

AGENCY FOR INTERNATIONAL DEVELOPMENT
 WASHINGTON, D. C. 20523
BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY

1. SUBJECT CLASSIFICATION	A. PRIMARY ECONOMICS
	B. SECONDARY AGRICULTURAL MARKETING

2. TITLE AND SUBTITLE
 NSDB EVALUATION SEMINAR ON AGRICULTURAL DIVERSIFICATION AND MARKETING IN THE PHILIPPINES

3. AUTHOR(S)
 PEDRO LAUDENCIA et.al.

4. DOCUMENT DATE JUNE 1973	5. NUMBER OF PAGES 78 PAGES	6. ARC NUMBER ARC RP-338.1-E19a
-------------------------------	--------------------------------	------------------------------------

7. REFERENCE ORGANIZATION NAME AND ADDRESS
 U.S. DEPT. OF AGRICULTURE
 ECONOMIC RESEARCH SERVICE
 WASHINGTON, D.C. 20250

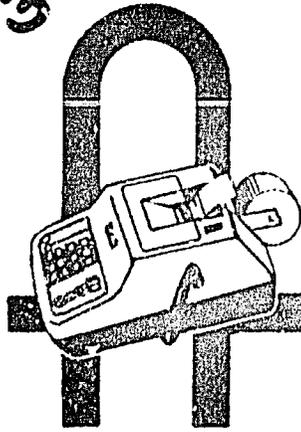
8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publishers, Availability)

9. ABSTRACT

Project ADAM is a joint undertaking of the Bureau of Agricultural Economics, DANR, the U.P. College of Agriculture and the U.S. Department of Agriculture. It is an example of a multi-disciplinary inter-agency approach of trying to find some solutions to many of our problems in the agricultural sector, such as low and slowly rising farm income and productivity, high rate of unemployment and underemployment, poorly-developed marketing system, risk and uncertainty facing the agricultural producers, and finally, the generally unfavorable balance of payments. We have observed in the past that there were various attempts to solve these problems based mainly or principally on a heuristic approach. Expensive past programs eventually dissipate funds without solving the problems possibly because of the lack of systematic approach. Project ADAM was evolved with the aim to make an in-depth study of these problems and offer solutions, based on scientific analysis. Its objectives are as follows: first, to analyze the various constraints limiting farm income, employment and productivity; secondly, to identify realistic agricultural production and market opportunities and alternatives at the farm, regional and national level in order to increase and stabilize farm income; and third, to contribute to national growth, increase employment and obtain foreign exchange.

10. CONTROL NUMBER PN-AAB - 019	11. PRICE OF DOCUMENT
12. DESCRIPTORS UNEMPLOYMENT, MARKETING SYSTEM, FARM INCOME, PRODUCTIVITY BALANCE OF PAYMENTS, FOREIGN EXCHANGE, NATIONAL GROWTH	13. PROJECT NUMBER 931-17-190-533
	14. CONTRACT NUMBER PASA RA(AJ)13-71
	15. TYPE OF DOCUMENT SEMINAR REPORT

N-3



AGRICULTURAL
DIVERSIFICATION
AND
MARKETS IN THE PHILIPPINES

(PROJECT ADAM) NSDB-ASSISTED PROJECT NO. 2.260

PROCEEDINGS

NSDB Evaluation Seminar

*Agricultural Diversification
and Markets
in the Philippines*

PROJECT ADAM
property
(AGRICULTURAL DIVERSIFICATION
AND MARKETS IN THE PHILIPPINES)

JUNE 28, 1973

AN NSDB/USAID-ASSISTED JOINT RESEARCH UNDERTAKING OF
BAECON-DANR, UP-CA & USDA

P R O C E E D I N G S

NSDB EVALUATION SEMINAR ON

AGRICULTURAL DIVERSIFICATION AND MARKETS

IN THE PHILIPPINES

(PROJECT ADAM)

June 28, 1973

Dr. P. Garcia Memorial Hall
Pedro Gil St. (Herran)
Manila

Table of Contents

	<u>Page</u>
Program	1
Opening Remarks	1
Presentation: <u>Agricultural Diversification and Markets in the Philippines.</u>	3
Discussion Papers	
Discussant: Director Alejandro Apacible.	37
Discussant: Dr. Amando Dalisay	40
Discussant: Dr. David Kunkel	45
Discussant: Dr. Thomas Flores	47
Comments on the Discussion Papers	51
Open Forum	58

P R O G R A M

MORNING

9:00 PHILIPPINE NATIONAL ANTHEM

OPENING REMARKS Mr. Pedro N. Laudencia
Supervising Scientist and Chief
Division of Agriculture and
Natural Resources Research,
NSDB

"AGRICULTURAL DIVERSIFICATION
AND MARKETS IN THE PHILIPPINES. .Director Leonardo A. Paulino and
Assistant Director Jesus C. Alix
Bureau of Agricultural Economics

9:45 B R E A K

10:00 DISCUSSION

PANEL OF DISCUSSANTS

Director Alejandro R. Apacible
Agro-Industrial Department
Board of Investment

Dr. Thomas G. Flores
Director, Socio-Economics
Research
Philippine Council for
Agricultural Research

Dr. Amando M. Dalisay
Executive Secretary
National Research Council of
the Philippines

Dr. David E. Kunkel
Consultant, Economic Research
Service
U.S. Department of Agriculture

11:00 OPEN FORUM

Moderator:

Mr. Ricardo P. Venturina
N S D B

PROCEEDINGS AT THE 7th NSDB EVALUATION SERIES
ON "AGRICULTURAL DIVERSIFICATION AND
MARKETS IN THE PHILIPPINES"
June 28, 1973

Opening Remarks	Pedro Laudencia Supervising Scientist and Chief, Division of Agriculture and Natural Resources Research, NSDB
<u>Agricultural Diversification and Markets in the Philip- pines (Presentation)</u>	I.A. Paulino & J.C. Alix Director & Asst. Director, respectively, Bureau of Agricul- tural Economics ^{a/}
Discussion Paper.	Alejandro Apacible Agro-Industrial Director, Board of Investments
Discussion Paper.	Dr. Amando Dalisay Executive Secretary, National Research Council of the Philippines
Discussion Paper.	Dr. Thomas G. Flores Director of Technical Services, PCAR and Officer-in-Charge, Socio-Economic Research Division
Discussion Paper.	Dr. David E. Kunkel Economist, Economic Research Service, U.S. Department of Agri- culture and Asst. Project Leader, Project ADAM
Comments on the Discussion Papers .	J.C. Alix
Open Forum.	Audience

^{a/}The presentation was made by Asst. Dir. J.C. Alix, Project Leader.

