Editor, International Studies in Economics, Department of Economics, Iowa State University, Ames, Iowa 50011.

INTERNATIONAL STUDIES IN ECONOMICS

Monograph no.



Iowa-Peru Program

(Title)

(Author(s))

(Peruvian Agency)
and
The Agency for International Development
cooperating

Department of Economics, Iowa State University, Ames, Iowa

(Date)

B-7. REPORTS ISSUED PRIOR TO DEVELOPMENT OF SERIES

- Hase, M. G.; Mann, Fred L.; and Paz, L. J. "Source of Financing of the Agrarian Reform." (SP.) Seminar. *Financ. Reforma Agr. Trab.*, 1964: 251-277.
- Mann, Fred L. "Legislation Against Speculation and Acaparamiento"; "Milk" Legal Research Series, Iowa Mission and CONAP, 1966, Peru.
- Mann, Fred L.; Hertz, John; Morrissey, Dennis; et al. "Preliminary Analysis--Agrarian Reform Law No. 17716 Enacted on June 24, 1969--Peru." January 30, 1970. 195 pages. Program Report--Technical No. T-4. Iowa Mission to Peru, Lima, Peru.
- Mann, Fred L.; and Huerta, John. "Text of Decree Law No. 17716 Agrarian Reform Law" (translation from Spanish). December, 1969. 97 pages. Iowa Mission to Peru, Lima, Peru. Program Report--Technical No. T-5.
- Legal Research Series on Agricultural Marketing Structures in Peru:
- Mann, Fred L.; Munoz Cabrera, Raul. "Price Policies." July, 1966. 36 pages.
- Mann, Fred L.; Cabrera, Raul Munoz. October, 1966. 44 pages.
- Mann, Fred L.; and Huerta, John. "Comentarios sobre el Proyecto de Ley General de Aguas." February, 1969. 30 pages. Iowa Mission to Peru--Informe de Programas--Tecnicos No. T-5, Lima, Peru.
- Mann, Fred L.; and Balarezo, Isabel. "Propuestas de Normas para Sociedades Mixtas en el Peru." August, 1969. 35 pages. Iowa Mission to Peru--Informe de Programas--Tecnicos No. T-5, Lima, Peru.
- Mann, Fred L.; and Munoz Cabrera, Raul. "Disposiciones Legales Relativas a la Leche en el Peru." October, 1969. 46 pages. Iowa Mission to Peru--Informe de Programas--Tecnicos No. T-7, Lima, Peru.
- Mann, Fred L.; and Fahr, Samuel M. "Propuesta para un Nueva Sistema de Registro y Enajenacion de Derechos de Propiedad Privada en el Peru." October, 1965. 13 pages. Direccion de Economia Agraria and Iowa Mission to Peru, Lima, Peru.
- Mann, Fred L. "Un Procedimiento Legal de Concentracion Parcelaria Para el Peru." February, 1966. 59 pages. Direccion de Economia Agraria, Ministerio de Agricultura and Iowa Mission to Peru, Lima, Peru.
- Mann, Fred L. "Agrarian Reform Policy and Rural Institutions Development Suggestions." 12 pages. Iowa Mission to Peru, Lima, Peru.
- Mann, Fred L.; and Hase, Melvin G. "A Potential Institution and Procedure for Financing Agrarian Reform in Peru." October 15, 1963. 7 pages. Iowa Mission to Peru, Lima, Peru.
- Mann, Fred L. "The Judicial System of Peru." October, 1965. 12 page. Iowa Mission to Peru, Lima, Peru.
- Mann, Fred L. "Legal-Economic Research in Agrarian Reform Studies." 1963. 11 pages. Iowa Mission to Peru, Lima, Peru.
- Mann, Fred L. "Farm Credit in the United States, Proceedings of Annual Conference of Institute of International and Comparative Agricultural Law." Florence, Italy, 1960.
- Mann, Fred L. "Legal-Economic Research, Proceedings of Conference of Inter-American Bar Association." May, 1963. Panama. English and Spanish versions.

APPENDIX C. IOWA-PERU PROGRAM STAFF

Staff members serving the Iowa-Peru Program in Peru are included with their titles under the Program, arrival and departure dates, present position, and current employer. The staff is divided into two

lists: (1) Long-term Advisors, serving in Peru one year or more, continuously, and (2) Short-term Advisors, serving in Peru less than one year.

SHORT-TERM ADVISORS

<u>Name</u>	<u>Title</u>	<u>Arrival</u>	<u>Departure</u>	<u>Current Position</u>	
John C. O'Byrne	Law Advisor	9-21-61	11-19-61	Dean, College of Law	University of Georgia
John F. Timmons	Economist	9-21-61	11-19-61	Distinguished Professor	Iowa State University
Antonio Giles	Research Associate	9-21-61	9-1-62	Unknown	
Eric Thorbecke	Growth Economist	1-21-63	3-2-63	Distinguished Professor	Cornell University
Fred L. Mann	Law Advisor	1-21-63	3-2-63	International Program	University of Missouri
Karl A. Fox	Head, Depart. of Economics	1-26-63	3-2-63	Distinguished Professor	Iowa State University
Samuel M. Fahr	Law Advisor	5-3-63	8-20-63	Professor	University of Iowa
Lee Koimer	Marketing Economist	6-10-63	9-4-63	Dean, College of Agric.	Iowa State University
John F. Timmons	Program Director	2-11-64	3-9-64	Distinguished Professor	Iowa State University
		2-22-65	3-6-65		
		2-20-66	3-8-66		
		2-15-67	3-5-67		
		2-20-69	3-6-69		
		2-18-70	3-8-70		
		2-23-71	3-9-71		
		2-25-72	3-10-72		
		2-18-73	3-6-73		
		2-21-75	3-7-75		
		2-20-77	3-5-77		
J. K. Sengupta	Economist	2-11-64	3-9-64	Professor	University of Bombay
Lehman B. Fletcher	Agricultural Marketing	3-7-64	5-25-64	Professor	Iowa State University
James Prescott	Programming Specialist	6-2-64	9-29-64	Professor	Iowa State University

