

CLASSIFICATION
PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE Agricultural Diversification and Markets - Philippines (ADAM)			2. PROJECT NUMBER 533-13-71(PASA) 0236.02	3. MISSION/AID/W OFFICE DS/AGR/ESP
5. KEY PROJECT IMPLEMENTATION DATES			4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) Final 5	
A. First PRO-AG or Equivalent FY 72	B. Final Obligation Expected FY 78	C. Final Input Delivery FY 78	<input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION	
6. ESTIMATED PROJECT FUNDING			7. PERIOD COVERED BY EVALUATION	
A. Total \$ 1,247,500			From (month/yr.) May 71	
B. U.S. \$ 965,012			To (month/yr.) Feb. 78	
			Date of Evaluation Review Aug. 79	

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
<p>1. This project has terminated after having moderate success in achieving the objectives. However, there remains an issue regarding the appropriateness of the technology when employed in the LDC context. The continued utility of such computer based models depends upon continually updating the data base and appropriate application, use and interpretation of model results. DS/AGR/ESP is currently preparing an activity designed to address this issue.</p>	<p>DS/AGR/ESP Division Chief</p>	<p>12/79</p>

3. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT	
<input type="checkbox"/> Project Paper	<input type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify)	A. <input type="checkbox"/> Continue Project Without Change	
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	_____	B. <input type="checkbox"/> Change Project Design and/or	
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> F.O/C	<input type="checkbox"/> Other (Specify)	<input type="checkbox"/> Change Implementation Plan	
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____	C. <input type="checkbox"/> Discontinue Project	

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)		12. Mission/AID/W Office Director Approval	
Karen A. Wiese, DS/AGR/ESP <i>Karen Wiese</i>		Signature <i>John R. Wilson</i>	
John C. Day, DS/AGR/ESP <i>John C. Day</i>		Typed Name John R. Wilson	
Mary Mozynski, DS/AGR <i>M. M. 10/7/79</i>		Date 10/13/79	

PROJECT ADAM: Evaluation Summary

This project evaluation will serve as the final Agency evaluation performed by DS/AGR/ESP. The project, Agricultural Diversification and Markets in the Philippines grew from discussions between the USAID/Philippines and BAEcon (Bureau of Agricultural Economics at UPLB) at a regional meeting in Manila in 1971.

The project (PASA-TAB/AGR #533-13-71) was developed, implemented and conducted by the USDA/ERS. TAB/AGR/ESP funded the project activities under this agreement for thirty-six (36) months, and continued the project activities under another agreement (PASA-TAB-AGR #236-15-7b) for an additional twenty-one (21) months. Formal work began in May of 1972 and was terminated in February, 1978.

Sources and amounts of project funding are presented in summary in Appendix I. The source of this table is the principal investigator's final report.

The objectives were:

1. To develop the economic data and analysis needed to identify realistic agricultural production and market opportunities and alternatives at the farm, regional and national levels.
2. To obtain an integrated picture of agriculture within which various policy goals can be analyzed. These can be stated as:
 - a. Achieve self-sufficiency in agricultural products at least in regard to staple commodities such as rice and corn;
 - b. Increase national income, raise income of rural people and increase employment in agriculture; and,
 - c. Improve foreign exchange position by reducing agricultural imports and increasing agricultural exports.
3. To develop in the Philippines the capacity for continuous analysis and re-evaluation of these opportunities and alternatives as production and market conditions change.

A discussion of objective achievement is found in the body of this report (pp. 3-6).

The major unresolved issue surrounding the termination of Project ADAM is one of institutionalization of highly sophisticated econometric modelling technologies. Has the model and the use of the model continued to evolve to enable policy analysts to provide agricultural decision makers with timely and appropriate information?

It is of some importance to note that this question is being asked of all AID and other donor past experiences in providing these advanced technologies to LDC institutions. It is suggested that AID might look critically at these past experiences in Agricultural Sector Analysis, in order to evaluate the appropriateness of the technology when employed in the typical LDC situation.