OPENING REMARKS

Pedro Laudencia*

Project ADAM is a joint undertaking of the Bureau of Agricultural Economics, DANK, the U.P. College of Agriculture and the U.S. Department of Agriculture. It is an example of a multi-disciplinary inter-agency approach of trying to find some solutions to many of our problems in the agricultural sector, such as low and slowly rising farm income and productivity, high rate of unemployment and underemployment, poorly-developed marketing system, risk and uncertainty facing the agricultural producers, and finally, the generally unfavorable balance of payments. We have observed in the past that there were various attempts to solve these problems based mainly or principally on a heuristic approach. Expensive past programs eventually dissipate funds without solving the problems possibly because of the lack of systematic approach. Project ADAM was evolved with the aim to make an in-depth study of these problems and offer solutions, based on scientific analysis. Its objectives are as follows: first, to analyze the various constraints limiting farm income, employment and productivity; secondly, to identify realistic agricultural production and market opportunities and alternatives at the farm, regional and national level in order to increase and stabilize farm income; and third, to contribute to national growth, increase employment and obtain foreign exchange. Project ADAM is now in its second year of operation and NSDB has already granted during these two years ₱526,000

*Supervising Scientist and Chief, Division of Agriculture and Natural Resources Research, NSDB.

in order to carry out the project; not to mention, of course, the contribution of USAID, the Bureau of Agricultural Economics, the U.P. College of Agriculture, which are also sizeable. We are therefore bringing this project now for your scrutiny to further improve its methodology, if it could still be done. We would like to invite criticism and questions which may guide further our researchers (who, you will see, are well selected in the field of agricultural economics) in order to plot the right direction.

Thank you.

AGRICULTURAL DIVERSIFICATION AND MARKETS IN THE PHILIPPINES^{1/}
(NSDB-Assisted Project No. 2.260)

I. A. Paulino and J.C. Alik*

INTRODUCTION

Current policies in agriculture adhere to the objective of ultimate attainment of sufficiency in food supply. The Department of Agriculture and Natural Resources is charged with the responsibility for the attainment of this objective. Production programs fully utilizing the resources of the Department are being implemented to achieve sufficiency within the shortest possible time.

The Bureau of Agricultural Economics, as one of its functions, conducts researches on agricultural policy matters and the available policy options and alternatives that could possibly bring to reality the country's productivity goal in agriculture. But while productivity objectives are necessary and relatively short-run in nature, planning for agricultural development implies the conduct of long-run studies, the results of which may be gainfully utilized for policy formulation. Yet to gain an insight into the future and what can be done, one must look backwards to determine what had been accomplished, and relate these to the present to know what is happening and what the situation is. So that as the programs to increase production continue we must examine the past and make an assessment of the present so that we

^{1/}Paper read at the 7th NSDB Evaluation Series on June 28, 1973, Dr. Paulino J. Garcia Memorial Hall, Herran St., Manila.

*Project Director and Project Leader, respectively.

may know what to do in the future. This requires an in-depth study of Philippine agriculture, of what was, of what is and of what should desirably be.

The birth of Project /D/M is in answer to this need and NSDB, as well as the U.S. Department of /griculture, found this undertaking of such worth that they have both given their support to the study. The project started on February 1, 1972 and is expected to be terminated by January 31, 1975.

OBJECTIVES

The Project has for its objectives the following:

1. To obtain an integrated picture of Philippine agriculture within which various policy goals can be formulated and analyzed.
2. To analyze the various constraints limiting farm income, employment and productivity in the country.
3. To develop the economic data and analysis needed to identify realistic agricultural production and market opportunities and alternatives at the farm, regional, national and international levels in order to:
 - a) increase and stabilize farm income
 - b) increase its contribution to national growth
 - c) increase employment
 - d) increase foreign exchange earnings
4. To develop in the Philippines, with the combined efforts of the Department of /griculture and Natural Resources, the University of the Philippines and the U.S. Department of /griculture, the mechanisms for continuous analysis and

re-evaluation of these opportunities and alternatives as production and market conditions change.

PROBLEMS

The project recognizes and will concentrate on the following problems of Philippine agriculture:

1. Low and slowly rising farm income and productivity
2. High rate of unemployment and underemployment in the rural areas
3. A poorly developed marketing system for agricultural products
4. The high risks and uncertainties facing the agricultural producer, namely, weather factors and prices
5. The generally unfavorable terms of trade that the agricultural producer faces.

SCOPE OF WORK

The research project is designed to combine the research efforts of the Bureau of Agricultural Economics of the Department of Agriculture and Natural Resources (B/Econ-D/NR), the College of Agriculture of the University of the Philippines in Los Baños (CA-UPLB), and the Economics Research Service of the U.S. Department of Agriculture (ERS-USD/A) to achieve the foregoing objectives. Planned activities in the project have been divided into four major phases over a project period of 36 months. The tentative timetable for the different phases of the research is given in Appendix A.

In brief, the approach of this research project departs in a number of significant details from many others. On close study, one finds that it is an umbrella of research projects designed to:

- a) avail of existing research work and data to provide first approximate answers, at intervals throughout the study, to maximize its utility to decision-makers;
- b) undertake new research or data collection activities only after a careful appraisal of existing work;
- c) integrate its activities with those presently underway in other Philippine research institutions in order to:
 - (1) avoid duplication;
 - (2) capitalize on work going on simultaneously with, but outside the project; and
 - (3) to focus its independent research efforts on the most critical issues;
- d) generate the needed cooperation between the research efforts of the participating institutions, and contribute to the development of greater economic problem-solving capability in the Philippines;
- e) make several micro-economic analyses of representative farm situations which reflect the specific geographical conditions in various regions of the country; these micro-economic studies are designed to provide the "intensive studies" called for in the four-year plan for agriculture which are needed to generate conclusive evidence that recommended production changes are in fact profitable alternatives for the farm in these different regions;
- f) generate not only finished individual research projects, but develop on-going approaches and mechanisms within the cooperating Philippine institutions to continue research in these problem areas when the

final portion of the study is completed at the end of 36 months.

Additionally, AD/M will select pilot regions or groups of provinces for analyses and extend these analyses to other areas, if time and resources will permit.

As stated earlier, the principal objective of the project is the development of empirical research capacity geared to the development of agricultural planning and goals. Agricultural policy as well as agro-industrial development have to be continuously reevaluated and research should provide a continuous flow of data and analyses which form the basis for revised planning as national and international economic opportunities change. It is anticipated that the project, upon its completion, shall have developed the organization and mechanism for the continuation of such activities. The B/Econ and CA-UPIB are expected to assume active roles and responsibilities; the B/Econ in support of its functions, to provide the informational needs for agricultural planning and programming, and C/UPIB, as a development training center for agricultural economic research.

