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211d Annual Report for 1974-75

on

USAID 211d Grant CSD-2824
and Amendment of 2/26/73

to

Iowa State University
Department of Economics
1974-75

September 29, 1975
(Amended)

211d Annual Report for 1974-75
Grant AID-CSD-2824

Date due: September 1, 1975
Date: September 29, 1975

Grant Title: To Strengthen the University's Competence in the Economics of Agricultural Development for the Less Developed Countries

Grantee: Iowa State University, Department of Economics

Coordinator: John F. Timmons, Chairman
211d Committee

AID Sponsoring Technical Office: Technical Assistance Bureau

AID Monitor: Al Harding

A.1 STATISTICAL SUMMARY:

Period of original Grant: July 1, 1970 to September 30, 1976 as extended by Amendment No. 3, executed June 27, 1975

Amount of Grant: $495,000 as amended

Amount of Amended Grant 2/26/73: $400,000 for Thailand

Expenditures for Report Year 1974-75: $132,569.17 for original grant

Expenditures for Report Year 1974-75: $64,151.70 for Thai Amendment

Accumulated Expenditures for July 1, 1970-June 30, 1975: $338,954.41

Accumulated Expenditures Feb. 26, 1973-June 30, 1975: $90,575.91 for Thai Amendment

Anticipated Expenditures for July 1, 1975-June 30, 1976: $120,265.00

Anticipated Expenditures for July 1, 1976-September 30, 1976: $35,780.59

Anticipated Expenditures for 2/26/73 Amendment Emphasizing Thailand
July 1, 1975-June 30, 1976: $78,788.00
July 1, 1976-June 30, 1977: $115,318.55
July 1, 1977-June 30, 1978: $115,317.54
(The Thai Amendment Grant has been shifted to the Southeast Asia Bureau and extended, the same funds to June 30, 1978, to conform with the sector planning project in Thailand.)

B. NARRATIVE SUMMARY

1a. Principle Accomplishments During This Period of Grant, July 1, 1974-June 30, 1975 for the original Grant

Following the original grant, an amendment was made on February 26, 1973 which placed special emphasis on sector analysis work in Thailand. Hence, principle accomplishments are listed under 1a for the original grant and under 1b for the amendment which emphasizes Thailand.

During the reporting period, emphasis has been placed on establishing linkages with appropriate entities within the developing countries in order to direct or redirect research toward problems demanding answers within the less developed countries. This process has included participation of the linkage entities in the selection and conduct of research studies on priority problems within selected less developed countries. Also, such participation helps assure that results of research will be used in these countries in their agricultural planning and policies. Furthermore, such participation greatly facilitates cooperation in locating and generating data needs for research within the country. The 21ld research assistants working with I.S.U. staff members accomplish four closely allied purposes: (1) perform research on important agricultural problems limiting productivity within the countries, (2) enable students and staff to become better informed on these problems and their solutions in assisting the countries with the utilization of research findings, (3) provide training for students as future workers within these countries and (4) obtain professional recognition of their research in M.S. and Ph.D. degrees.

During the reporting period, the following linkages have been established.

A native of Guyana with I.S.U. staff assistance is working with the Ministry of National Development Hydraulics Division of Guyana in analyzing beneficial and detrimental effects of water on crops and means for undertaking irrigation and drainage activities in a complementary manner.

A native of Korea in cooperation with the Agricultural Research Institute and with representatives of the Michigan State University technical assistance project

in Korea, is working on the amount and quality of water required and used in increasing agricultural production.

A native of Nigeria is working with the International Institute of Tropical Agriculture and his University of Ife on the problem of mechanization of agriculture under conditions of abundant labor in increasing agricultural production.

A U.S. student has also worked out arrangements with the I.I.T.A. to perform research complementary to the work of the I.I.T.A. However, difficulties are being experienced in obtaining the necessary visa and clearances.

A native of Sri Lanka is working with the Central Bank in analyzing effects of various taxes on the agricultural sector's productivity as well as the allocation of public investment between the agricultural and non-agricultural sectors.

A native of Ethiopia is working with the Ministry of Agriculture on an agricultural production study of farming in a province of Ethiopia.

211d graduate is employed by Iranian Plan Organization, Division of International Trade and Foreign Investment Planning to study meat supply alternatives.

A native of Iran is working with the Division of Rural Development and Cooperatives, The Plan Organization, in studying problems and improvements in livestock marketing.

Assistance is being provided the Agricultural Research Administration, Ministry of Agriculture, in Iran on formulating research studies on livestock production and marketing.

The Royal Scientific Society of Jordan is providing office space, facilities for 211d research assistant and is interested in cooperating in the publication of research results.

Seminars presented in Tehran by I.S.U. staff member on results of 211d research provided AID-TAB with preliminary results of 211d study on wheat practices for the review and design of Oregon State University contract.

During the reporting year, after preliminary discussion, the AID Director of Peru has requested assistance for I.S.U. staff assistance in the agricultural sector analysis studies in Peru under the 211d Project. Under the agreement, a major staff member of OSPA will spend a year on campus obtaining staff assistance in support of the work approved by the Ministry of Agriculture and USAID-Peru. This Peruvian will receive support from the 211d Grant for his sustenance and computer analysis on campus. He will return to Peru four times under joint USAID-Peru and 211d financing to relay results of the research to his colleagues in OSPA engaged in agricultural planning.

Another Peruvian, a staff member of the National Agrarian University, is on campus for a year under the 211d Grant to obtain I.S.U. staff assistance in preparing research for use by the University in training students to participate in the agrarian reform program.

A U.S. national is completing research on identifying, selecting and adopting technologies appropriate for increasing agriculture and improving living levels of the peasants in the Peruvian Sierra. This work is being carried out in close cooperation with the World Service Development Branch of the Lutheran World Federation Project in the Huari region and with the government Sociedades Agricolas de Interes Social in the neighboring Uchupata region of Peru.