A. PROJECT ADAM: General Background

This project evaluation will serve as the final Agency evaluation performed by DS/AGR/ESP. The project, Agricultural Diversification and Markets (ADAM) in the Philippines grew from discussions between USAID/Philippines and BAEcon (Bureau of Agricultural Economics-UPLB) at a regional meeting in Manila in 1971. At that time it was expected that rice yields would increase tremendously, with the adoption of HYVs and improved technologies. It was concluded that agricultural diversification was necessary in order to find alternative uses for land resources devoted to foodgrain production--as self-sufficiency goals were met and exceeded--to increase farm incomes and to provide additional foreign exchange.

The project (PASA-TAB AGR # 533-13-71) was developed, implemented and conducted by the USDA/ERS, and received initial funding (36 mos.) from TAB/AGR/ESP. At that time, there was an agreement between TAB and the USAID/P that the latter would "pick-up" and continue the ADAM project, subject to project evaluation, beyond the scheduled termination. However, with a new Philippine mission director came an alteration of the previous agreement. Hence, TAB/AGR was forced to continue funding and support for the project activities under a new PASA TAB/AGR # 236-15-76, which fell as an activity 931-0236 (02) under ESP's Expanded Program for Economic Analysis.

Four work phases of Project ADAM were originally programmed for a period of 3 years, but the unexpected voluminous amount of literature on Agricultural research encountered by the project staff during the first phase delayed completion of the later phases.

The second project year had been intended for the analytical phase alone, but due to the earlier delay, some difficulties encountered in the analysis itself, and the need to provide additional experience and training for the staff, a three year extension was provided. Formal work began in May of 1972 and was terminated in February of 1978. During the first two years of the project Dr. J. Atkinson and Dr. David Kunkel were the principal investigators in residence in the Philippines. However, subsequent to an evaluation conducted by the (then) ESP chief, Dr. Lehman Fletcher, Dr. Atkinson was removed from the project and Dr. Kunkel remained in country as the principal investigator until project termination.

Sources of funding were the Philippines National Science Development Board (P 518,000), The USAID/P (\$185,600), TAB/AGR (\$779,412) and counterpart and infrastructure contributions from BAEcon/UPLB. The total cost is estimated at \$1,247,500, plus hidden support costs. (See Appendix I).

B. PROJECT ADAM: OBJECTIVES

The following objectives were established at the beginning (1972) for the project. After being reviewed in 1974 these objectives were found to be relevant and continued throughout the life of the project. (Review team leader: L. Witt, USDA/ERS).

THE OBJECTIVES WERE:

1. To develop the economic data and analysis needed to identify realistic agricultural production and market opportunities and alternatives at the farm, regional and national levels;
2. To obtain an integrated picture of agriculture within which various policy goals can be analyzed. These can be stated as:
 - a. Achieve self-sufficiency in agricultural products, at least in regard to staple commodities such as rice and corn;

- b. Increase national income, raise income of rural people and increase employment in agriculture; and
 - c. Improve foreign exchange position by reducing agricultural imports and increasing agricultural exports.
3. To develop in the Philippines the capacity for continuous analysis and re-evaluation of these opportunities and alternatives as production and market conditions change.
1. "Develop the economic data and analyses needed to identify realistic agricultural production opportunities and alternatives the farm regional, national and international levels".

The economic data and analyses actually developed over the life of the project were generally pertinent to measuring the impact of production alternatives on the whole agricultural sector once the alternatives were identified, rather than actually identifying those alternatives. Identification of alternatives could better be carried out by plant scientists, market development economists, and other specialists. Diversification of agriculture was a major concern when the project was started. ADAM can now measure the impact of alternative diversification schemes on agriculture, but it does not have unique skills to identify viable diversification alternatives.

2. "Obtain an integrated picture of Philippine agriculture within which various policy goals can be formulated and analyzed".