Raymond R. Beneke	Production Economist	6-14-64	9-29-64	Chairman, Economics Dept.	Iowa State University
Samuel M. Fahr	Law Advisor	7-11-64	9-15-64	Professor	University of Iowa
Lehman B. Fletcher	Agricultural Marketing	3-7-65	5-25-65	Professor	Iowa State University
Donald Kaldor	Agricultural Economist	5-1-65	6-27-65	Professor (deceased)	Iowa State University
Donald Winkelman	Economist	5-14-65	8-7-65	Head Economist, CIMMYT	Ford Foundation
Samuel M. Fahr	Law Advisor	5-30-65	8-7-65	Professor	University of Iowa
Raymond R. Beneke	Farm Management	6-3-65	8-6-65	Chairman, Economics Dept.	Iowa State University
Erik Thorbecke	Growth Economist	7-2-65	8-27-65	Distinguished Professor	Cornell University
Enrique Vignes	Agricultural Economist	1-20-66	8-15-66		IIAS
Samuel M. Fahr	Law Advisor	6-9-67	8-8-67	Professor	University of Iowa
James Christian	Economist	6-10-67	8-20-67	Professor	
Wayne Fuller	Statistical Advisor	6-15-68	7-15-68	Professor	Iowa State University
William C. Merrill	Marketing Economist	7-16-68	8-31-68	Professor	Iowa State University
Floyd Andre	Dean, College of Agric.	6-15-68	6-30-68	(deceased)	Iowa State University
Lee Kolmer	Dean, College of Agric.	1976	1976	Dean, College of Agric.	Iowa State University
J. T. Scott	Coordinator of International Agric. Programs	1976	1976	Coordinator of International Agric. Programs	Iowa State University

LONG-TERM ADVISORS

Name	Title	Arrival	Departure	Current Position	
Herbert B. Howell*	Chief of Party	11-20-62	5-30-64	Retired	Iowa State University
Fred L. Mann*	Law Advisor	4-25-63	7-31-66	Associate Director of International Programs	University of Missouri
	Legal & Economic Advisor	8-1-66	7-31-67		
	Chief of Party	8-1-67	8-31-71		
David W. Brown*	Agricultural Economist	5-1-63	4-30-64	Professor	University of Tennessee
	Chief of Party	5-1-64	4-30-65		
Melvin G. Blase	National Research Economist	7-11-63	7-10-65	Professor	University of Missouri
Dean Schreiner	National Research Economist	9-4-63	9-3-65	Professor	Oklahoma State University
Apostolos Condos	Growth Economist	9-11-63	9-10-65		
Erik Thorbecke	Growth Economist	9-15-63	9-15-64	Distinguished Professor	Cornell University
Rene Vandendries	Growth Economist	12-16-63	12-15-65	Economist	World Bank
Alfred Field	Growth Economist	9-15-63	12-15-65	Professor	University of N. Carolina
Henry Vignes	Agricultural Economist	2-18-63	12-17-64	Economist	IICA
	Agrarian Reform Advisor	12-18-64	12-17-65		
J. T. Scott*	Chief of Party	4-18-64	4-18-65	International Ag. Programs	Iowa State University
Eugene Brady	Growth Economist	6-8-64	12-7-65	Professor	Indiana University
Thyrele Robertson	Marketing Economist	12-2-64	11-7-68	Economist	USDA

*Served as Chief of Party in Peru.

Hylke Van de Wetering*	Agricultural Economist Chief of Party	3-3-65 7-1-71	8-31-66 1-15-73	Professor	Iowa State University
Ronald Tinnermeier	Agricultural Economist	3-8-65	3-10-67	Professor	Colorado State University
William C. Merrill	Marketing Economist	6-1-65	12-1-66	Professor	Iowa State University
Dale B. Furnish	Law Advisor	9-2-65	7-12-68		
Geoffrey Shepherd	Marketing Economist	9-30-65	6-15-69	Retired	Iowa State University
Robert Van Sloten	Growth Economist	11-11-65	8-15-68	Professor	University of Reading
Lon Cesal	Production Economist	6-3-66	7-31-68	Chief, Ag. Development Branch, International Economic Division	ESCS-USDA
C. Phillip Baumel*	Chief of Party	10-16-66	6-30-68	Professor	Iowa State University
Stephen McGaughey	Growth Economist	1966	1968	Head, Economics Analysis Group	Inter-American Development Bank
Samuel M. Fshr*	Chief of Party	1968	1971	Professor	University of Iowa
Eric S. Graber	Marketing Economist	1971	1974		
James Seagraves	Agricultural Economist	10-19-73	7-30-75	Professor	N. Carolina State Univ.
Randall Hoffmann*	Production Economist	1-15-74	12-15-75	Adjunct Professor	Iowa State University
Tomas Mulleady*	Production Economist	2-24-74	6-1-77	Adjunct Professor	Iowa State University
Barry Arnold	Statistician	7-15-74	8-30-76	Professor	Iowa State University
Frederick S. Hopkins*	Forestry Economist	2-20-75	10-15-76	Professor	Iowa State University
Stephen Sosnick	Marketing Economist	1975	1976	Professor	U. of California—Davis

APPENDIX D. UNIVERSITY STAFF GUIDE

Beginning in 1961, the sets of instructions and suggestions were prepared and provided each candidate for positions in the Iowa-Peru Program serving in Peru. These instructions were revised periodically in light of staff experiences and changing enclosures. The final revision was made in October, 1974, in connection with final staff

recruitment and preparation for participation in the Program.

These updated instructions proved valuable to staff members and their families moving to Peru. Perhaps they might be useful, with appropriate revisions, as checklists to other institutions in preparing staff members for foreign countries.

AID Contract Ia-C-1069(Peru)
Iowa State University-Peru
October, 1974

INSTRUCTIONS FOR STAFF MEMBERS GOING TO PERU

These instructions and attachments have been designed to assist you in making preparations for assignment to the Peru staff. Those items which are required have been marked with an asterisk (*). Other items are primarily for your own information. You are assumed to have knowledge of all information contained herein. With these instructions you should receive:

- Attachment 1 - Summary of Contract Allowances
- Attachment 2 - Preparation for Transfer and Storage of Goods
- Attachment 3 - Preparation Check-off Sheet
- Attachment 4 - Shipping and storage allowances
- Attachment 5 - Importation of P.O.V. into Peru
- Attachment 6 - Summary of allowance Data for Lima, Peru

All staff members must be nominated by Iowa State University, and then cleared by AID in Washington, D.C. before they may participate under the contract. The following forms may be obtained from the International Programs Office, 115 Curtiss Hall, and then must be returned before nomination is made for staff positions.