Several other students are in the process of forming linkages with entities within their respective countries as essential elements of the 211d program.

2. Principle accomplishments during life of grant.

Activities undertaken by I.S.U. in pursuing objectives of the 211d Grant have been detailed in the four annual reports issued by I.S.U. and summarized in the fourth annual report "Annual Report for USAID-211d Grant CSD-2824 to Iowa State University, 1973-74" issued August 1, 1974.

These activities respond to the 211d objectives by (1) shifting two man years net of faculty to agricultural development problems, (2) providing AID with ten man years of "talent sharing" faculty, (3) providing (a) 34 students from 16 countries with training and research experience in agricultural development resulting in 34 Masters and Ph.D. theses including (b) the 18 students from 12 countries currently completing research and theses in agricultural development under 211d support, (4) publishing 16 results of studies completed with four publications now in process (current studies promise additional publications dealing with the understanding and solution of agricultural problems in less developed countries) and (5) providing seminars, workshops, program of study committees and related means whereby I.S.U. staff and students as well as staff from other universities, foundations and government agencies (both U.S. and foreign), have been brought together to discuss problems of agricultural development in less developed countries.

It seems likely that most of these I.S.U. activities concentrating on agricultural development in less developed countries would not have occurred without the stimulation and support provided by the 211d program. Most of the staff and students involved would have shifted to other areas of interests and support. This includes staff involvement, student training and research completed and underway.

Achievements of the program are being enhanced through building more substantial linkages with appropriate entities within the less developed countries in order (1) to obtain a more definitive articulation of high priority problems restraining agricultural development and (2) to encourage utilization of results of research and of training of nationals within less developed countries in the improved understanding and amelioration of their problems obstructing agricultural improvements. Also, more effective results and efficiencies of activities are being developed

through improved and informational exchanges with the other 211d Universities and AID's TAB, Regional Bureaus and Country Missions as well as with national entities within the less developed countries.

1b. Principle Accomplishments During This Period of Grant, July 1, 1974-June 30, 1975 for the Thai Amendment

The 211d Amendment proportion relating particularly to Thailand had both direct linkages to the sector planning work being conducted in Thailand and to related work in other countries. Major contribution was backup work and model development for the work under progress in Thailand. Because of institutional difficulties and complexities, it was not readily easy to obtain Thai data for processing and model development and application in the first two years of this grant. Hence, concentration was especially on the conceptual work underlying the models being developed and quantified in Thailand. These were then forwarded to Thailand for quantification and application in the DAE of the Ministry of Agriculture and Cooperatives. However, toward the end of the second year, the problem of data availability began to ease and several other quantitative research undertakings were initiated at Iowa State University. An increasing amount of work and data availability are projected for the future. This speed-up will facilitate the development of sector planning models and their application in policy choices and agricultural development in Thailand.

Initially in the period July 1, 1974 to June 30, 1975 it appeared that it might be impossible to go forward with the initial Thai sector programming contract with personnel in Thailand after its first two years due to (a) an impossible method of contracting between Thai institutions and Iowa State University (rather than between AID and Iowa State University directly) being suggested by USOM and (b) doubts in the acceptance of an extension of the sector planning project by USOM-Bangkok. Under these prospects, the 211d Amendment Program emphasizing

Thailand was held somewhat in check in order that its funds might be used to step in and rescue the contract work (i.e., complete some of the work initiated under contract) should the contract not be extended due to these complex conditions. However, after an external review of the project in Bangkok, the project was given extremely high ranking and was greatly commended due to its progress under complex conditions and the large amount of institution building and in-house training it had accomplished. While it had been held somewhat in check and abeyance for the reasons mentioned above, the 211d Amendment emphasizing Thailand was then turned to other emphases after the very positive review of the Thai project and the promise of a three-year extension for the contract underlying it.

Work did continue by personnel at Ames in conceptualizing the models being quantified by the personnel in Bangkok. Particular emphasis was given to the 19 zone national programming model being developed as the basic planning tool for Thai agricultural development and policies. (While there are 19 major zones making up the national model, each zone is composed of several soil groupings so that this model effectively represents an interregional model of around 60 areas of the nation.) Initially, the zone programming models were developed separately for each zone with the expectation of linking them into a national sector planning model at the completion of the 19 zone models. However, in the conceptualization stage, the same basic model was developed for each zone. Generally, they were based on four land restraints: paddy land suitable for only one crop of broadcast rice per year because of a high and unmanageable water supply, paddy land suitable for the production of either broadcast or transplant rice with opportunity for supplementary irrigation, paddy suitable for either broadcast or transplant rice with supplemental irrigation, and upland with inadequate water for paddy production. Other zonal and land class restraints were conceptualized on a monthly basis to consider interseasonal competition for resources and multiple-cropping possibilities.

Both labor and capital were treated in this manner. Crop activities, representing a range of varieties and technologies, were developed separately for each land group within a zone.

Similarly, under the 211d Grant Amendment, conceptual work for regional agricultural sector analysis was done. The procedure outlined was one of combining several zones into a larger regional entity with a projected three-stage development of regional development models including (a) the regional models based on current technology; (b) the regional models based on new agricultural technology with consideration of the processing, marketing, etc. facilities to conform with it; and (c) the addition of other agro-industries, nonfarm industries and general public services. Following this background work, three regional models were then empirically completed or initiated during the year. Since only crops were included in the first generation programming models, livestock activities will need to be added for the second stage of zonal and regional programming models. Hence, a small amount of work was completed on conceptualizing livestock activities with emphasis on buffalo units.