In the process of assembling data and building the model, some of the senior staff associated with the model obtained an integrated picture of Philippine agriculture. It is difficult to measure the extent to which this picture is dispersed beyond those few.

There have been many papers presented at seminars and other papers written on the ADAM data and research. Thus, an attempt was made to extend what was learned about Philippine agriculture beyond the staff of ADAM. Also, many of those who worked on the ADAM project and moved on to other positions carried a better understanding of the agricultural sector with them.

Analyses using the MAAGAP model over the last two years focused upon several constraints limiting farm income, employment and productivity; fertilizer, energy, irrigated land, tractors, milling capacity, etc. This is a major strength of the analytical approach and it has been used.

3. "Develop in the Philippines the capacity for the continuous analysis and re-evaluation of these opportunities and alternatives as production and market conditions change".

Achieving this objective has been a significant accomplishment of the ADAM project. This consists of more than just an economic model. Today, ADAM is a research capability consisting of trained people, accumulated economic intelligence of Philippine agriculture and an economic model. Development of mechanisms or capabilities is an ongoing process. It is expected that over the next several years, this research capacity should continue to develop with ADAM forming an analytical foundation for policy thrust.

C. PROJECT ADAM: Significant Achievements/Outputs

The project can report as accomplishments:

1. A research capacity consisting of a team of trained (and in-training) researchers, data experts and computer specialists; an operational model of Philippine agriculture; and a collection of pertinent data describing regional and national agriculture. This research capacity has grown over the life of the project and is now able to provide sound economic analyses of selected (not all) planning and policy questions relating to agriculture.
2. Since 1972 the following reports have resulted from the ADAM project: 4 professional journal articles, 17 conference papers, 10 research reports, 1 USDA research report, a 7-volume bibliography of research on agriculture in the Philippines, 11 regional data books, 7 internal policy notes, 5 rice situation reports, 7 M.S. and 3 Ph.D. theses as well as a number of other reports. In addition the final technical report was published as a special issue of the Philippine Journal of Agricultural Economics and Development in January 1979. Bibliographic references are attached as Appendix II.
3. Models constructed by ADAM included:
 - a. National model (MAAGAP). This is a currently operational model of Philippine agriculture which includes the latest modeling theory and technology. It has been tested and used. It can be useful to assist in analyzing questions relating to the overall national impact on agriculture

of changes in farm input prices, changes in farm technology and changes in the prices of farm commodities.

- b. Regional model. A 4-region model is in the validation stage and is beginning to provide realistic results. Additional regions can be added as additional data become available and as needs arise. This model can be used the same way as the MAAGAP model, but provides regional breakdowns of results. This model will provide information needed for regional analysis but will be considerably more cumbersome to use than MAAGAP because of its size.
- c. Farm model. A model of a typical rice farm was constructed but it has not been used recently.

4. Research Training and Experience. Forty-nine people with special analytical skills have received (or are receiving) training and experience with ADAM. Twenty-eight of those with skills have left the project for responsible positions in the Ministry of Agriculture, other government agencies and private industry. Their experience, though lost to the project, is not lost to Philippine society. Current staff includes two senior-level researchers, 16 persons with analytical skills, 17 support persons and one senior-level researcher in training. A majority of the staff have been women. Development of this capability is an ongoing process and over the next several years, this research capacity should continue to develop. A brief table is presented as Appendix III.

E. PROJECT ADAM: Assessment/Unresolved Issues

1. Sustained Utility and Policy Impact

AIDs field experience with the extension of highly sophisticated economic technology and theory to LDCs is quite mixed. The practical extension of econometric computer based technologies is relatively costly to AID. However, the potential "pay-off", in terms of actively effecting agricultural policies which directly impact upon agricultural development--and AIDs target group--is equally large. The "pay-off" will meet its potential if the information generated, through the use of mathematical computer modeling, is timely provided and translated into a form readily understood by the policy decision makers in LDC governments.