FD 258 (Finger Print Form)	2 copies
Standard Form 171 (Personal Qualifications Statement)	3 copies
Standard Form 86 (Security Investigation Data) (For those needing security clearance)	6 copies
AID Form 1420-17 (Biographical Data Sheet)	3 copies

Once these forms are sent to Washinton, it will normally take about two months before clearance is received.

I. The following items are required and should be completed as soon as possible after nomination to a staff position.

* A. Passport and Visa - Passports should be obtained as early as possible. Photos for passports may be taken at the Photo Service in Room B-12 Morrill Hall. They may be billed directly to our account by prior arrangement. A passport application must be filed in person at Room 200, U.S. Court House in Des Moines, or in the Office of the clerk of any U.S. District Court. To complete each application you need:

1. Documentary evidence of United States Citizenship (usually a birth certificate)
2. Two photographs, identical, 2 1/2 x 2 1/2
3. Personal check or money order for \$10 plus \$2 in cash.

It will take about three weeks to receive the passport, so allow for the time involved. Application forms are available in the International Programs Office.

As soon as the passport is received, it may be brought to the International Programs Office, and it will be sent to receive an official visa for Peru. It will take about three weeks to obtain a visa after the indicated consulate has received authorization from the Peruvian Foreign Ministry. If you are a citizen of a country other than the United States, and your passport does not contain a visa allowing you to reside in Peru, the International Programs Office will coordinate the obtainment of the visa, if you desire.

The Peruvian Consulate may require a letter of good conduct from Local Chief of Police.

* B. Medical - The following inoculations, as recommended by your physician, may be taken before departure: smallpox, typhoid, tetanus, polio and yellow fever. The costs for these are paid by the contract. The typhoid shots require two weeks if you have not previously received them. The yellow fever shots can only be received in Des Moines. The shots are given by prior arrangement. For an appointment, call The Clinic in Des Moines, 283-4964. As these inoculations are received, they must be recorded on an International Certificate of Vaccination. Yellow fever shots may also be taken in

Lima, Peru, by arrangement through the Chief-of-Party. When you schedule the shots, keep in mind that some must be either simultaneous or time phased, that some must be given on a different day than others, and that some may not be given under certain health conditions: i.e. poison oak or other breaks in the skin.

In addition to the inoculations, you must obtain from your physician a complete physical examination and a certificate (forms are available from the International Programs Office) stating that you and each member of your family are physically able to spend the required period abroad. Cost for this will be reimbursed by the contract.

- * C. Reporting Expenses Under the Contract - Passport, photo, visa, inoculations, as well as physical examination fees (up to \$70 maximum per person) are all reimbursable under the contract. Receipts for all miscellaneous items must be attached.

II. The following items pertain to travel and transportation of goods:

A. Storage and Transfer of Autos and Household Goods - The shipment and storage of household goods are subject to the weight limitations currently set out in the Standardized United States Government Travel Regulations. (See attachment N^o 4). Transportation including packing and crating costs will be paid from the point of origin in the United States to port of duty and return for household goods, one automobile, and personal effects as noted in the following paragraph. Storage of the balance household goods will be paid, including packing costs. Autos may not be stored at project expense except in certain emergency situations.

You may make arrangements with the transfer and storage company of your choice. If your storage will be arranged with a company which is not in Ames or Iowa City, you should discuss these arrangements with the Coordinator.

As a general rule, household goods should arrive within two months after shipment. They should be shipped as "Unaccompanied Baggage" for customs clearance purposes. Clearances in Peru normally requires 2-3 weeks after final local clearance of the staff member by the Foreign Ministry.

Autos shipped must be U.S. manufactured, with a stated manufacturer's price at the point of manufacture not to exceed \$3,300 or \$3,500, excluding accessories and freight. Maximum factory price will depend on the Advisor's grade level. FRS-1 to FRS-2 equivalent \$3,500 and FRS-3 to FRS-6 equivalent \$3,300. No Cadillacs, Lincolns or Imperials may be shipped. It is recommended that a set of extra parts be purchases (spark, plugs, points, fan felts, windshields wipers, extra side-view mirror, air and oil filters, car wax, etc.). When shipping a personal car, hubcaps, windshield wipers, cigarette lighters, car tools, rubber mats, outside mirror, antenna and other small car accessories should be shipped with the household goods. These items are often lost at the docks in Callao. It is also recommended that a spare tire lock be purchased. Clearance of an imported car normally requires about 2 weeks after arrival in Callao.

* Peruvian Laws govern the importation and resale of autos.
A preliminary interpretation of recent laws is attached
for your guidance and choice of option.

* B. Unaccompanied Air Baggage (Personal Effects) - In addition to household goods, unaccompanied baggage, referred to as air freight, consisting of personal and/or household effects, may be shipped in accordance with Attachement N° 4. Inform your movers that boxes and crates, designated as "Unaccompanied baggage," must be clearly marked as such. Unaccompanied air baggage sent as air freight will arrive 3-4 weeks after shipment.

Household effects are usually sent by surface shipment. Shipment of all household goods by air freight may be considered, since the cost differential over surface freight may be negligible. Use the more economical or advantageous type of carrier. If air freight is used, however, the technician is responsible for this cost differential. Air freight can normally be obtained about 3 weeks after arrival in Peru.

* C. Shipping and Mailing Instructions:

Label all cartons, crates, etc. as follows:

Address

Your name (IOWA)
USAID/Peru
U.S. Embassy
Lima 1, Peru

Markings:

UNACCOMPANIED BAGGAGE

Your mailing address will be:

Your name
USAID/Peru
U.S. Embassy
Lima 1, Peru

For emergency telephone calls, you can be reached through the Iowa Mission Office: Lima telephone number 24-5147.