Backup work under the 211d Amendment emphasizing Thailand also related to demand analysis. Major policy choices require knowledge of demand relations for individual agricultural commodities. For example, the impacts of the current rice premium (tax on rice exports) will increase domestic rice supplies and reduce rice price to farmers if export demand is elastic while domestic demand is inelastic. However, due to data availability and limitations, a different statistical model must be developed for each commodity. During the year, emphasis was given to the commodities rice and kenaf. (In the first generation national programming models for the entire country, commodity demands by zones are represented as "point demands." In later models, with completion of 5-6 major demand functions, it is hoped that demand functions might be inserted directly in the programming models.)

A macro model of the Thai economy was initiated during the 1974-75 fiscal year. The model is being developed so that (a) it emphasizes agriculture to a relevant extent and (b) the "spillover" effect of national macro policies (export, employment, monetary and fiscal policies, etc.) can be traced to agricultural employment, income, etc. Hence, some conceptual work went into this phase.

Work was further initiated on a trade model incorporating Southeast Asian countries which either complement or compete with Thailand in the production, marketing and consumption of rice. This trade model was also encouraged since ASEAN countries also express interest and desire in initiating sector planning models such as now are being developed for Thailand. Finally, with emphasis on Thailand, initial exploration was begun on a "world food production and demand model" that would examine through recursive simulation future world food balances, with emphasis on the role of Thailand and Southeast Asia countries in the net import-export balances.

As supplementary sector planning models, examination was made of developing an interregional and national programming model of India. However, data and other problems eventually caused this project to become infeasible and impossible for completion. However, a large-scale model in water sector planning for the Mayurakski irrigation project was developed. This model should be of general use and applicable to investments in dams and the management of water thereafter. The model is based on hydrologic data for 29 years and considers water from both rainfall and dam storage. The model considers restraints (limited supplies) of land, seasonal labor, capital and water. It also considers a wide range of applicable crops and potential impacts of increased fertilizer prices. It takes into account the explicit recognition of the variable nature of the monthly inflow of water into the dam or reservoir and increased opportunity, therefore, in introduction of high-yielding varieties. The model not only develops optimum water allocation and cropping systems but also generates the extent of labor employment and unemployment

by seasons under different deployments of water, fertilizer resources and other alternatives in management of the reservoirs seasonal water supplies. In general, nitrogen supplies served to limit greater production of the most profitable crops that could increase rural employment. In addition to a deterministic programming model for evaluating allocation and management of water resources in the command area, a chance-constrained variant also was developed to consider seasonal and interyear variations in rainfall and water.

Finally, a planning model for the sugarcane subsector of the State of Sao Paulo in Brazil was developed. The model was based on a sample of 321 farms stratified by size and region to allow analysis of the different cropping technologies in use and the manner in which they affected farm income and labor employment. Three regions were sampled and farms were stratified into eight size groups in each. A time-sequenced programming model was then developed for a 12-year time span. The model was applied to representative farms of the regions. Various policies, including a free market and a quota system, were analyzed in terms of their effects on farm income and rural employment.

Other miscellaneous activities were undertaken under the 211d Amendment which emphasizes Thailand but considers developing countries generally. Special seminars were conducted for Thai graduate students from the Division of Agricultural Economics of the Ministry of Agriculture and Cooperatives. These seminars emphasized and illustrated, for Thai graduate students from the DAE, how the economic, statistical and other concepts thev were studying could and should be used in research upon their return to Thailand and their DAE positions. Special one-to-one instruction was given to Koset and Somporn over the year so that the former would be experienced and operable in large-scale national programming models and the latter in simulation and buffer stock models upon their return to Thailand. Also, an analytic framework was developed to be used in the 1975-76 fiscal year

by Dr. Charles Framingham upon his arrival in Bangkok to incorporate policy decision making procedures and constructs into the national programming model of Thailand. Procedures were worked out for (a) getting "readings" from policy makers on alternatives to be examined in the models, (b) explaining "tradeoffs" from different policy outcomes generated by the model, and (c) helping policy makers select optimal policies in terms of national objectives. Some work also was completed on the agendas for the two seminars held in Bangkok on the DAE sector planning work being completed cooperatively by DAE and ISU personnel. The two seminars were built largely (in case of the first) or entirely (in case of the second) around the ISU sector modeling work. The first seminar was held under the auspices of FAO for enhancement of knowledge of their personnel. The second seminar was sponsored by the Agricultural Development Council so that other Thai institutions (universities, NESDB, etc.) would better understand the ISU-DAE planning models and their use.

C. DETAILED REPORT

1. General Background and Description of Problem.

Iowa State University is recognized as one of the leading academic institutions involved in teaching, research and extension activities in the fields of agricultural economics and economic development. These activities are administered in the Department of Economics.

The Department of Economics at Iowa State University is jointly administered by the College of Agriculture and the College of Sciences and Humanities. The department has 50 full-time faculty members at the ranks of assistant professor and above.

The joint structure of the Department of Economics makes it particularly well adapted to research and graduate training which emphasize the interrelationships between agriculture and other sector of the economy in both industrialized and less developed countries. The major lines of research under this grant take advantage of this special capability.

The University's capacity in the field of agricultural development is further enhanced by the Center for Agricultural and Economic Development. The Center, which operates under the auspices of the College of Agriculture and the Economics Department, is involved in research work on problems of agricultural and economic development as they relate to both the U.S. and developing countries. The interdisciplinary research and graduate study program in law and economics in which the Department has participated in cooperation with the College of Law (University of Iowa) since 1952 provides foundations for analyzing institutions and needs for institutional change in less developed countries.

This capacity is further enhanced by the World Food Institute established in 1971 and funded by the Iowa Legislature and by grants and contracts with U.S. Agencies and Foundations. Currently, the Institute is sponsoring the World Food Conference to be held on the I.S.U. Campus, June 27 through July 1, 1976.