There is a good probability that during the life of a project utilization of information generated by such modeling efforts will be forwarded and used by government officials. However, to insure the continued utility of the modeling activities the project technicians and supporters have a major responsibility to institutionalize the activities. This requires the host country government institutional counterpart to officially provide the physical infrastructure, the institutional mandate, the budget and the personnel needed to breathe sustained life into this new technical division.

The question raised herein is has ADAM met its potential and has BAEcon moved toward institutionalization of ADAM?

In the earlier stages of the project while the model was still under construction a number of descriptive studies were made two of which were widely used. The first was the nine volume bibliography developed during the first phase of the project was used by the first congress of the Philippine Council for Agricultural Research as the basic bibliographic resource. The second was the regional descriptions and data base which combined most of the available data into a standard aggregation and format. These were used by the Department of Agriculture at their regional level planning conferences. These are now being updated and will continue to be data resource books at the regional level.

As the programming model and other quantitative work progressed there was general concern about whether policy makers would use the results. One of the earliest uses was a memo prepared in May of 1975 which combined initial model results with other econometric work on supply and demand response to indicate what the impact of proposed changes in the fertilizer subsidy price would be. Because of its timing this proved very useful to the Secretary of Agriculture. Other analysis followed such as the evaluation of the 1974-77 plan and later in the development of 78-82 and beyond plans. Additional policy analysis was also undertaken and those are summarized in the technical report.

However, there was a general expectation that the models should become more widely used at higher levels in the department.

Usage at this point has lagged potential partly because of where the model and modeling staff is located and partly due to the lack of understanding of what type and kind of analyses it is suited for. It is also partly a result of what kind of analysis and report are usually required in the day to day operations of the Ministry of Agriculture. Most of the problems that have to be dealt with on a day to day basis are short run in nature and are a result of short term fluctuations in supply or demand which requires an immediate response. Thus there is little time for detailed analysis and unless the market or policy change is major, it cannot be measured within the model framework. As has been recognized elsewhere, for very short term economic analysis a commodity specialist or expert can do better than almost any model. However this does not say models are not useful, but does highlight an important limitation: policy makers will not rely on models until they can provide answers as quickly and with the same degree of accuracy as by other means. This then puts the burden of proof on the analysts as to the usefulness of a model.

Support for the project from the mission side at first was a problem but later proved to be adequate. One thing that would have eased things in the beginning was for AID to have authorized the mission to execute a project agreement with the Philippine government as was done during the last few years.

This would have given the project legitimacy from the very beginning and specified in better detail what resources the USAID mission and Philippine government were to contribute.

On the Philippine side the Bureau of Agricultural Economics (BAECON) strongly supported the project throughout its life. However funding was provided from outside the Bureau, first by the National Science and Development Board (NSDB) and during the last two years the Philippine Council for Agricultural and Research ~~Research~~ (PICARR). This has always created problems in terms of staffing and maintaining salary levels since this meant most of the project personnel were contractuels. The participation of regular BAEcon personnel was gradually increased and by the end of the project constituted about one-third of the staff, most of which were at the higher levels.

The problems associated with identifying training and keeping highly qualified staff—from senior analysts to computer specialists—are probably most critical to the success of building a policy research capability. Thus, these problems should receive priority in planning for the future.

On the ADAM project the number of persons in leadership positions has always been critically small. Training past the M.S. degree to develop research skills for potential leaders was not started until late in the project. Consequently, at the time of this report, the number of persons capable of providing project leadership, operating and interpreting the MAAGAP model is limited to one full-time ADAM employee with a Ph.D. and one part-

time contract employee also a Ph.D.

Turnover has also been high within the ranks of the staff having some analytical or programming skills. Of the 45 persons with these skills who have worked with ADAM since 1972 only sixteen remain and only three of these have more than two years experience with ADAM.

Based upon the ADAM experience and the experience of the policy analysis teams in other countries, the turnover of trained personnel will be high. Those who excel will have high paying alternatives outside of government or will be promoted to other positions in government.