ANALYTICAL APPROACH

1. Project AD/M aims to describe and analyze the agricultural structure over time, at the farm level and at the regional level, as to pattern of production and resource use.
2. Factor and product markets will be analyzed with emphasis on supply and demand, marketing and distribution, and perhaps to conduct feasibility studies in selected areas in the country.
3. A study will be made on the effects and changes in the agricultural

structure and market situation on farm income, on employment and productivity.

4. An exploration of non-farm linkages such as employment, integration of industries, etc., will be undertaken.

Words of caution are needed here. Any analysis designed to obtain an integrated picture of Philippine agriculture has to consider what the overall policy goals are and what policy options can be used to attain these goals.

Although the objectives enunciated above are quite clear, these have to be related with the development of the rest of the economy. They also need to be evaluated for consistency with each other within agriculture and with the rest of the economy. For example, the attainment of self-sufficiency may come at the expense of increased earning of foreign exchange or of increasing income. More categorically, with any given assumptions and with the limited resources available, trade-offs between policies and objectives exist. When one objective is attained, another objective may be sacrificed in part, if not in totality. We must therefore also study the extent and the nature of these trade-offs.

The above discussion leads to the needs for a study to establish optimum allocation of resources with indicated priorities.

POLICIES

The Philippine government is presently pursuing the following policies:

1. Obtain increased agricultural production from existing resources
2. Modernization of agriculture through the adoption of new technology

3. Diversification of production to achieve self-sufficiency for increased exports
4. Implement reforms at all levels of society.

Increased agricultural production - The concerted drive to attain higher output per hectare or per unit of other resources is a useful policy but it must be based on the availability of the means to do this economically. Perhaps then what will be required are new varieties of crops and new breeds of livestock which must be profitable to the farmer, and measures that will reduce the risk arising from the adoption of these varieties or breeds. Moreover, programs aimed at increasing agricultural output must be evaluated in terms of the total costs and benefits obtained by the farmer as well as by society. A major aim may be therefore the selection of a crop and livestock pattern that will be optimum for the Philippines.

Modernization - The adoption of improved cultural practices, the use of new varieties of crops, the raising of better types of livestock are not completely desirable in themselves. The investment in such inputs should be related to the size of economic returns. The adoption of mechanical technology may also be economical if it removes bottlenecks such as seasonal constraints of labor and animal power.

Diversification - (To distinguish between diversification and multiple cropping, refer to Appendix J, a copy of the Agricultural Economics, Statistics and Market News Digest of July 5, 1972) Diversification of production is desirable to reduce risks and to achieve the more complete utilization

of land, labor and other resources, as well as to increase outputs. However, diversification of agricultural products on a national level may not result in diversification at the farm level and in fact may lead to increased specialization. Diversification at the national level should be based on comparative advantage for both domestic and export possibilities. On the other hand, diversification at the farm level should be based on costs and returns.

Reforms - Reform, by its very connotation, is an external factor in the government program. But as implemented under the Martial Law administration, reform is expected to be both external and internal. There is a need not only for physical change and ideological change but also an internal change in the members of our society. In agriculture, reform has taken place in the agrarian sector through the land reform program. But we have gone beyond all this by wielding both the "carrot" and the "stick", the carrot as a motivation for increased productivity and the stick to instill not only national discipline but physical and ideological discipline. It is hoped that this policy will culminate in a conversion of the individual on the farm from a complacent producer to a positive contributor to economic development. Reform is now a significant variable in the production function and, if successful, should shift the function higher than previously. Project ADAM is studying the effect of this new policy variable on Philippine agriculture.

ACCOMPLISHMENTS

First Project Year (February 1, 1972 - January 31, 1973):

1. A survey of existing literature on diversification and agricultural economics has been completed. For this purpose

personnel of Project /D/M fanned out to the sources of information in the Greater Manila area and the provinces to collect the information needed.

Approximately 9,000 different journal articles, manuscripts, theses and the like were examined and read, and an abstract of their contents prepared.

2. From these an annotated bibliography has been prepared in seven (7) volumes and issued in preliminary form. (Working Paper No.
3. / short and preliminary review of Philippine agriculture was presented to the Philippine Council for Agricultural Research (PCAR) during the First Congress held in February on the formulation of a National Agricultural Research Program. This was also distributed to participants of the Congress who were mostly agricultural scientists and leaders in the different agricultural fields.
4. An analysis of BAEcon's 1970 data on the relationships between fertilizer and rice yields has been prepared and released as a working paper. This study, however, used only a sub-sample of the survey data collected by the Bureau of Agricultural Economics (Working Paper No. 2).
5. Budget data on inputs and outputs are being assembled and will be used for in-depth analysis in the different studies to be made.
6. Project /D/M personnel also went out to collect all available socio-economic data on the Philippines for use in the micro-

and macro-analyses to be undertaken later this year. Because of this accumulation of information, the project is becoming a virtual data bank.

7. Project ADAM has integrated into the project the National Research Council-assisted B/Econ study on economic family-size farms for palay areas utilizing a linear programming approach. This would be useful especially in land reform areas in the determination of what would be the optimum size farm for distribution to former share tenants.
8. The annotated bibliography has been distributed to all major libraries within the Greater Manila area and to those agencies who contributed the materials to the bibliography, as well as to entities and institutions concerned with development and productivity.
9. The materials for duplicating the bibliography were turned over to PCAR upon request which it used as the basic reference for the preparation of the National Agricultural Research Program in the Philippines during the Congress held in Los Baños in February.

Second Project Year (February 1, 1973 to-date):

1. To assist researchers and to provide an overview of Philippine agriculture, a comprehensive review of literature covered by the bibliography, has been prepared and issued as a Working Paper (Working Paper No. 3).

2. The building of an inter-regional production-marketing model has been initiated.
3. A working paper on the status of the fertilizer industry and the marketing and distributional system in the Philippines; and on world fertilizer prices is nearing completion. This will give a bird's eye view of the fertilizer capacity of the Philippines, the marketing aspects and the role of fertilizer as an input for a progressive agricultural economy.
4. An analysis of the effects of uncertainty on farm income has been started. This technique was developed by the Economic Research Service of the US Department of Agriculture.
5. The delineation of homogenous agro-economic areas in the Philippines has been started. This is necessary because with the given set of economic environmental requirements, some crops can be grown more productively in some specific areas in the country. This will enable us to identify those areas within which only particular types of crops and other agricultural activities can take place. When the delineation of these areas is completed, it will be possible to identify existing and potential patterns of agricultural production on a regional basis.
6. With the assistance of USAID consultants, the construction of a demand-price agricultural sector model for the Philippines has also been started. The planned model is similar to the Taiwan model and will make use of an 8-equation econometric model of Dr. Jose Encarnacion of the U.P. at Diliman. (See Appen. D).