A considerable number of faculty members in the Department of Economics have had experience in agricultural and economic development research and consultation in other countries. They have gained their experience through participation in an AID-Iowa State University contract program in Peru (which began in 1963 and is continuing); in the AID-Iowa State University contract program in Thailand; in a recently completed contract program between the Ford Foundation and Iowa State University for strengthening the graduate training and research programs in agricultural economics at the National Agricultural School of Mexico; through direct hire assignments with the Harvard University Development Advisory Service and AID-Washington; and through a wide range of short-term consulting assignments for these and other organizations.

This accumulated experience and insight is a major resource in the department's research and graduate programs in agricultural economics and economic development.

Iowa ranks among the top two or three states in terms of total agricultural production and farm income. Iowa State University intends to maintain an outstanding program of research, teaching and extension activities of direct relevance to agriculture and the associated industries and to the problems of rural (nonmetropolitan) people and areas. These capabilities are complementary with those required for research and service contributions to the agricultural and related sectors of less developed countries. The administration of the University is strongly interested in expanding its contributions to economic growth and agricultural development in such countries to the extent that appropriate funding can be found.

The purpose of the grant is to increase the capability of Iowa State University in the economics of agricultural development of the less developed countries.

Funds provided under the grant are used to support activities within the framework of the following program outline which describes the overall scope of work for increasing the capabilities of selected universities participating in a joint program with AID.

To help finance high priority elements of a problem-oriented research program. The elements in this program will change over time as the economies of the developing countries evolve; initially it will include:

(a) Theoretical, methodological and selected empirical projects in sectoral analysis, with emphasis on the use of human and capital resources to increase institutional competence; on public policy alternatives in the area of prices, taxes and trade; and on intersectoral obstacles to increased rates of economic and social development. These studies take account of the potential effect of developments in the agricultural sector on factors such as total output, increased economic efficiency, income distribution, employment, balance of payments and price stability. Such studies also may need to give attention to possible developments in other sectors which may affect the agricultural sector through influencing factor or product markets, that is, the conditions under which labor, other inputs or products are transferred among sectors.

(b) Welfare and income redistribution projects in rural development. Emphasis will be placed on employment opportunities for natural and human resources in the rural area with particular attention to the disadvantaged rural tenant and small landowner; on the development of institutions able to produce and deliver essential services efficiently; and on the spatial distribution of employment and population.

In particular, implications of different sectoral growth patterns and technologies on output and employment are studied.

(c) Selected water and control problems with special emphasis on water resource use, including consideration of water as the principal factor determining regional specialization or comparative advantage, water distribution systems, systems of water rights, cost benefit analysis, repayment schedules related to productivity, and the interaction of legal, economic and political factors.

(d) Selected problems in the area of markets and trade, including problems of assembly, distribution and changes in product form; issues of economic feasibility, storage, price and transfer policies, farm size and structural alternatives for necessary capital accumulation.

(e) Selected economic policy problems related to the inducement, generation and diffusion of new technical knowledge and to the production and distribution of new industrial inputs by research and technical assistance institutions and by agricultural supply firms.

(f) The amended portion of the 211d Grant (February 26, 1973) allows the state to develop powerful but practical models, research and policies to be used by Thailand. In the words of an outside review team, this project is one of the most important sector analysis projects in operation in (a) its progress, starting from zero; (b) its actual modeling accomplishments now being used in Thailand policy and development plants, and (c) its institutional impact in developing capabilities of the DAE Thai staff members in the Ministry of Agriculture and Cooperatives so that they can carry forward as Iowa State University completes its sector contract and 211d Amendment. The 211d portion allows developing the background work for national linear programming models, macro models

illustrating the effect of national policies on agriculture and its income, regional rural development models and programs and market sector analysis.

To increase the quality and quantity of instruction in agricultural economics with an international orientation and development economics dealing with the interaction between agriculture and the rest of the economy. The grant provides support for assistantships and research associates from the U.S. and developing countries. The research component of the training program is linked to the high priority program and project areas identified above.

To increase the supply of economic talent directed at operational or problem -oriented agricultural development issues in developing countries. By increasing the capabilities of the University's agricultural and development economics faculty the grant enables the University to provide additional skilled personnel for short-and long-term assignments with AID. Such assignments give to participating faculty members first-hand experience with the problems of developing countries and thereby further increase their professional capability.

2. Purpose of the Grant

Grant AID/CSD-2824, in the initial amount of $375,000 was made to Iowa State University on June 24, 1970 (letter I.S.U. President W. Robert Parks from AID Administrator John A. Hannah).

The basic purpose of this grant as proposed by I.S.U. and as approved by AID was "to strengthen within the University, competence in the economics of agricultural development for the less developed countries, including staff support services for solution to the "problems" (p. 1, letter of 6-24-70 from AID Administrator Hannah to I.S.U. President Parks).

An amendment to the original grant was made on February 26, 1973. The purpose of this amendment was to develop research and sector programming models with special application (but not restricted to) Thailand. The basic concepts and some of the empirical work under this amendment are to be conducted by campus staff members in coordination with (a) ISU staff members stationed in Thailand and (b) professional counterparts in Thailand and other relevant countries.

Amendment No. 3 to the Grant (letter of 6-27-75 from Mr. V. C. Perelli to President W. Robert Parks) extended the funding and time of the Grant through 9-30-76. "The extension of time and additional funding is for the purpose of permitting your institution to utilize results from the research completed and nearly completed with the original grant through linkages formed with entities in the countries of Latin American, Africa, Asia and the Middle East. In addition, it will enable your staff to complete research studies underway and utilize the expected results of the research to the developing countries through and in cooperation with the linkages established in these countries through the conduct of the research."