Experience over the life of the ADAM project points out the need for identifying the trainees as soon as possible so that they can receive out-of-country training and return to the project before it terminates. The "hands-on" experience of policy research is an equally valuable part of their training.

Overall, considering the resources available, the project, can be judged as a success having met most of the project objectives though not as was planned. By the end of project there was an operational model of Philippine agriculture which has been used for analysis and a trained staff with which to continue use of the current model and development of other types of analysis as is required. As in any analytical effort much remains to be done and the continued usefulness of the agricultural sector models in the Philippines will depend on whether those trained in its use have the insight to use it, change it and provide useful analysis to policy makers and other users.

APPENDIX I

Project Funding

I. Philippine Source	Feb. 1, 1972	Feb. 1, 1976	Aug. 1, 1976	Aug. 1, 1977
	Jan. 31, 1976	Jul. 30, 1976	Jul. 30, 1977	Jul. 30, 1978
	000	000	000	000
A. NSDB	1,701	150	550	600
B. BAECON/UPLB	462	85	90	100
Total	2,163	235	640	700
Rate: 7.00\$1.00 to Jan. 31, 1976)	\$ 309	\$ 31	\$ 85	\$ 93
2. USAID	1 Mar. 1972	1 July 75	Jul 1, 1976	77
	31 Jun, 1975	30 Jun 76	Jun 30, 1977	
A. Mission (Approximate)				
Training		32,400	33,000	33,000
Consultants	1,200	5,500	15,500	15,500
Commodities	\$ 5,000	-		
In country support Housing, etc. (Peso trust funds)	25,000	10,000	10,000	-
Total	31,200	47,900	58,500	48,000
B. TAB	400,000	86,312	57,500	-
Total AID	431,200	134,212	116,000	48,000
3. Total Project (ooo)	(Through Jul. 1, 1976)	905.5	201	141

ATTACHMENT - APPENDIX II

STUDIES UNDERTAKEN UNDER PROJECT ADAM
As of April 1978

Journal Articles

- Atienza, F. M. and D. E. Kunkel. "Determining the Optimum Economic Family-Size Farms for Land Reform Areas," Journal of Agricultural Economics and Development, Laguna Philippines, 1974, IV(2): 107 - 129.
- Gonzales, L. A., D. E. Kunkel and J. C. Alix. "MAAGAP: The ADAM National Model of the Philippines," Journal of Agricultural Economics and Development, 1978.
- Kunkel, D. E., L. A. Gonzales and M. H. Hiwatig. "Application of Mathematical Programming Models Simulating Competitive Market Equilibrium for Agricultural Policy and Planning Analysis," Journal of Philippine Development, No. 6, Vol. III(2), 1976, pp. 264 - 280.
- Rodriguez, G. R., D. E. Kunkel and J. M. Sharples. "The Impact of Risk Aversion by Filipino Crop Producers on Enterprise Selection, Resource Returns and Adoption of HYV Rice," Journal of Agricultural Economics and Development, 1978 (Forthcoming).

Conference Papers

- Alix, J. C. "Analysis to Support Agricultural Policy in the Philippines." Paper presented at the Asian Sector Analysis Seminar sponsored by the Agricultural Development Council, Inc., Singapore, November 8 - 11, 1976.
- _____. "A Preliminary Analysis of Philippine Agriculture." Paper presented at the First National Congress on Agricultural Research of the Philippine Council for Agricultural Research, Los Banos, Laguna, February 12, 1973.
- Ferrer, J. B. "Demand for Selected Agricultural Products for Household Consumption, 1970 - 1980." Presented as a Discussion Paper, Project ADAM In-Country Evaluation Workshop, Rajah Hotel, Cebu City, October 17 - 19, 1976.
- Ferrer, J. B. and D. E. Kunkel. "Demand for Selected Agricultural Products for Household Consumption, 1970 - 1980." Proceedings third Agricultural Policy Conference, Center for Policy and Development Studies, Los Benos, Laguna, Philippines, October 15 - 18, 1975.