Be sure to inform the post office and publishers of your change of address.

D. Travel Arrangements - You may make your own airline reservations and bill the International Programs Office, 115 Curtiss Hall. Travel is to be made by tourist jet on a U.S. flag carrier by the most expeditious route. Other arrangements may be made, but per diem and reimbursement will be limited to the cost of tourist jet by the most expeditious route.

* E. ISU Travel authorization forms - Are to be made out and turned in at least four weeks before date of departure, if possible. If any days of annual leave or official stops are planned enroute, this information is to be included in detail on the travel authorization, along with departure and arrival dates.

It is requested that each staff member take the responsibility of notifying the Chief-of-Party of the time and flight

number of his arrival in Lima, so that he may be met at the airport.

The coordinator will inform the Chief-of-Party of the approximate date of arrival, but due to possible last-minute changes in flights, etc., it is necessary for each staff member to be responsible for this detail.

F. Baggage - You will be authorized to take with you up to 66 pounds of baggage per person which includes 22 pounds of excess baggage. For children under two years of age with no baggage allowance, the contract will pay for 50 pounds of accompanied baggage per child. Cost of excess baggage allowance will be refunded, if excess weight tickets are not provided prior to departure.

- * G. Emergency Instructions - Leave instructions with the International Programs Office regarding what to do in case of death or other emergency--including who to contact for settlement of affairs.

III. The following items are of special interest and information.

A. Salaries - Salaries are determined on the basis of current salary base and the salary of University staff members with similar rank, experience and responsibility. The base salary may be increased by up to ten percent for overseas incentive in certain cases. The gross salary can also be increased to compensate for loss of net income from professional services if this income is foregone as a result of going overseas. This compensation will be allowed to staff members who will be on duty at least one year in the cooperating country. In order to establish professional income foregone, the staff member is required to submit a notarized statement showing the amount of this type of income received during the 12-month period prior to the date of departure for the cooperating country, itemized to show each income source.

B. Vacation Policy - The regular University policy with regard to normal vacation applies. This states that professional staff members are eligible for vacation with pay after six months of employment. Vacation are to be taken on an annual basis without cumulation, but carryover of vacation earned in a previous fiscal year will be permitted until December 31.

Home leave is 30 calendar days of paid rest and recuperation in the U.S. for yourself and your dependents. Home leave is granted only to personnel after two years of service, if the staff member will return to Peru for an additional two years (or one year in special cases) and if they have not spend more than 30 days leave time in the U.S. during the first two years.

C. Income Taxes - Staff members who are U.S. citizens may be eligible for an exemption from Federal Income Taxes on salaries earned while overseas for a period of 18 months or more. Application for this exemption is to be made at the time of eligibility; however, withholding may be discontinued by submitting Form 2555, obtained from the International Programs Office. Peruvian income taxes do not apply.

D. Business Affairs - While you are overseas, some individual or institution should be authorized to take care of your business affairs here at home. A bank can be given whole or partial "power of attorney" and if you maintain an account, you can have bills sent there for payment. It would be a good idea to gather together all documents which would be needed in case of death, and put them in your safe deposit box or similar secure place, leaving a key with some authorized person here.

E. Banking - Salary is normally paid by ISU directly to your bank here at home. Checks drawn upon your Ames Bank account may be cashed at the Embassy or the AID offices in Lima.

The quarters allowances is paid monthly in advance in soles in Peru. The technician is expected to retain rent, utility, garbage collection and educational bills to justify the allowances received.

Temporary lodging expenses will be paid in soles in Peru.

Educational costs are paid directly to the Colegio Roosevelt by the Administrative Services Office for Institutional Contracts (S.A.C.I.).

Wives and other dependents are not usually authorized to cash checks at the Embassy or AID offices. Under special circumstances, and upon proper execution of an appropriate Power of Attorney, wives may be permitted to cash checks at the AID office. Forms are available locally.

F. Insurance - Contact your insurance agents regarding the types of insurance you will need. In-transit insurance can be obtained from the transfer company or from a private agency. Some policies combine in-transit insurance with all risk coverage for household effects and autos while in Peru at greatly reduced prices. No insurance costs of this type are reimbursable under the contract.

You are required to obtain third party liability insurance on your auto while it is in Peru, even though it is not reimbursable under the contract. Third-party liability insurance must be obtained from a Peruvian Company prior to its removal from customs. Auto insurance rates can be considerably reduced if you will obtain a letter from your auto insurance agent stating that you have not had an insurable loss during the past three to five years (providing you have not).

G. International Driver's License - An application for this license may be made with the Motor Club of Iowa, 2050 Grand Avenue, Des Moines, Iowa 50310. Allow about three weeks for this. Bring your U.S. driver's license to Peru, since it will speed up the process of obtaining a Peruvian Driver's license which is also required. No children under 18 are permitted to drive in Peru.

H. Automobiles - Recent Peruvian Laws place severe restrictions on the importation and resale of autos in Peru. You should read the attached circular very carefully and select the option which most closely fits your needs.

Autos may be purchased in the U.S. from local dealers or directly from the factory. Cars purchased from the factory are usually "export models" specially equipped for Latin America. However, export models may not have all pollution control and safety devices and therefore could not be re-imported into the United States. Factory orders often require from 2 to 4 months or longer for delivery to the port depending on strikes, model change-overs, etc.

Address for the export divisions of U.S. car manufacturers are as follows:

General Motor Corporation

Chevrolet Division (Mr. C.L. Michael)
General Motor Building
Detroit, Michigan 48202

Chrysler Corporation

Export-Import Division
Wyoming Plant
P.O. Box 1688
Detroit, Michigan 48231

American Motors Corporation

International Sales Department
14250 Plymouth Road
Detroit, Michigan 48232

Ford Motor Company

Customer Service Division
P.O. Box 1805
Dearborn, Michigan 48121

Attention: Import-Export
Division

The Certificate of Title or Manufacturer's Statement of Origin of the car shipped will be needed in Peru. The following documents are presently required for processing the entrance of a car into Peru. These should be obtained and forwarded by your Dispatch Agent.