As of June 15, Project ADAM, from its collection, compilation, and tabulation of data on the socio-economic characteristics of agriculture in the Philippines as well as related data, was enabled to prepare a total of 1,741 tables and charts. These information will comprise part of the data base being established; and together with the IAS statistics, these are being evaluated for adequacy and for subsequent integration in developing the homogenous agro-economic areas. Other sources of information will be the recent cost of production surveys on rice and corn by the Bureau of Agricultural Economics; the special surveys by IRRI, UPCA, and Ateneo University; and if available, the 1971 Census of Agriculture. Data gaps will be determined and if necessary and within our resources, special surveys will be undertaken to obtain the required information.

All of these will be used for the following types of analyses:

1. National policy analysis. In setting up the analysis, the various existing programs and those that will be planned will be considered together as particular policy mixes to determine the most efficient use of the country's resources in attaining the specified policy goals and objectives. One approach will be through the production-marketing model. In this model, each homogenous agro-economic area will be represented by a set of production activities that are suited to it. These areas will then be linked together through transportation, marketing and/or processing activities on a regional or national basis. The initial production of all crops, livestock and inland fisheries will be related to both domestic and export markets and the optimum combinations determined by linear programming.

Only selected portions of the model will be developed at first, and these will be limited in detail. We will begin by developing a sub-model of a commodity system starting with rice. Each of the 11 regions of the country will have irrigated one-season and two-season, rainfed and upland areas with 2 - 6 variations. This will involve about 5 to 20 rice-cropping activities for each region. In addition, an equal number of distribution, marketing and processing activities will be required, bringing the total number of activities to approximately 350. The resulting matrix will possibly have about the same number of rows (constraints) as columns (activities).

Upon completion of this sub-model, work will begin on construction of the corn-livestock sub-model which will then be combined with the rice sub-model. This will be linked with the agricultural sector demand model.

2. Micro-farm level analysis - The objective of this portion of the research is to isolate the impact of policy and other variables on the individual farmer as well as to determine how much of the new inputs and what combinations are profitable utilizing Philippine response coefficients. Work by the B/Econ's Research Division concerning the optimum-size farm in relation to land reform, as has been stated above, is being integrated into the work at Project ADAM.

a) Optimum size farm determination - This is a normative analysis of the optimum size farm under varying conditions using linear programming. Originally, the farm firm was assumed to use family labor only in combination with year-round irrigation, with varying planting seasons for rice, and growing more than a dozen other crops. Thus, labor was made the only constraint. Initial results show that

the farm size that maximizes farm income was found to be between 3 and 4 hectares of cropland.

The analysis has been modified for the study of palay farms under conditions of good irrigation for a one-year crop planning with 24 planting periods and utilizing early, late- and medium- maturing varieties. Upper and lower levels of family labor supply are considered. A land constraint is also introduced and is varied parametrically from one-half (0.5) to seven (7.0) hectares. Other variations introduced are: (1) hired planting and transplanting labor; and (2) hired additional animal power.

The first computer runs arrived in April and some results should be assembled in the next few weeks.

b) Farm simulation model - One of the most important considerations is the influence on income of changes in prices and yields of various enterprises on the farm. This is one way of looking at problems of uncertainty which face farmers due to variations in yields and the fluctuations in prices in a non-optimizing situation. A farm simulation model that was developed in the United States seems to be applicable here and shall be used to complement the analysis cited earlier. This approach, based upon a given situation, calculates income and the use of resources. The analysis can be repeated for different periods under different conditions or circumstances so that comparisons can be made through simulations of certainty and uncertainty conditions.

This type of analysis is now being tested for a farm producing one crop of rice and some other crops during the dry season with two

levels of technology. Comparisons will then be made of their differences in income for each level of technology under certainty and uncertainty conditions. From this, both gross and marginal benefit ratios can be compared with rates of return for each situation. If the test provides useful information, it will be used to tackle additional problems.

c) Analysis of B/Econ's 1972 I/S data - The analysis being done follows that of Working Paper No. 2, except that all the samples used in the January 1972 round will be utilized. A limiting factor to the analysis is the abnormality of production caused by the occurrence of tungro in some areas. If, however, those farms which had the disease can be identified and isolated, actual information might be derived about the effect of tungro on yield.

It is expected that because more than 18,000 samples were used in this round, the analysis can be done by region on the interrelationship between fertilizer and yield, as well as the distribution of yields. In Working Paper No. 2 by Atkinson and Kunkel the distribution of yields was shown to be skewed, that is, that the arithmetic means may be inadequate measures of what farmers are actually obtaining, thereby suggesting that the mode or median may be more a relevant measure for this purpose. Preliminary results from this analysis show significant deviations from normality of rice yields and indicate positive skewness, that is, the distribution has a relatively long tail to the right with the mode less than the mean. The spread of rice yields do not appear to manifest a normal density function but more of a Gamma distribution.

Implied from these results therefore is that economic models using average yields, whether micro- or macro-oriented, can over-estimate the yield more often than underestimate them.

d) Econometric demand-price agricultural sector analysis (proposed) -

This model will be a more explicit analysis of the agricultural sector and its interrelationship with the rest of the economy. A special computer program will combine the various prices and output series available in the Philippines, then calculate price indices and value aggregate of crops and livestock by possible categories for the food agricultural sector. The proposed model is attached as Appendix F. This was prepared by Richard J. Foote of USDA who visited the Philippines twice and stayed with Project ADAM for about three weeks. The participation of Philippine technical personnel throughout the development of the model and its application to agricultural planning will serve to establish the series and the method of analysis consistent with the more integrated agricultural planning goals of the Philippine government. This inter-sector regression approach will complement the activity analysis of the production-marketing linear programming model above.