Gonzales, L. A. "MAAGAP: The ADAM National Model of the Philippines." Paper presented at the Asian Sector Analysis Seminar sponsored by the Agricultural Development Council, Inc., Singapore, November 8 - 11, 1976.

_____. "Preliminary Analysis of Sectoral Trends in Philippine Agriculture by the Year 2000." Presented as a Discussion Paper. Project ADAM In-Country Evaluation Workshop, Rajah Hotel, Cebu City, October 17 - 19, 1976.

_____ and D. E. Kunkel. "Accommodating Intersectoral Linkages in Policy Analysis with Agricultural Sector Models: The Philippine Case." Paper presented at the Second Asian Regional Agricultural Sector Analysis Seminar, Cebu City, Philippines, November 6 - 9, 1977.

Hiwatig, M. H. "Data Systems to Support Agricultural Policies in the Philippines." Paper presented at the Asian Sector Analysis Seminar sponsored by the Agricultural Development Council, Inc., Singapore, November 8 - 11, 1976.

Kunkel, D. E. "Agricultural Sector Analysis in the Philippines and the Need for Quantitative Economic Intelligence." Paper presented at the Asian Sector Analysis Seminar sponsored by the Agricultural Development Council, Inc., Singapore, November 8 - 11, 1976.

_____ and L. A. Gonzales. "MAAGAP: A Mathematical Planning and Policy Analysis Model for Philippine Agriculture." Proceedings Third Agricultural Policy Conference, Center for Policy and Development Studies, Los Banos, Laguna, Philippines, October 15 18, 1975.

Kunkel, D. E., L. A. Gonzales and M. H. Hiwatig. "Application of Mathematical Programming Models Simulating Competitive Market Equilibrium for Agricultural Policy and Planning Analysis." Presented as a Discussion Paper, Project ADAM In-Country Evaluation Workshop, Rajah Hotel, Cebu City, October 17 19, 1976.

_____, L. A. Gonzales and M. H. Hiwatig. "Application of Mathematical Programming Models Simulating Competitive Market Equilibrium for Agricultural Policy and Planning Analysis." Paper presented at the IAAE Meeting, Nairobi, Kenya, July 26 - August 4, 1976.

Leonardo, G. O. "The Investment Requirements of the Philippine Agricultural Sector." Presented as a Discussion Paper, Project ADAM In-Country Evaluation Workshop, Rajah Hotel, Cebu City, October 17 - 19, 1976.

Olalo, C. C. "An Analysis of Trends in Food and Commercial Crop Production, Area and Yield in the Philippines, 1954 - 1972." Presented as a Discussion Paper, Project ADAM In-Country Evaluation Workshop, Rajah Hotel, Cebu City, October 17 - 19, 1976.

Orogo, V. P. "The Analysis of Household Demand for Selected Agricultural Products in Major Philippine Areas: Manila, Urban and Rural." Presented as a Discussion Paper, Project ADAM In-Country Evaluation Workshop, Rajah Hotel, Cebu City, October 17 - 19, 1976.

Rodriguez, G. R. and D. E. Kunkel. "The Incorporation of Risk in Agricultural Sctor Models: The Philippine Experience." Paper presented at the Second Asian Regional Agricultural Sector Analysis Seminar, Cebu City, Philippines, November 6 - 9, 1977.

_____, D. E. Kunkel and J. M. Sharples. "The Impact of Risk Aversion by Filipino Crop Producers on Enterprise Selection Resource Returns and Adoption of HYV Rice." Paper presented at Symposium on Farming System, Philippine Agriacultural Economics Association Meeting, Cagayan de Oro City, Philippines, March 12, 1977.

Research Reports

Atkinson, L. J. and D. E. Kunkel. HYV in the Philippines: Progress of the Seed Fertilizer Revolution, Foreign Agricultural Economics Report No. 113, Economic Research Service, USDA, Washington, D.C., February 1976.