(1) Original of shipping company's Bill of Lading; (2) Commercial Invoice approved by Peruvian Consulate at port of Embarcation; and (3) Consular Invoice from Peruvian Consulate at P.O.E.

The Commercial Invoice and Consular Invoice must be obtained by the shipping company before the car can be shipped from the port. You should bring with you, and provide a copy to your shipper, the original or a copy of your Purchase Invoice from the manufacturer or local dealer.

New autos purchased in Peru presently cost about \$4000 for a Volkswagen, \$4700 for a Datsun, \$5000 for a Toyota, and up to \$9-10000 for a Dodge. These prices are for cash purchases and include local taxes. Prices are readjusted upward about every six months.

* I. Personnel Office - A few days before departure, check with the Personnel Office, Room 16 Beardshear, to make sure that all banking, insurance, annuity and other data are up to date. You may wish to have your earnings statements sent to the International Programs Office for forwarding.

J. Spanish Language Training - Spanish training may be offered at Ames, in Washinton, D.C., or in Peru. The nature, duration and location of fulltime language training will be determined by the Project Director and Chief-of-Party, based on the needs of the particular situation of each staff member.

K. Temporary Lodging in Lima - Each technician and dependent will be entitled to a temporary lodging allowance. Payments for temporary lodging may be made for up to three months upon arrival and for one month before departure from post. Lodging options in Lima are as follows:

- (1) Furnished Embassy apartment with two or three bedrooms, dinning room kitchen and utility quarters. Reservations should be made in advance, since the 4 available apartments are often filled.
- (2) Pension - Often includes board as well as room, but meals cannot be charged to temporary lodging allowance.
- (3) Hotel - Most are locating near major shopping areas and public transportation facilities such as buses, colectivos, or taxis.

L. Supplementary Post Allowance - Each technician and dependent may be entitled to a supplementary allowance during the

time they are occupying temporary lodging. (Supplementary Post Allowance, Revision of Subchapter 230 and Section 941.6 Standardized Regulations, effective August 27, 1974). See Attachment N° 6.

NOTE: ALLOWANCES AND OTHER REGULATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

ATTACHMENT I

SUMMARY OF CONTRACT ALLOWANCES

The authority of this summary of contract allowances is the "Standardized U.S. Government Civilian Allowance Regulations (Foreign Areas)". These allowances are subject to change, but the following are currently in effect:

1. Per diem Rates (for travel status)

a. International Air Travel	
persons 11 years of age and older	\$ 6.00
persons under 11 years of age	\$ 3.00
b. In U.S. on consultation, staff member	\$25.00
c. In Lima	\$34.00
d. Outside Lima	\$20.00

Calculations are made on quarter-day basis

2. Maximum Temporary Lodging Allowance

Temporary housing costs are payable for up to three months after arrival and up to one month prior to departure from post. Payments are made subject to presentation of receipts and for lodging only, no payments for food are allowed under this category. Maximum allowance for temporary lodging is as follows:

Person 11 years of age and over	\$14.00
Person under 11 years of age	\$ 7.00

3. Supplementary Post Allowance

A supplementary post allowance has recently been authorized for Lima.

This allowance may be paid during the period a staff member is in a temporary lodging status. Payments of up to \$6.00 per day may be paid for each staff member and adult dependent. Dependents 11 years of age and under may receive \$5.00 per day (see attachment N° 6).

4. Maximum Quarters Allowances

Equivalent Rank	Allowance with Family	Without Family
<u>Group II, FSR 1-3</u>	<u>\$4,900.00</u>	<u>\$4,400.00</u>
<u>Group III, FSR 4-6</u>	<u>\$4,800.00</u>	<u>\$3,300.00</u>

An employee with more than one member of family at the post is eligible to receive the above allowance plus the applicable amount shown below:

<u>Members of Family (Excluding the employee)</u>	<u>Additional Amount of Living Quarters Allowance</u>
2-3	\$200.00
4-5	\$400.00
6 or more	\$600.00

The above maximum is for reimbursement for receipted rent, utilities and other expenditures. Quarters allowance will be estimated when the staff member obtains housing, and the estimated payments will be made monthly. Periodically, during his tour, the staff member must present receipts for all expenses to the Chief-of-Party, except for an allowance of \$400 per year, and any necessary adjustments will be made in total allowances paid. Payments may not exceed the maximum amounts established for each group. Housing rentals are expensive in Lima, and staff members may have to pay up to \$100 per month out-of-pocket to obtain satisfactory quarters.

5. Education Allowance

Education expenses are paid directly to Colegio Roosevelt

from local support funds of the Administrative Services Office. Payments provide for tuition and related costs and presently cover tuition and transportation costs of the Colegio Roosevelt. Payments are not presently authorized for educational costs at other schools. School uniforms must be purchased and are considered a personal expense not reimbursable under this allowance.

6. Transfer and Storage

Current allowances for shipping and storage of household effects and unaccompanied baggage are summarized in attachment 4.

7. Basic Furniture

This is a furnished post. The following furniture is provided by USAID under the contract, as available.

Living Room

Sofa	Bookcase-cabinet	Desk and Chair
Arm Chairs	Coffee Table	Floor & Table lamps
End Tables	Lounge Chairs	Rug

Dining Room

Table, extention China cabinet	Buffet Chairs	Rug
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Bedrooms

* Bed and Mat- tresses (Double or Twin)	Lamp	Mirror, wall
Dresser	Chair	Rugs (for up to three bedrooms)

Kitchen

Electric Refrigerator
(with freezer section)

Electric Range

Miscellaneous

Automatic Washer
(without wash and wear
cycle)
Transformers
Dehumidifier

Gas and/or electric space
heaters

Clothes Dryer

AID electricians install and maintain all AID-provided electr
tric appliances and fixtures.

Servant's furniture is not provided.

Most beds are standard length.

The size of an employee's family and the anticipated repre-
sentational requirements consistent with the employee's of-
ficial position will determine the quantities of the above
items that are furnished.