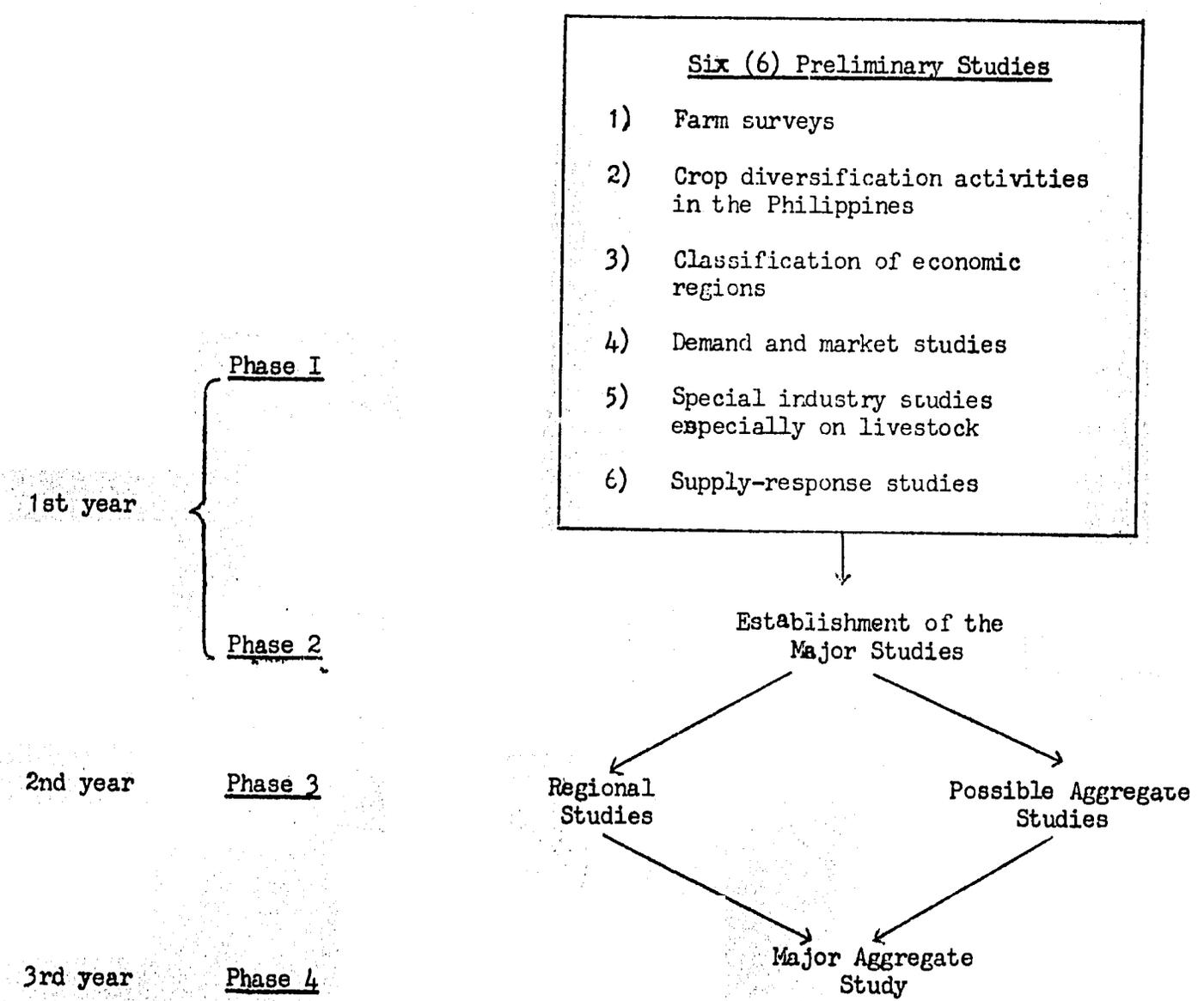
APPENDIX A

TENTATIVE TIMETABLE ON DIFFERENT RESEARCH PHASES

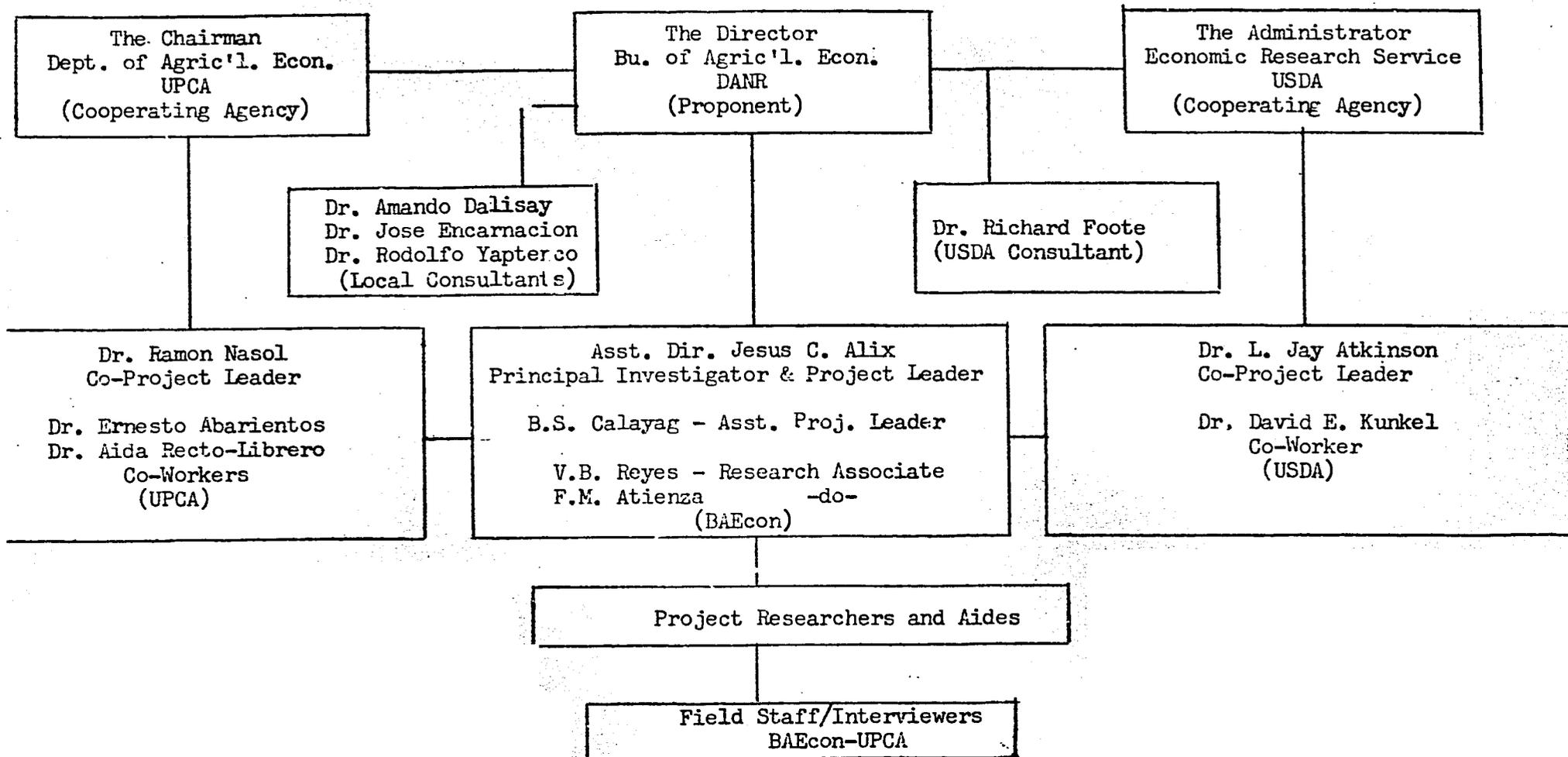
<u>PHASE</u>	<u>NATURE OF WORK</u>	<u>EXPECTED DURATION</u>
I	Intensive study and evaluation of existing data, analyses and program	3 months
II	Evaluation of initial studies, establishing special research projects and preliminary macro-analysis	9 months
III	Completion of regional micro-economic and industry studies, consolidation of the separate studies that have been undertaken into a preliminary draft of the final macro-economic analysis and initiation of analysis of trade prospects	12 months
IV	Preparation of intermediate and final reports for circulation and review, revision and publication of project report	12 months
TOTAL - - - - -		<u>36 months</u>