Gonzales, L. A., D. E. Kunkel, et. al. "The Implications of Alternative Export Prices for Sugar and Coconut Products to Philippine Agricultural Land Use, 1976 - 2000," Bureau of Agricultural Economics, Quezon City, January 1978.

_____, D. E. Kunkel and J. C. Alix. "Selected Philippine Agricultural Policy Issues and the MAAGAP Model, 1975 - 1977," Bureau of Agricultural Economics, Quezon City, February 1978.

_____, D. E. Kunkel and J. C. Alix. "Data Base and Technology Set of MAAGAP: The ADAM National Model," Bureau of Agricultural Economics, Quezon City, October 1977.

Kunkel, D. E., L. A. Gonzales and J. C. Alix. "MAAGAP 1980 Supply-Demand Projections of Selected Agricultural Products in the Philippines: A Sectoral Linear Programming Approach," Project ADAM Technical Report, Bureau of Agricultural Economics, Quezon City, July 1977.

Project ADAM. Production Costs and Returns in Backyard Poultry and Livestock Enterprises, 1976, Research Report No. 2, Series of 1978, Bureau of Agricultural Economics, Quezon City, February 1978.

_____. "An Economic Analysis of Backyard Livestock and Poultry Enterprises, 1976," ADAM (Project II), Bureau of Agricultural Economics, Quezon City, December 1977 (Preliminary draft).

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_____. "Some Observations on Production Costs and Returns in Backyard Poultry Raising, Cattle, Carabao and Hogs Raising, Philippines, 1976," ADAM (Project II), Bureau of Agricultural Economics, Quezon City, April 1978 (Preliminary draft).

Receno, J. M., C. C. Olslo and A. R. Librero. "An Analysis of Trends in Food and Commercial Crop Production, Area, and Yield in the Philippines, 1954 - 1972," Bureau of Agricultural Economics, Quezon City, April 1976.

Rodriguez, G. R. Fertilizer Supply and Demand: An Econometric Approach, Project ADAM Research Report No. 6, Bureau of Agricultural Economics, Quezon City, July 1975.

_____. "The Fertilizer Situation in the Philippines," Bureau of Agricultural Economics, Quezon City, June 1974.

Thesis

Almeda, J. P. "Economies of Size in Rice Production in Two Selected Provinces, Philippines, CY 1974 - 1975," Unpublished M. A. Thesis, Australian National University, Australia, August 1976.

Ferrer, J. B. "Alternative Methods in the Estimation of Demand for Selected Agricultural Products in the Philippines," Unpublished M. S. Thesis, Asian Social Institute, April 1978.

Gonzales, L. A. "Analysis of Selected Policy Alternatives in the Agricultural Sector of the Philippines," Unpublished Ph. D. Dissertation, University of Tennessee, Knoxville, Tennessee, 1976.

Lachica, E. M. "Supply and Demand Prospects for Philippine Coconut Oil and Implications on International Trade," Unpublished Master's Report, Kansas State University, 1978.

Leonardo, G. O. "Use of Linear Programming Techniques to Estimate the Investment Requires of the Philippine Agricultural Sector," Unpublished M. A. Thesis, University of the Philippines, July 1976 (Preliminary draft).

Orogo, V. P. "Estimates of Demand Elasticities for Selected Agricultural Products in Major Philippine Areas: Manila, Urban and Rural," Unpublished M. B. A. Thesis, Philippine College of Commerce, April 1978.

Rodriguez, G. R. "Fertilizer Demand in the Philippines, 1952 - 1980," Unpublished M. B. A. Thesis, Ateneo University, 1974.

_____. "The Consideration of Risk in Agricultural Policies: The Philippine Experience," Unpublished Ph. D. Dissertation, Purdue University, Indiana, May 1978.