From the foregoing, a new employee should be able to deter-
mine what is essential additional furniture and household
accessories requirements will be for this post. Suggested
items are:

- | | |
|------------------------------------------------------|--------------------------------------|
| * Radio - AM/FM/SW | Camera Film |
| Small Tools | 2 padlocks per child(school lockers) |
| ***Drape & Curtain materials
(allowance of \$200) | Pictures |
| Cosmetics and Drugs | Card Table with folding chairs |
| Slide Projector | Children's Equipment & Clothing |
| Sewing Machine | Extension Cords (heavy duty) |
| Blankets (some electric) | Games and Toys |
| Record player, records, need <u>l</u>
<u>es</u> | Blender |
| Pillows | Queen/King size beds |
| Christmas decorations &
wrappings | |

Dishes	**Television (B&W or color)
Floor polisher	Barbecue & charcoal
Vacuum cleaner	Clocks
Kitchenware, drainboards, floor mats, and lawn furniture.	Freezer
Bed spreads	Garden Tools, hoses, sprinklers for those desiring houses.

* Armed Forces Radio can be received on good quality multi-band radios (19, 25 and 49 m bands) -- news, sports and music. Local radios broadcast on AM, FM, AM/FM Stereo and short wave bands.

** Local programs are in Black and White. Special event programs arriving Via Satellite are often in Color.

***Received upon approval by USAID and after presenting receipts. Returnees say that \$200 does not buy much in the way of curtains in Peru -- 2 large windows or possibly 3 small windows. Advisable to bring material for drape making here in Peru. Peruvian windows may be different sizes and lengths than U.S.

Clothing:

Temperatures range from highs in the upper 80°s to lows in the lower 50°s. For women, sweaters and slacks suits are very practical. Slacks or casual dresses are worn during the day; long dresses at night. For men, double or single knit slacks are comfortable. Multi-season suits (spring and fall) are appropriate from April thru November; light weight slacks and sport shirts for December thru April.

Electric current in Peru is 220 volt., 60 cycles. Wall sockets accept flat or small (not european) round plugs. Small 220 volt. appliances can be bought from Alta 220 Export Co., 870 Market St., Suite 709, San Francisco, California. Note that transformers of up to 1500 watts are furnished by AID.

NOTE: Local prices for clothing, bedding, kitchen utensils, tools, appliances, hangers, waste baskets, etc. are about 3 times U.S. prices. If you have a doubt about an item bring it, if you have weight allowance left over or wish to pay the extra shipping expenses. One can usually recover cost of items upon departure.

ATTACHMENT 2

Preparation for Transfer and Storage of Goods

The following instructions will assist you in preparing for the arrival of the transfer company or forwarding agent. Your company may want to take one day for packing, one day for moving household goods, and one day for moving out storage goods. A good portion of your time during your last weeks here will be taken up by transfer and storage arrangements. Be sure that you have a plan for orderly packing and storage of your household items.

AIR FREIGHT

You are going to be "camping" for a matter of several weeks when you arrive in Peru and before your surface freight arrives, so select your air freight items on this basis. Plan to select your air freight first so any overweight can be corrected and added to surface freight portions of your shipment. Take a few dishes, enough pots and pans for basic cooking, some linens, an iron, additional seasonal clothing, small electrical appliances, cosmetics, medicines and small kitchen items such as measuring spoons, mixing bowls, can-openers, refrigerator containers, needlework, cards, books, etc. If you are in doubt about possible overweight on these items, set them in boxes and weight the boxes on your bathroom scales. Weight for airfreight is calculated as gross weight and will include the weight of the container which is required for shipments made to ports outside of the U.S. Crating will consume roughly thirty percent of your weight allowance. You may secure boxes and inventory forms for insurance purposes from the transfer company. All items will be waterproofed, repacked and banded at the warehouse for safe shipment, so you will not have to pack them for transit. Some individuals may prefer home packing to avoid theft and other losses.

Note: A survival kit is available from AID and include basic kitchen utensils, flatware, dishes, and bedding for use until your shipments arrive. However, these items should be included in your airfreight.

In arriving at insurance valuation, use inventory sheets and lump items in general classification such as, "Six sheets - \$24.00". If you are setting items in boxes as you sort them, it is smart to use a marking pencil and mark each carton "Air" and the weight. This saves confusion when there are a number of cartons together in one place.

Air freight will arrive at your destination in approximately 2-3 weeks from the date of dispatch, but may not be cleared through customs for several days thereafter.

SURFACE FREIGHT

Personal effects and specific items of furniture not furnished at your destination will be included in surface freight. It should be shipped as "unaccompanied baggage". Please use inventory sheets from the Transfer Company in listing your items and arriving at a valuation for insurance purposes. It is not necessary to list each specific item. Use general categories and arrive at a total value for the shipment. As with air freight, these items will be water proofed, packed and banded at the warehouse, but weight will be calculated on a net basis which does not include weight of overseas crates. Some individuals may prefer packing in the home to avoid theft and other losses at the warehouse. Net does include boxes and packing materials. Glassware is usually packed at your residence in order that it may travel safely direct from the origin point. If you order special electrical appliances for shipment with surface freight, be sure they are ordered well in advance so their pending arrival will not hold up the transfer of your entire shipment. You may have such items sent freight or express collect to some transfer companies. The transfer company will pay the freight charges and include the items in your shipment. They will bill you later on these charges and insurance charges, which are not part of the project's obligation.

STORAGE

Remaining furniture and other items not shipped to your overseas destination may be placed in storage at the origin warehouse. Small items will be packed as for transit.

Mattresses and box spring will be stored in cartons. Your rugs be rolled and placed in rug cartons. Small items of furniture will be wrapped and placed in large wooden storage crates. It is advisable to have a complete inventory of items left for storage.

You must carry your own fire and extended coverage insurance on goods in the warehouse. The warehouse is only required to insure against "normal storage hazards" such as handling damage, theft, etc. The warehouse is not responsible for damage from fire, wind, and other natural hazards. Arrive at a good approximate total valuation and then have your present household insurance policy changed to included this storage portion. If this is not possible through your present company, the transfer company can arrange this insurance for you.

Your transfer company will be happy to work with you at all times on your own special questions. Feel free to call them at any time. It's easier for everyone if you don't wait for a question to become a problem.