APPENDIX B

PLANNED STUDIES AND SCOPE OF ACTIVITY

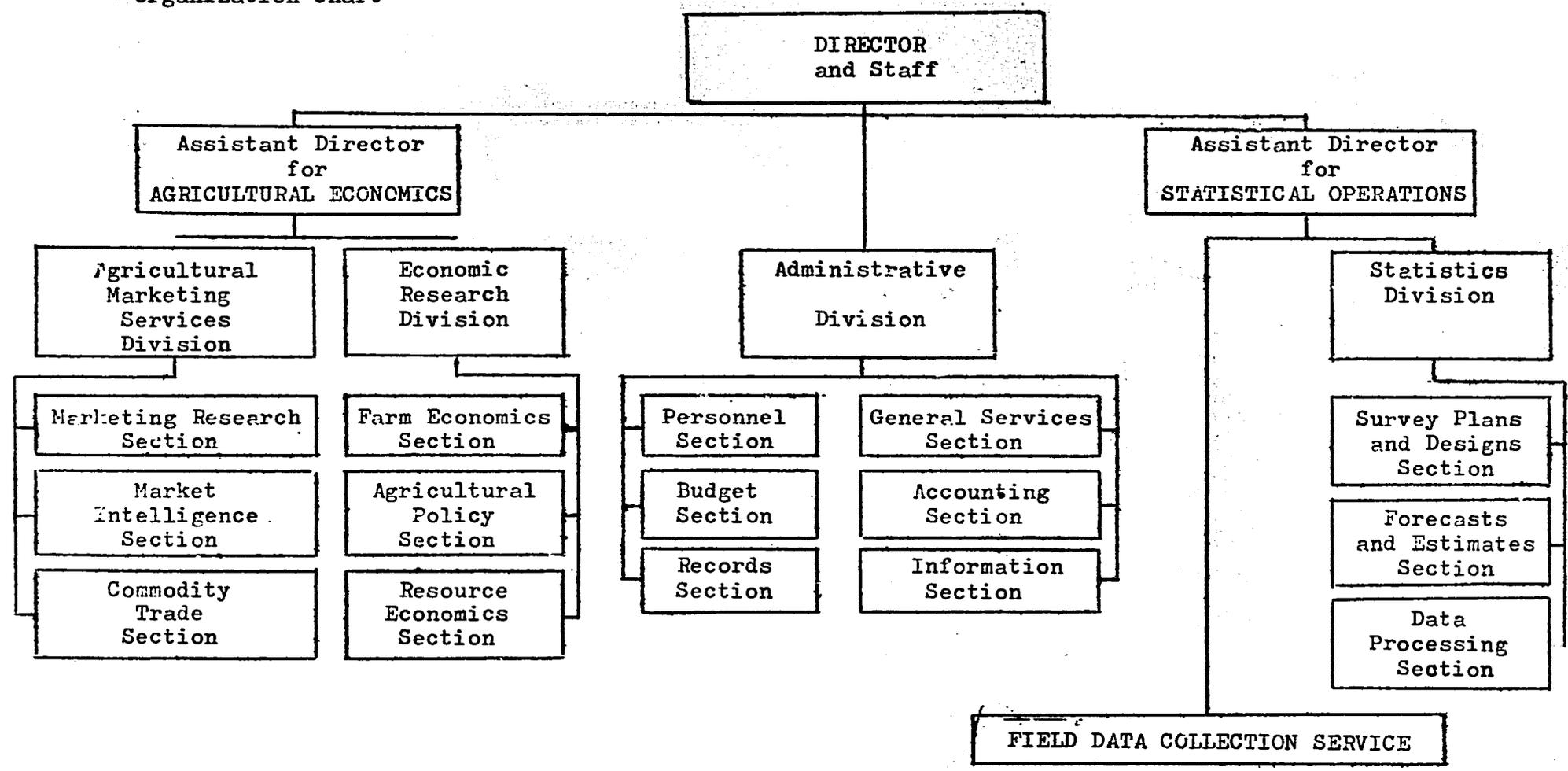


RESEARCH PROJECT ON
 AGRICULTURAL DIVERSIFICATION AND MARKETS
 IN THE PHILIPPINES



BUREAU OF AGRICULTURAL ECONOMICS

Organization Chart^{a/}



^{a/}Revised in accordance with the approved Staffing Pattern as of April 30, 1973.

APPENDIX D₁

CURRENT WORKFORCE OF PROJECT ADAM, INCLUDING CONSULTANTS

<u>Designation</u>	<u>Number</u>
Project Director	1
Project Leader	1
Project Consultants	1
a) Foreign	2
b) Local	
Co Project Leaders	2
Assistant Project Leaders	4
Research Associates on detail	2
Senior Research Associates	2
Senior Researchers	17
Research Assistants	14
Science Aide III	6
Emergency Science Aide	8
	<hr/>
TOTAL	60