3. Objectives of the Grant.

Objectives of the initial Grant Agreement "to increase the capability of Iowa State University in the economics of agricultural development in less developed countries" were detailed in terms of (1) creating a framework for agricultural economists to enhance effectiveness in applying economics to important agricultural

problems of developing countries, (2) increasing the competence of the University in analyzing agricultural development problems in less developed countries by providing a continuing arrangement for faculty members to conduct this research on campus and abroad and to carry on work in developing countries, (3) enabling the University to provide increased training in economic development and agricultural economics at the graduate level for students from the U.S. and the developing countries and (4) enabling faculty members to serve AID in capacities which will contribute to their professional skills and understanding of how to accelerate agricultural growth in less developed countries and deal with the practical problems involved in the process (summarized from pages 3 and 4 of initial Grant Agreement).

Based upon experiences in carrying out the program thus far and upon discussions during and following the October 1974 Review process, the objectives for continuation of the Program are restated as follows: (1) To identify high priority problems faced by less developed countries in improving their agricultural production, income distribution and employment of resources and to conduct studies on these problems which promise results of an improved understanding and solution of these problems; (2) To provide training for students from the developing countries and U.S. in the conduct of these studies; (3) To increase the capacity of the University staff to train students and perform research on agricultural problems in less developed countries through participation in the training and research processes; (4) To encourage utilization of the research results in improving agricultural development in less developed countries by staff and trained students; and (5) To strive for improved information and participating networks among and between the universities and AID.

Within recent months, the Iowa 211d program has moved toward these reoriented objectives with activities and procedures which are an integral part of the continuing program.

V. Accomplishments

In response to the purpose and objectives of the grant as restated earlier in this report, I.S.U. has (1) shifted and added two additional man years of faculty to agricultural development research and training, (2) provided training for 34 students from U.S. and 16 less developed countries in agricultural development, (3) published and prepared eighteen reports and theses on completed research, (4) provided ten man years of faculty to AID under the talent sharing provision, (5) met requests for technical assistance from the I.I.T.A. and Peru and (6) established linkages with 12 entities in 9 countries in connection with utilization phases of the research and training.

The 211d Grant has made these accomplishments possible.

In addition the 211d has helped attract and retain students from other countries in the areas of agricultural development of less developed countries.

Table V-1 summarizes the graduate student enrollment over the period of the 211d Grant for the Fall Quarter, annually, from 1970 through 1975, by total and foreign students. In Fall Quarter 1975, 68 of the 188 graduate students enrolled were from countries outside the United States. This number represents a drop in the proportion of foreign graduate students which underscores the importance of 211d in providing research opportunities for foreign as well as for domestic students.

Table V-1. Graduate Student Enrollment of Foreign and U.S. Students, Fall Quarters 1970-1975, Inclusive, I.S.U. Department of Economics

Years (Fall Quarters)	Total Enrollment (No.)	Foreign[1] Students Enrolled (No.)	Percentage Foreign Students (Percent)
1970	175	61	34.8
1971	168	63	37.5
1972	165	68	41.2
1973	161	69	42.8
1974	178	83	46.6
1975	188	68	35.1

[1]33 countries represented including Bangla-Desh, China, India, Indonesia, Korea, Malaysia, Pakistan, Sri Lanka, Tawain and Thailand in Asia; Brazil, Chile, Colombia, Guyana, Mexico, Peru and Trinidad in South and Central America; Cyprus, Egypt, Greece, Iran, Iraq, Israel, Jordan, Libya and Saudi Arabia in the Middle East and Mediterranean; and Ghana, Ethiopia and Nigeria in Africa.

Table V-2 shows the 18 students under the 211d Grant during reporting year. Also, countries of origin are shown. Altogether, during the Grant period 34 students from 16 countries have participated in the program. Also, 10 professors are teamed up with these current 18 students, constituting the resource teams, to carry out the research and utilization activities.

Table V-2. List of Students of 211d as of 7-1-74 through 6-30-75

Student	Country
1. Sisay Asefa	Ethiopia
2. Lizardo de las Casas	Peru
3. Bahram Dadgostar	Iran
4. Mario Delgado	U.S. (Cuba)
5. Hillary Deveaux	Bahamas
6. Enrique Donnadieu	Mexico
7. Julio Echevarria	Peru
8. M. Haithan El-Hurani	Jordon
9. Parviz Eshrati	Iran
10. Rodger Garner	U.S.
11. Farrokh Ghobadi	Iran
12. Murugasu Kulasingam	Ceylon
13. Mark Lund	U.S.
14. Ahmad Mojtahed	Iran
15. Lu S. Ng	Malaysia
16. Javad Pourmoghim	Iran
17. Jeong Rhee	Korea
18. Hiren Sarkar	India
19. Brent Spaulding	U.S.
20. Thomas Tiffany	U.S.
21. Sally Utley	U.S.
22. Ashton Veramallay	Guyana
23. Gary Vocke	U.S.
24. Wayne Yerby	U.S.

Titles and authors of the eighteen papers, theses and other reports are shown as follows:

211d Occasional Papers

1. Karl A. Fox, "Combining Economic and Non-Economic Objectives in Development Planning: Problems of Concept and Measurement," November, 1973.

2. Gunars Dambe and Erik Thorbecke, "Agricultural Productivity and Employment in Taiwan," February, 1974.

3. Gunars Dambe and Erik Thorbecke, "Agricultural Production and Employment in Colombia," February, 1974.

4. Gunars Dambe and Erik Thorbecke, "Agricultural Production and Employment in Ivory Coast," February, 1974.

5. Erik Thorbecke and Gunars Dambe, "Comparative Analysis and Typology of Agricultural Development Performance and Strategy," April, 1974.

6. Eric S. Graber, "Potato Supply, Demand and Marketing in Central Peru," May, 1974.

7. Sahika Kayir, "Sectoral Credit and Investment Patterns in Turkey: 1963-70," August, 1974.

8. Sahika F. Kayir and Jorge F. Checkley, "Structural Changes in the Turkish Economy: 1962-1967," July, 1974.

9. Dennis M. Warren, "Bibliography Vocabulary of the Akan Language of Ghana," June, 1975.

Theses and Dissertations

1. Gunars Dambe, "Planning for More Labor Intensive and More Productive Agriculture in Colombia," 1973.

2. Michael J. Applegate, "A Multi-Sectoral Linear Programming Approach to Measurement of the Economic Costs of Income Redistribution in Guatemala," 1973.