Tutaan, C. G. "Measuring the Effects of Mechanizing Rice Farms in the Philippines on Production and Employment," Unpublished M. A. Thesis, University of the East, April 1978 (Preliminary draft).

Working Papers

- Atienza, F. M. "Derivation of Input-Output Coefficients on Poultry and Hogs Activities for the Regional Prototype Model," Project ADAM International File, Bureau of Agricultural Economics, Quezon City, 1978 (Preliminary draft).
- _____. "Revised Input-Output Coefficients of Rice and Corn Production Activities by Technology Levels for the Regional Model," Project ADAM International File, Bureau of Agricultural Economics, Quezon City, 1978 (Preliminary draft).
- _____, et. al. "Land According to Capability Classification of the Philippines," Project ADAM Working Paper, Bureau of Agricultural Economics, Quezon City, December 1974 (Preliminary draft).
- _____ and D. E. Kunkel. "Determining the Optimum Economic Family-Size Farms for Land Reform Areas," Preliminary Report, Bureau of Agricultural Economics, Quezon City, 1973.
- Atkinson, L. J. and D. E. Kunkel. "HYV in the Philippines: Progress of the Seed Fertilizer Revolution," Bureau of Agricultural Economics, Quezon City, 1974 (Preliminary draft).
- _____ and D. E. Kunkel. "Planning for Agricultural Development: A Review of Literature," Project ADAM Working Paper No. 3, Bureau of Agricultural Economics, Quezon City, 1973.
- _____ and D. E. Kunkel. "Some Explanatory Notes on the Nature of the Green Revolution in the Philippines," Project ADAM Working Paper No. 2, Bureau of Agricultural Economics, Quezon City, 1973.
- Balagot, Q. M. and A. R. Librero. "Analysis of Agricultural Wage Rates in the Philippines," Project ADAM Working Paper No. 10, Bureau of Agricultural Economics, Quezon City, December 1975.
- Buenaceda, B. O., et. al. "Prices and Price Margins of Rice and Corn and Selected Export Crops," Project ADAM Working Paper No. 9, Bureau of Agricultural Economics, Quezon City, October 1975.
- Evangelista, M. M. and N. R. Deomampo. "Prices and Price Margins of Chicken and Eggs," Project ADAM Working Paper No. 11, Bureau of Agricultural Economics, Quezon City, January 1976.

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- Foot, R. J. "Agricultural Sector Models for the Philippines: Formulation and Data," Project ADAM Internal File, Bureau of Agricultural Economics, Quezon City, 1974 .
- _____. "Macro-Model for the Philippines in 1955 Prices-Results for 1970 - 1972," Project ADAM Internal File, Bureau of Agricultural Economics, Quezon City, 1974 (Mimeographed).
- _____. "A Macro-Model for the Philippines for 1955 - 1969 in 1955 Prices," Project ADAM Internal File, Bureau of Agricultural Economics, Quezon City, 1973.
- Gonzales, L. A. "Operational Linkages of the ADAM Model with the Integrated Agricultural Production and Marketing Project of the Department of Agriculture." Project ADAM, Bureau of Agricultural Economics, Quezon City, April 1978.
- _____. "Policy Uses of the Agricultural Credit Components of the MAAGAP Model," Project ADAM Internal File, Bureau of Agricultural Economics Quezon City, December 11, 1976.
- _____ and D. E. Kunkel. "Economic Implication of Meat Exports in the Philippine Agricultural Sector by 1977," Project ADAM Internal File, Bureau of Agricultural Economics, Quezon City, October 30, 1976.
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APPENDIX III

Persons Who Received Training or Experience with
ADAM, 1972-1977

Category	Total	Currently on ADAM Project		Away on Training	Transferred
		Full Time	Part Time		
Ph.D.	4	1	1	1	1
Programming skills	6	3	1	0	2
Other analytical skills	39	9	3	2	25
Subtotal (skilled)	49	<u>12</u>	<u>5</u>	3	28
Other employees	62	17		0	45
TOTAL	111	34		3	73

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