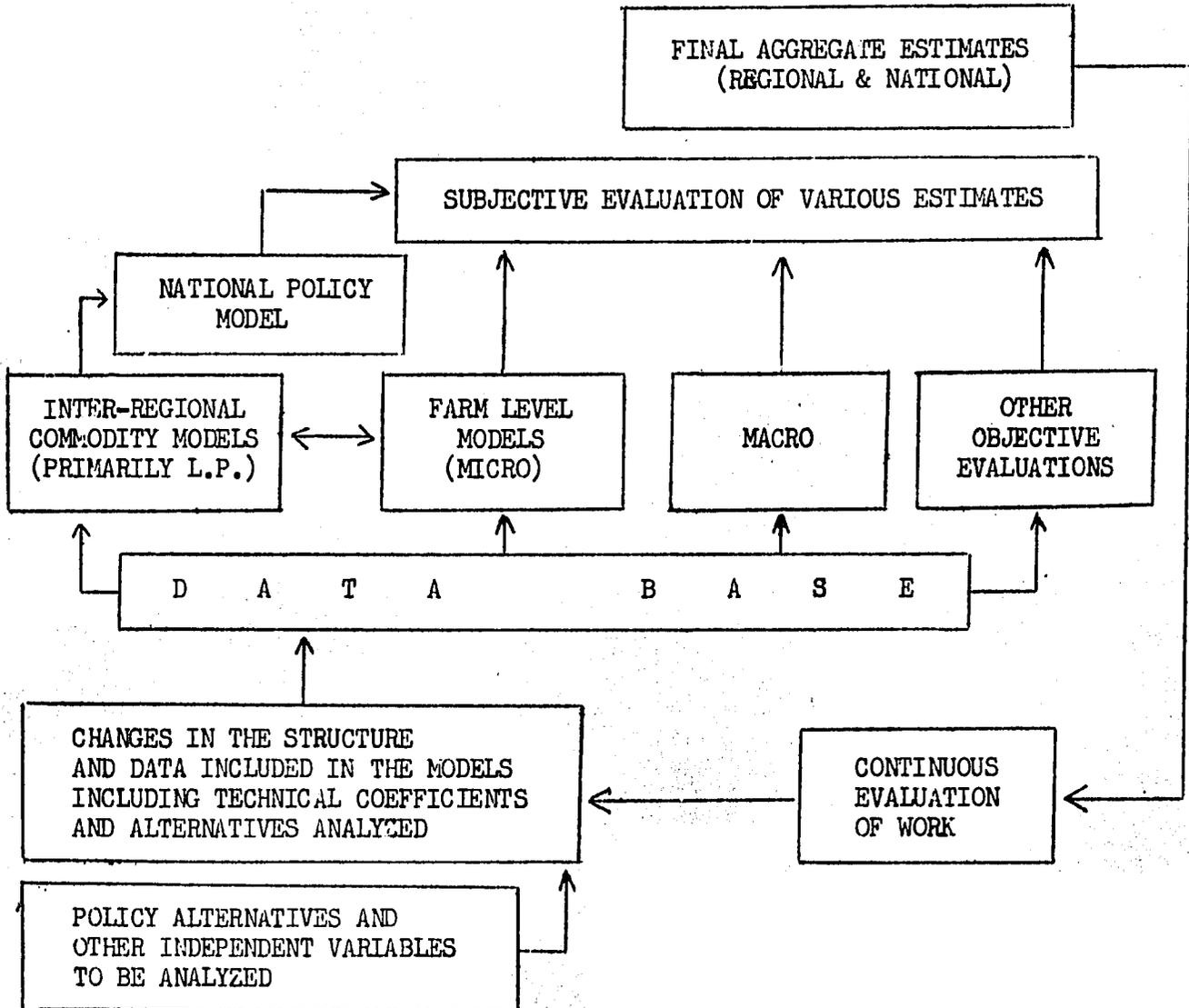
DEGREE OR EDUCATIONAL PREPARATION:
DISTRIBUTION BY STATION

	BAECON	UPCA	TOTAL
A. GRADUATES:			
Bachelor of Science in Agriculture	6 ^a	7 ^a	13 ^a
Bachelor of Science in Commerce	12 ^a	1	13 ^a
Bachelor of Science in Statistics	1 ^a		1 ^a
Bachelor of Arts	5 ^a		5 ^a
Bachelor of Science in Education	4 ^a		4 ^a
Secretarial Science	6 ^a	1	7 ^a
B. S. Biological Science	1		1
B. S. Medical Technology	1		1
High School	1	1	2
B. UNDERGRADUATES:			
Master's Degree	7 ^a	1 ^a	8 ^a
Bachelor of Science in Commerce	1 ^a	1	2 ^a
Bachelor of Science in Education	1		1
Dentistry	1		1
High School	1		1
TOTAL - - - - -	48 ^a	12 ^a	60 ^a

^aIncludes those with 2 or 3 degrees.

APPENDIX E

AGRICULTURAL PRODUCTION RESPONSE,
INCOME AND EMPLOYMENT ANALYSIS SYSTEM



PROPOSED AGRICULTURAL SECTOR MODEL FOR THE PHILIPPINES

General Notes

1. All quantitative data are in per capita terms
2. All price and value data are in real terms (prices to be divided by the Consumer Price Index for Manila, 1965 = 100)
3. Rice data relate to an October - September year
4. Other data relate to a July - June year
5. Livestock and poultry inventories are for either March 1 or January 1 preceding the start of the crop year
6. Livestock and poultry slaughter data and fish and egg production are computed as for the National Accounts

Endogenous Variables

- Y_1 - Derived disappearance of rice
- Y_2 - Net imports of rice
- Y_3 - Wholesale price of rice in Manila, weighted average of Wag-wag, Elon-elon and Macan
- Y_4 - Derived disappearance of corn
- Y_5 - Net imports of corn
- Y_6 - Wholesale price of White whole-grain in Manila
- Y_7 - Imports of wheat and wheat flour on a flour-equivalent basis
- Y_8 - Wholesale price of fresh Bangus fish in Manila
- Y_9 - Wholesale price of pork in Manila
- Y_{10} - Wholesale price of beef in Manila
- Y_{11} - Wholesale price of live undressed chickens in Manila
- Y_{12} - Wholesale price of Leghorn chicken eggs in Manila
- Y_{13} - Farm value of root crops per ton
- Y_{14} - Estimated slaughter of chickens and ducks, dressed-weight
- Y_{15} - Estimated slaughter of hogs, dressed-weight
- Y_{16} - Estimated slaughter of cattle and carabnos, dressed-weight

Y_{17} - Demand shifter (national income or net domestic product)

Predetermined Variables

- X_1 - Production of palay (rice equivalent)
- X_2 - Production of shelled corn
- X_3 - Value of imports of wheat flour per kilogram
- X_4 - Estimated production of fish
- X_5 - Inventory of pigs, adjusted for changes in technology
- X_6 - Inventory of cattle and carabaos, adjusted for changes in technology
- X_7 - Inventory of chicken and ducks, adjusted for changes in technology
- X_8 - Estimated production of chicken and duck eggs
- X_9 - Total production of root crops
- X_{10} - A price-weight index of production of all commodities included in the model
- X_{11} - X_5 , X_7 , and X_8 combination based on relative consumption of grain
- X_{12} - A price-weighted index of production for rice, corn, pigs, fish, and poultry

Additional predetermined variables from the macro-model will be used in the first-round equation for Y_{17} .