3. Sahika Kayir, "Planning for Growth the Case of Turkey," 1974.

4. T. David Johnston, "Income Potential of Small Farms in Guatemala," 1974.

5. Lu S. Ng, "An Income Distribution and Employment Consistency Model of the Phillipines," 1974.

6. Mark Lund, "Identifying, Developing, and Adopting Technologies Appropriate for Rural Development with Applications to Huari Province in Peru," 1975.

Other Publications

1. Harvey Lapan and Pranab Bardhan, "Localized Technical Progress and Transfer of Technology and Economic Development."

2. William C. Merrill, "The Long-Run Prospects for Increasing Income Levels in Guatemala's Highlands."

3. William C. Merrill, Lehman B. Fletcher and Randall A. Hoffmann, "Agricultural Supply and Demand Projections: Panama."

4. Uma K. Srivastava, Earl O. Heady, Keith D. Rogers and Leo V. Mayer, Food Aid and International Growth, Iowa State University Press, Ames, 1975.

5. Upcoming Prospects & Opportunities in World Food Supplies & Demand. The Forensic Quarterly. Vol. 49, No. 3, pp. 419-434.

Faculty travel to other countries for purposes of establishing linkages and for working on research are shown as follows:

Faculty Travel

Staff Member	Country	Entity
Charles Meyer	Sri Lanka & Thailand	Central Bank of Ceylon
Arnold Paulsen	Jordon	Amman
James Prescott	Guyana	Ministry of National Development Hydraulics Div.
John F. Timmons	Peru	Ministry of Agriculture
Dale Grosvenor	Nigeria	University of Ibadan

Faculty travel during the reporting year to 211d meetings and seminars in the U.S. are as follows:

U.S. Travel

Name	211d Activity
Raymond R. Beneke	Baton Rouge, Louisiana Washington, D.C.
Arnold Paulsen	Washington, D.C. Corvallis, Oregon
J. T. Scott	Washington, D.C. Ithaca, New York
John F. Timmons	East Lansing, Michigan
Mark Lund	Georgia Institute of Technology, Atlanta, Georgia Michigan State University, East Lansing, Michigan
Lu Ng	Cornell University, Ithaca, New York
Earl O. Heady	Petersburg, Virginia (Seminar on development at Virginia State University)

Students presently working in other countries on 211d research are as follows:

Students Presently Working in Another Country

Name	Country	Entity
Ashton Veramallay	Guyana	Ministry of National Development Hydraulics Division
M. Haithan El-Hurani	Jordan	Amman, Jordan Irbid Region, Kovak Region Beirut Lebanon
Murugasu Kulasingam	Ceylon	Central Bank of Ceylon

VI. Impact of Grant Supported Activities in Achieving Grant Purpose.

Grant supported activities have strengthened I.S.U.'s competence in the economics of agricultural development for less developed countries. First, the grant has attracted staff members to the extent of two man years of faculty to work on agricultural development problems. Otherwise, these staff resources would have been engaged in other types of research. Staff members have gained experiences in other countries because of the Grant. Also, thirty-four students from sixteen countries have received training under the Grant.

The Grant and its induced interest in the agriculture sector of developing countries contributed to the establishment of the World Food Institute in 1971 and to the World Food Conference to be held in 1976.

VII. Other Resources for Grant-Related Activities.

Approximately $50,000 of University budgeted resources and overhead contribution have shifted to the project during the reporting period. Also,

the University technical assistance projects in Peru and in Thailand have both given and received benefits from the 211d program.

VIII. Utilization of Institutional Response Capabilities in Development Programs.

The 211d Grant has enabled Iowa State University to furnish AID with ten man years of talent under its talent sharing features. The program also has enabled the University to respond to specific requests for technical assistance to Peru and to I.I.T.A. in Nigeria as outlined earlier in this report.

As mentioned earlier the grant has enabled 34 students to study agricultural development at the University; 18 of whom are in various stages of completing their research and study programs.

Furthermore, the staff who have traveled to other countries in establishing linkages, have also provided technical assistance to entities within these countries. Utilization of research results by staff and students will continue during the remainder of the Grant term as research results materialize and as students complete their research activities.

Possibilities of an Iranian Grant to I.S.U. for 211d type funding were discussed with Deputy Minister of the Ministry of Science and Higher Education.

The Agricultural Faculty, University of Jordan, desires to cooperate on further research on wheat production and marketing and has requested a conference on results of 211d wheat study.

The Forestry Department of the University of Ibadan request 211d cooperation on the problems faced by agriculture in forest areas and the problems of rural industrialization.

The I.I.T.A. requests research cooperation on cassava-gari.

It is becoming obvious that in the establishment of research and utilization linkages within our 211d activities, there is ample demand for follow-up work both in further research as well as in the utilization phase of work completed.

IX. Next Years Plan of Work and Anticipated Expenditures

Activities planned and committed for the 7-1-75 to 6-30-76 reporting period include the completion of research underway by the 18 research assistantships and faculty serving in research participating advisory roles with these students.

Possibilities and interests in countries for the utilization and extension of research activities as outlined in Section VIII will be pursued by the I.S.U. faculty.

Several faculty members of the 211d Grant occupy strategic roles in the planning and conduct of the World Food Conference to be held on the I.S.U. campus June 27 through July 1, 1976. The twelve workshops in this Conference will provide opportunities for 211d staff and students at I.S.U. and other universities as well as national representatives of U.S. and other countries to present and discuss research needs and results within agricultural development.

Work plans for each of the 211d studies in progress at I.S.U. are available if more information is desired.