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UNIFORM STATE/AID/USIA FOREIGN SERVICE TRAVEL REGULATIONS

147 Baggage

147.1 Excess Personal Baggage

The amount of baggage carried at no charge by transportation companies when it accompanies the traveler varies according to the mode of transportation. Any baggage above these limitations is excess baggage. Travel authorizations may specify a maximum excess baggage allowance. Charges for excess baggage not specifically included in the travel authorization may be approved by an authorizing officer upon justification by the traveler.

When less than first-class air accommodations are used, excess baggage is hereby authorized in an amount to bring the total to that carried free on first-class service. When a journey begins or terminates outside the continental United States and an airline will not carry without charge 66 pounds (30 kilograms) of accompanying baggage, excess baggage is hereby authorized in the amount required to bring the total weight to 66 pounds for each authorized traveler. Excess baggage is not authorized at Government expense for rest and recuperation travel, family visitation travel, or emergency visitation travel. For medical travel, see 3 FAM 686.4-5.

When practical, authorized excess baggage should be shipped as freight and may be added to the allowance authorized in section 147.2.

147.2 Unaccompanied Baggage

a. An unaccompanied baggage allowance for employees and their dependents authorized to travel is granted according to the following schedule unless otherwise prohibited by regulation:

Gross Weight

First person traveling	250 pounds
Second person traveling	200 pounds
Third person traveling	150 pounds
Fourth and other persons traveling	100 pounds each

b. The unaccompanied baggage allowance is in addition to the household effects allowance shown in section 162.2. Unaccompanied baggage may be shipped as air freight by the most direct route between authorized points of origin and destination, regardless of the modes of travel used.

c. Unaccompanied baggage is considered to be those personal belongings needed by the traveler while en route or immediately upon arrival at destination. It is, therefore, intended that transportation of unaccompanied baggage shall be initiated promptly, preferably in advance of the traveler's departure.

d. Unaccompanied baggage is not authorized for TDY travel unless specifically authorized in the travel authorization or when such TDY travel is in conjunction with travel on direct transfer, home leave, and/or home leave and transfer, in which case unaccompanied baggage may be shipped between points specified in such authorization.

**147.3 Shipment of a Layette

A separate and distinct airfreight allowance for the shipment of a layette may be authorized in an amount not to exceed 160 pounds gross weight for a dependent child born at a post where American or other suitable layettes are unavailable locally and must be obtained in the United States or elsewhere.

A layette, for the purposes of this allowance, shall be considered to consist of clothing, blankets, and other items of equipment and furnishings directly related to the care and feeding of an infant (for example, crib, baby chair, playpen, etc.). Foodstuffs, with the exception of milk, formula, and commercial baby food, may not be shipped under this allowance.

Air shipment may commence before, but should commence no later than 45 days after, the birth of the child. The time limitations specified in section 142.2 are not applicable to this allowance. On subsequent travel involving authorization for transportation of airfreight, the family and new child will receive allowances as set forth in section 147.2.

(**) New Material

A.I.D. MANJAL ORDER	TRANS. LETTER NO. 5:478	EFFECTIVE DATE April 29, 1974	PAGE NO. 46	NO. 560.2
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UNIFORM STATE/AID/USIA FOREIGN SERVICE TRAVEL REGULATIONS

162.2 Schedule of Shipping and Storage Allowances

The amounts under the heading "Combined Shipment and Storage," or a lesser amount, may be authorized. Within such amount authorized, only the "Limited Shipment" may be shipped when adequately furnished quarters are to be occupied, or the type of quarters is unknown. Storage of the balance may be authorized.

On return to the United States, an employee occupying quarters having Government-owned furnishings will be authorized the appropriate limited shipment allowance specified below, together with the net weight of effects in storage at Government expense.

Allowance Group	<u>Combined Shipment and Storage</u>		<u>Limited Shipment</u>	
	When Family Authorized to Travel ^{2/}	When No Family Authorized to Travel	When Family Authorized to Travel	When No Family Authorized to Travel
(Net weight in pounds)				
1. Chief of Mission ^{1/} Career Ambassador ^{1/}	16,000	12,000	12,000	9,000
2. Career Minister, Career Minister for Information USAIN Mission Director FSO/R, FSIO 1-3, FSS-1, FC 11-14	12,000	7,200	4,200	2,400
3. FSO/R, FSIO 4-6, FSS 2-5, FC 6-10	10,000	6,000	3,600	2,400
4. FSO/R, FSIO 7-8, FSS 6-8, FC 3-5	7,500	4,800	3,000	1,800
5. FSS 9-10, FC 1-2	5,000	3,000	1,800	1,200
Additional for each dependent over two in number	500	-----	150	-----

^{1/} Limited to chief of mission as defined in 22 U.S.C. 802(9), and career ambassador as defined in 22 U.S.C. 867.

^{2/} Also applied to temporary storage under section 175.2, paragraphs b and c.

ADMINISTRATIVE CIRCULAR # 276

September 16, 1974

TO : All American Members of the U.S. Mission and Certain Third
Country Nationals Attached to U.S.A.I.D.

FROM : ADMIN - Roy C. Nelson *ca*

SUBJECT: Importation of Personally-owned Automotive Vehicles into PERU

As most of you are aware, Decree-Law 20724 significantly changes host government policy for the duty free importation of motor vehicles. Regulations based on the new law will be published by the Government within 40 days as interpreted by a commission comprising representatives from five ministries. In the meanwhile, as a result of consultations with officials of the Ministry of Foreign Affairs, it would appear that the following principles regarding the importation of automobiles into Peru by members of the Mission will obtain effective September 11, the date of publication of the new law:

1. Automotive vehicles already in Peru or those which have been ordered and/or shipped prior to September 11 may be disposed of in accordance with the old ground rules (i.e., sold after two years free of duty). Proof that cars in the "pipeline" have indeed been ordered prior to September 11 must be presented to the Ministry of Foreign Affairs by October 11, 1974. ALL PERSONNEL WITH CARS IN THE "PIPELINE" PRIOR TO SEPTEMBER 11 SHOULD PROVIDE THE EMBASSY GSO WITH EVIDENCE TO THIS EFFECT IMMEDIATELY.