Resources and budgets for these continuing activities are shown in Tables 1A, 1B, 2A, 2B, 3A, and 3B attached. Tables 1A, 2A, and 3A refer to the original 211d grant to Iowa State University. Tables 1B, 2B, and 3B refer to the 211d amended grant which was made at a later date (February 26, 1973) to emphasize and backup sector planning work in Thailand. The 211d amendment with emphasis on (but not restricted to) Thailand has more specific objectives than the original 211d grant to Iowa State University.

Thailand grant extension and shift to Southeast Asia Bureau

Table 2B for the Amendment of February 26, 1973 includes annual budgets extended through 1977-78. This difference from the original grant budget in Table 2A results as follows. Following an on-site review of the work in Thailand, the Royal Thai Government and AID-USOM in Bangkok requested that the sector planning project be extended for another three years. At the same time, the funds under the Iowa State University 211d Amendment were to be extended for the same time period (namely, through the 1977-78 fiscal year or to June 30, 1978). At the time of this extension of grant funds under the Amendment (no added funds are involved--only the funds under the initial amendment grant on 2/26/73 are being extended), it also was decided that the amended portion of the grant emphasizing Thailand would be transferred from TAB to the Southeast Asia Bureau. Consequently, these arrangements were made in the spring of 1975 by Arlo Minden representing TAB and Donald Yeaman representing Southeast Asia Bureau. Expectedly, then, future progress and summary reports for the amended grant portion will be made to the Southeast Asia Bureau.

The work to be continued under the remaining funds from the grant amendment will be used generally as outlined in the project statement to backup the ongoing quantitative research, modeling and policy analysis in Thailand. Campus based staff will help the Bangkok based staff in further development and application of the national linear programming model and in the development of the 4th 5-year plan from it, in evaluating different development and income policies from it. The campus staff also will help further in conceptualization of the region development and market sector models. However, more emphasis now will be placed by the Ames staff under the funds remaining from the 211d Amendment in (a) further developing the macro model of the Thai economy and linking it with the national programming model, (b) completing the demand analysis for several

basic commodities, (c) incorporating uncertainty dimensions in the models, and (d) using the completed models to drive basic relationships (labor demands and needs, capital demands and availability, etc.) which give a more penetrating understanding of Thai agriculture and feasible future directions for it. The Ames based staff also will synthesize development and sector models which have practical and operational promise for promoting agricultural development and improved income distribution regardless of the developing country to which they might be applied. Finally, the Southeast Asia Trade Model and the World Food Model with emphasis on opportunities for Thailand and Southeast Asia may be reactivated if staff time allows.

X. Involvement of Minority Personnel and Women

Only one black and one woman research assistant of U.S. citizenship have been involved in the grant program this reporting year. A further analysis of Table V-1 reveals only one black and only seventeen women students in the Fall, 1975, graduate program.

Possibly more intensive recruitment of blacks and women from those institutions where blacks and women, respectively, are more prevalent, would be helpful. Also, a greater circulation of employment brochures for 211d positions would be desirable.

Our department is most anxious to involve more blacks and women in the 211d program and we welcome suggestions as to how this objective might be more fully achieved.

XI. Requests for Assistance Both Filled and Unfilled as Well as Requests Presently Under Discussion Were Reported in Sections IV, V, and VIII.

XII. Other Resources for Grant Related Activities

The major resources available for Grant related activities are staff and facilities. These are estimated to amount to around $50,000 for the current reporting year. Also, AID technical assistant contracts in Peru and Thailand provide opportunities of complimentary activities as 211d may be related to these two countries and within the general context of methodological and information developments.

Table 1A. Distribution of 211d Original Grant Funds and Contributions From Other Sources of Funding

Reporting Period July 1, 1974 to June 30, 1975

Grant Objectives/Outputs	7/1/74-6/30/75 Period Under Review	211d Expenditures Cumulative Total	Projected Next Year	Projected to End of Grant
Professional & Clerical Salaries & Benefits	$ 32,255.85	$ 67,908.75	$ 12,375.00	$ 3,925.00
Student Salaries & Benefits	49,635.55	159,950.44	37,385.00	13,600.00
Travel	20,117.27	32,131.89	25,630.00	6,407.00
Tuition and Fees	20,742.50	51,202.50	26,420.00	4,920.00
Equipment	1,747.47	2,129.88	870.00	278.00
Other Direct Costs:				
Supplies & Materials	4,447.25	12,810.52	5,000.00	1,500.00
Computer Time & Analysis	823.45	5,661.58	8,585.00	3,000.00
Communication	1,072.54	3,732.39	1,000.00	300.00
Printing	1,295.51	2,274.44	2,500.00	1,600.59
Workshops & Seminars	431.78	1,152.02	500.00	250.00
TOTAL	$132,569.17	$338,954.41	$120,265.00	$35,780.59

Table 1B. Distribution of 211d Amendment (Thai) Grant Funds (Thai Sector Planning)

Reporting Period July 1, 1974 to June 30, 1975 and Projected Expenditures

Grant Objectives/Outputs	7/1/74-6/30/75 Period Under Review	211d Expenditures Cumulative Total	Projected Next Year	Projected to End of Grant
Professional & Clerical Salaries & Benefits	$ 53,833.64	$ 80,537.03	$38,000.00	$118,805.66
Student Salaries & Benefits	6,487.98	5,785.98	18,288.00	59,403.33
Travel	1,195.79	1,607.41	5,500.00	34,022.53
Equipment			1,000.00	
Other Direct Costs:				
Supplies & Materials	1,824.25	1,824.25	1,000.00	3,127.75
Computer Time & Analysis	182.27	192.27	10,000.00	63,692.73
Communication	628.37	628.37	1,000.00	10,000.00
Printing			3,500.00	10,000.00
Workshops & Seminars			500.00	
TOTAL	$164,151.70	$ 90,575.91	$78,788.00	$294,052.00

Table 2A. Original 211d Grant Expenditure Report Actual and Projected Summary Under Institutional Grant AID/csd2824

Reporting Period July 1, 1974 to June 30, 1975

Item	Expenditures to Date		Projected Expenditures		Total
	Reporting Period 1974-75	Cumulative Total	YEAR		
			5 1974-75	6 1976-77 (7/1/76-9/30/76)	
Professional & Clerical Salaries & Benefits	$ 32,255.85	$ 67,908.75	$ 12,375.00	$ 3,925.00	$ 84,208.75
Student Salaries & Benefits	49,635.55	159,950.44	37,385.00	13,600.00	210,935.44
Travel	20,117.27	32,131.89	25,630.00	6,407.00	64,168.89
Tuition and Fees	20,742.50	51,202.50	26,420.00	4,920.00	82,542.50
Other Direct Costs:					
Supplies & Materials	4,447.25	12,810.52	5,000.00	1,500.00	19,310.52
Computer Time & Analysis	823.45	5,661.58	8,585.00	3,000.00	17,246.59
Communication	1,072.54	3,732.39	1,000.00	300.00	5,032.39
Printing	1,295.51	2,274.44	2,500.00	1,600.59	6,375.03
Workshops & Seminars	431.78	1,152.02	500.00	250.00	1,902.02
TOTAL	$132,569.17	$338,954.41	$120,265.00	$35,780.59	$495,000.00

Table 2B. Amended 211d Grant (Thai) Expenditure Report Actual and Projected Summary Under Institutional Grant AID/csd2824 Amendment

Reporting Period July 1, 1974 to June 30, 1975

	Expenditures to Date		Projected Expenditures			Total
	Reporting Period 1974-75	Cumulative Total	1975-76	1976-77	1977-78	Total
Professional & Clerical Salaries & Benefits	$53,833.64	$73,956.99	$38,000.00	$ 70,318.55	$ 70,317.54	$252,539.08
Student Salaries & Benefits	6,487.98	5,785.98	18,288.00	22,000.00	22,000.00	74,654.02
Travel	1,195.79	1,607.41	5,500.00	6,000.00	6,000.00	19,107.01
Tuition & Fees						
Equipment			1,552.00			1,552.00
Other Direct Costs:						
Supplies & Materials	1,824.25	1,824.25	1,000.00	1,000.00	1,000.00	4,824.25
Computer time & Analysis	182.27	192.27	10,000.00	9,000.00	9,000.00	28,195.27
Communication	628.37	628.37	1,000.00	1,500.00	1,500.00	4,628.37
Printing			3,500.00	5,500.00	5,500.00	14,500.00
Workshops & Seminars			500.00			
TOTAL	$64,151.70	$90,575.91	$78,788.00	$115,318.55	$115,317.54	$400,000.00

Table 3A. 211d Original Grant Summary

Reporting Period July 1, 1974 to June 30, 1975

	July 1, 1974 to June 30, 1975
A. Professional & Clerical Salaries & Benefits	
Hugg, Sandra	$ 1,355.49
Swailes, Sara	3,957.85
Merrill, William	2,361.74
Grosvenor, Dale	2,415.54
Heady, Earl	3,134.23
Meyer, Charles	4,533.80
Paulsen, Arnold	3,670.35
Timmons, John	2,767.35
Prescott, James	3,083.41
Starleaf, Dennis	3,076.25
Lund, Mark	1,665.85
Bauman, Rita	148.69
Brownscombe, Evelyn	46.62
Jacobson, Rachel	38.68
TOTAL	$ 32,255.85
B. Student Salaries & Benefits	
Donnadieu, Enrique	536.94
El-Hurani, Mohamed	7,659.99
Eshrati, Parviz	4,570.56
Ghobadi, Farrokh	4,952.92
Lund, Mark	3,354.75
Ng, Lu	761.76
Veramallay, Ashton	7,192.26
Kulasingam, Murugasu	6,005.01
Yerby, Wayne	1,716.90
Asefa, Sisay	2,678.33
Delgado, Mario	2,625.00
Deveaux, Hillary	2,437.50
Mojtahed, Ahmad	1,125.00
Utley, Sally	1,574.76
Rhee, Jeong	1,529.41
Pourmoghim, Sejed	770.01
Rezazadah, Farad	144.45
TOTAL	$ 49,635.55

Table 3A.-- con'd

Reporting Period July 1, 1974 to June 30, 1975

		July 1, 1974 to June 30, 1975
C.	Travel	$ 20,117.27
D.	Tuition and Fees	20,742.50
E.	Equipment	1,747.47
Other Direct Costs:		
F.	Supplies and Materials	4,447.25
G.	Computer Time and Analysis	823.45
H.	Communication	1,072.54
I.	Printing	1,295.51
J.	Workshops and Seminars	431.78
	TOTAL	$132,569.17

Table 3B. 211d Amendment (Thai) Summary

Reporting Period July 1, 1974 to June 30, 1975

A. Professional & Clerical Salaries & Benefits		
Fedeler, Jerry		$22,481.72
Nagadevara Prasad		7,668.54
Colette, Arden		4,647.60
Spaulding, Brent		3,563.13
Vocke, Gary		3,485.70
Chowdhury, Roy		12,199.00
	TOTAL	53,833.64
B. Student Salaries & Benefits		
Dadgostar, Bahram		3,332.00
Sarkar, Hiren		2,427.98
Garner, Rodger		362.00
Tiffany, Thomas		376.00
	TOTAL	6,367.98
C. Travel		1,195.79
D. Tuition and Fees		
E. Equipment		
F. Supplies and Materials		1,824.25
G. Computer Time and Analysis		192.27
H. Communication		628.37
I. Printing		
J. Workshops and Seminars		431.78
	TOTAL	$64,151.70