2. Automotive vehicles not in the "pipeline" prior to September 11 and which are acquired by members of the staff after that date will be subject to the requirements of the new law. In practical terms, this will give personnel assigned to this Mission the following options:

a. Buy a car of local assembly (Dodge Coronet, Hillman Hunter, VW 1300, Datsun 1400, or Toyota Corona), including the payment of taxes, and apply for a rebate of the taxes. Applications for rebate must be filed within one year of the date of acquisition. This type of vehicle may be sold free of duty at the end of two years.

b. Buy a car abroad of the same make and model as those assembled in Peru and import it free of duty. The ownership of such a vehicle may be transferred in Peru free of duty only at the end of four years.

c. Bring into Peru any other type of vehicle and export it from Peru at the end of tour. The ownership of such a vehicle may be transferred within Peru only at the end of four years and then only with the full payment of duty.

d. Owners of vehicles described in paragraphs a and b above may sell them earlier by paying a prorated share of the duty if they are departing from Peru on official transfer.

3. An individual may own or import only one duty free vehicle at a time.

October 15, 1974

TO : All American Personnel of AFI Agencies
 FROM : ADMEN - Roy C. Nelson *RCN*
 SUBJECT: Summary of Allowance Data for Lima, Peru

- Temporary Lodging: \$14.00 per day for employees and each dependent 11 years of age or over.
 \$ 7.00 for dependents under 11 years of age.

Temporary lodging may be paid only during the period you actually occupy temporary quarters, or for the first 3 months at post, whichever is less. Temporary lodging is also payable for one month immediately preceding final departure from post or for the number of days temporary lodging is actually occupied, whichever is less. No allowances will be granted to personnel staying at government-furnished quarters.

2. Quarters Allowance

	Group 2	Group 3	Group 4	Group 5
With Family	\$4,900	\$4,800	\$4,500	\$3,000
Without Family	\$4,400	\$3,300	\$2,800	\$2,800
	<u>ECO-FCR</u>	<u>ES</u>	<u>CS</u>	<u>AID-P.C.</u>
Group 2	CM, 1-3	1	14-18	11-14
Group 3	4-6	2-5	10-13	7-10
Group 4	7-8	6-8	7-9	4-6
Group 5	-	9-10	1-6	1-3

An employee with more than one member of family at the post is eligible to receive the above allowance plus the applicable amount shown below:

<u>Members of family (excluding the employee)</u>	<u>Additional Amount of Living Quarters Allowance</u>
2-3	\$200.00
4-5	\$400.00
6 or more	\$600.00

- Post Allowance: (Cost-of-living allowance) - None
- Post Differential: None
- Supplementary Post: \$6.00 per day per adult and \$5.00 for dependent under 11 years of age while occupying hotel with no housekeeping facilities during period of temporary lodging (see 1 above). These are maximum rates, payable only to the extent necessary for employees faced with unusually heavy expenses of hotel or restaurant meals due to current unavailability of temporary quarters with housekeeping facilities.

6. Education Allowances:

<u>Grade</u>	<u>At Post</u>	<u>Away from Post</u>	<u>Home Study</u>	
			<u>Grades</u>	<u>Rate</u>
K-6	\$1,070	\$1,070	K-8	\$200
7-8	\$1,120	\$1,120	9-12	\$750
9-12	\$1,130	\$1,130		

These are yearly rates.

7. Foreign Transfer Allowance

This is an allowance for extraordinary, necessary and reasonable expenses incurred by an employee incident to establishing himself at any post of assignment in a foreign area. It is composed of two elements:

a. Miscellaneous Expenses

	<u>Employee Without Family</u>	<u>Employee With Family</u>
Without receipts or itemization of expenses	\$100.00	\$200.00

(Additional amount may be granted when receipts are submitted and expenses are itemized for total amount including above. See 241.2 and 942.3 of Standardized Regulations (Government Civilian, Foreign Areas).

b. Wardrobe Expenses:

Lima is a Zone 2 Post. Wardrobe expenses are paid only on transfer from posts classified as Zone 1 or Zone 3 posts. The rates (a flat sum) are as follows:

1. Employee without family \$ 75.00
2. Employee and one member of family \$125.00
3. Employee and more than one member of family \$175.00

8. Per Diem: \$34 per day in LIMA
 \$20 per day outside LIMA

ATTACHMENT 3

PREPARATION CHECK-OFF SHEET

- D-day minus two months - AID forms and nomination submitted to AID/Washington Apply for Passport and International Driver's License. Turn in passport for visa application.

- D-day minus one month - Obtain inoculations
Obtain physical examinations
Submit completed travel authorization
Request travel advanced, if desired
Notify Chief-of-Party as to the type of temporary housing required.

- D-day minus two weeks - Inform Coordinator of transfer company
Order Airlines tickets

- D-day minus one week - Submit emergency instructions
Make final check with personnel office.

APPENDIX E. BUDGET

CONTRACT BUDGETS

<u>Item</u>	<u>Contracts</u>					<u>Total</u> <u>Amounts</u>
	<u>ICAC-2226</u>	<u>AID 1a-49</u>	<u>AID 1a-592</u>		<u>AID 1a 1069</u>	
	<u>9/1/61- 6/30/62</u>	<u>10/2/62- 12/31/68</u>	<u>1/1/69- 12/31/71</u>	<u>1/1/71- 6/30/77</u>	<u>7/1/74- 6/30/77</u>	
1. Salaries	\$15,238	\$1,046,519	\$190,000	\$190,000	\$470,507	\$1,912,264
2. Allowances	0	176,431	33,000	33,000	0	242,431
3. Transport-Travel	9,795	217,651	49,000	49,000	89,712	415,158
4. Equipment	200	73,360	7,000	7,000	1,300	88,860
5. Parcipetant	0	241,258	50,000	50,000	0	341,258
6. Other direct	1,632	208,445	86,000	86,000	91,948	474,025
7. Overhead	4,457	407,668	85,000	85,000	141,267	723,392
Totals	\$31,322	\$2,371,332	\$500,000	\$500,000	\$794,734	\$4,197,388