Identities

$$(1) Y_1 = Y_2 + X_1$$

$$(2) Y_4 = Y_5 + X_2$$

Stochastic equations to be fit by 3-stage least squares

$$(3) Y_1 = f(Y_3, Y_6, Y_8, Y_{17}, X_{11})$$

$$(4) Y_3 = f(X_1, X_2, X_3, X_4, X_{11}, Y_{17})$$

$$(5) Y_4 = f(Y_3, Y_6, Y_{17}, X_{11})$$

- (6) $Y_5 = f(X_1, X_2, X_9, X_{11})$
- (7) $Y_7 = f(Y_3, Y_{17}, X_3)$
- (8) $Y_8 = f(Y_3, Y_{14}, Y_{15}, Y_{17}, X_4)$
- (9) $Y_9 = f(Y_{14}, Y_{15}, Y_{17}, X_4)$
- (10) $Y_{10} = f(Y_{15}, Y_{16}, Y_{17})$
- (11) $Y_{11} = f(Y_{14}, Y_{15}, Y_{17}, X_4)$
- (12) $Y_{12} = f(Y_{17}, X_8)$
- (13) $Y_{13} = f(X_1, X_2, X_9, X_{11}, Y_{17})$
- (14) $Y_{14} = f(Y_3, Y_6, Y_{11}, Y_{12}, X_7)$
- (15) $Y_{15} = f(Y_3, Y_6, Y_9, X_5)$
- (16) $Y_{16} = f(Y_6, Y_{10}, X_6)$

(Note: As a part of this model, Y_{17} will be estimated from a 1st-round equation based on X_{10} on X_{12} and predetermined variables from the macro-model. For analytical purposes, averages of calendar-year calculated values from the macro-model will be used).

A proposed sub-model

Simple models at times give better results than complex ones. Hence, a sub-model consisting of Y_1 to Y_6 , Y_8 , Y_9 , Y_{11} , Y_{14} , Y_{15} , and Y_{17} , with appropriate predetermined variables will also be tested.

Choice of variables for the stochastic equations

Due to problems of multicollinearity and the small number of observations, a choice must be made between potential substitutes and complementary commodities to be included in specific equations. Choice of fitted equations for the final model will be made in three stages: (1) Minor variables with signs contrary to economic expectations will be dropped, (2) substitutions will be made for equations for which signs for major variables (own price or quantity and in most cases the demand shifter) are contrary to economic expectations, with (3) final choice between final sets of equations after steps 2 and 3 have been completed will be based on the predictive ability of the models for major variables (4) over the period of fit and outside the period of fit based chiefly on Theil's U-coefficient.

Years to be covered

1955-56 through 1968-69 will be used for the fit. Currently, data are available for 1969-70 and 1970-71. "Forecasts" will be made also for 1971-72 and 1972-73 based on available information.

APPENDIX G

BUDGETARY REQUIREMENTS, BY YEAR
(in pesos)

I T E M	1st Year Phase 1 & 2	2nd Year Phase 3	3rd Year Phase 4	TOTAL
1. Salaries and wages ^{a/}	169,000	255,000	130,000	554,000
2. Travel expenses	25,000	50,000	10,000	85,000
3. Supplies and Materials	10,000	25,000	15,000	50,000
4. Contractual services	75,000	150,000	75,000	300,000
5. Equipment outlay	239,900	95,500	-	335,400
6. Contingencies (10% of total)	57,700	63,900	25,600	147,200
TOTAL	576,600	639,400	255,600	1,471,600

^{a/}Excluding salaries of technical personnel from respective cooperating agencies.

ITEMIZED PROJECT FUNDS

Code	Particular	FIRST YEAR		SECOND YEAR
		February 1972 - January 1973	February 1973 - January 1974	February 1973 - January 1974
		NSDB Approved	Actual Expenditures	NSDB Approved
01	Personal Services			
	a) Salaries	₱138,000	₱ 131,778.44	₱244,200
	b) Wages	24,000	822.84	20,000
02	Traveling Expenses	10,000	5,707.20	20,000
07	Supplies and Materials	4,100	4,094.42	18,798
06	Sundry Expenses	13,391	744.80	15,000
06(B)	Special Purposes	6,509	6,509.00	12,002
21	Equipment Outlay	-0-	-0-	-0-
	T O T A L	₱196,000	₱ 149,656.70	₱330,000

APPENDIX H₁

Commodities Being Procured by USAID for Project ADAM

PIO/C 492-126-0-30054

*1 ea.	Printing Calculator, electronic, statistical Programmable, 220 Volts, 60 Hz, AC, Monroe Model 1766	\$ 1,593.00
*1 ea.	Card Reader, Monroe Model CR-1	265.50
**2 ea.	Printing/Display Calculator, Monroe Model 1340 electronic, 220 Volts, 60 Hz, AC, @ \$667.00 ea.	1,334.00
**3 ea.	Printing Calculator, Monroe Model 1320, electronic, 220 Volts, 60 Hz, AC, @ \$547.40 ea.	1,642.20
**3 ea.	Electronic Display Calculator, Portable Monroe Model 20, 8-digit capacity, 220 Volts, 60 Hz, Bc-6 Charger, @ \$156.63 ea.	469.89
		<hr/>
	Total Cost FOB Pt. of Entry, Manila, Philippines	\$ 5,039.63

P10/C 492-126-8-30096

3 ea. Truck, Carryall (Conventional) 4 X 4,
6 Passengers, @ \$4,097.00 ea.

*Items received by BAEcon on May 16, 1973.
** " " " " " August 3, 1973.

APPENDIX H₂

Excess Property Provided by USAID to Project ADAM
6 June 1973

Desk Typist	3	Each
Chair, Executive, Swivel w/ arms	3	"
Chair, Typist, Narra	4	"
Chair, straight, steel w/o arm	5	"
Chair, straight, steel w/ arm	3	"
Settee, wood, 3-sitter w/ cushion	1	"
Armchair, wood w/ cushion	4	"
Table End, wood	2	"
Table Corner, wood	2	"
Table, Coffee, wood	1	"
Table, serving, wood	1	"
Chest of Drawers, wood	2	"
Buffet, wood	1	"
Table, dining, narra	1	"
Table, dining, extension	2	"
Air Condition unit, "Fedders" 12,000 BTU (Transferred at no cost to GOP against Pro- ject No. 492-51-190-126 under PIO/C 492-126-0-2005)	4	"
Bookcase, narra	3	"
Refrigerator, electric, 110 Volts, 13 cu. ft. 2-door, GE (Transfer w/o cost for use BAECON as project contribution per DPA #337 dated 2/24/72)	1	"
Typewriter, IBM electric	2	"
Adding Machine, Friden	1	"
Radio Transmitter/Receiver, land type	1	"
Typewriter, Underwood, 13" carriage, non-portable, manual	3	"
Air Condition unit, window type, Fedders	2	"
Typewriter, Royal (608 from Saigon), 16"	1	"
Typewriter, portable, w/carrying case	4	"
Desk Calculator, Friden (Loan Basis)	1	"
Typewriters, Royal & Underwood, 16" carriage	6	"

APPENDIX H₃

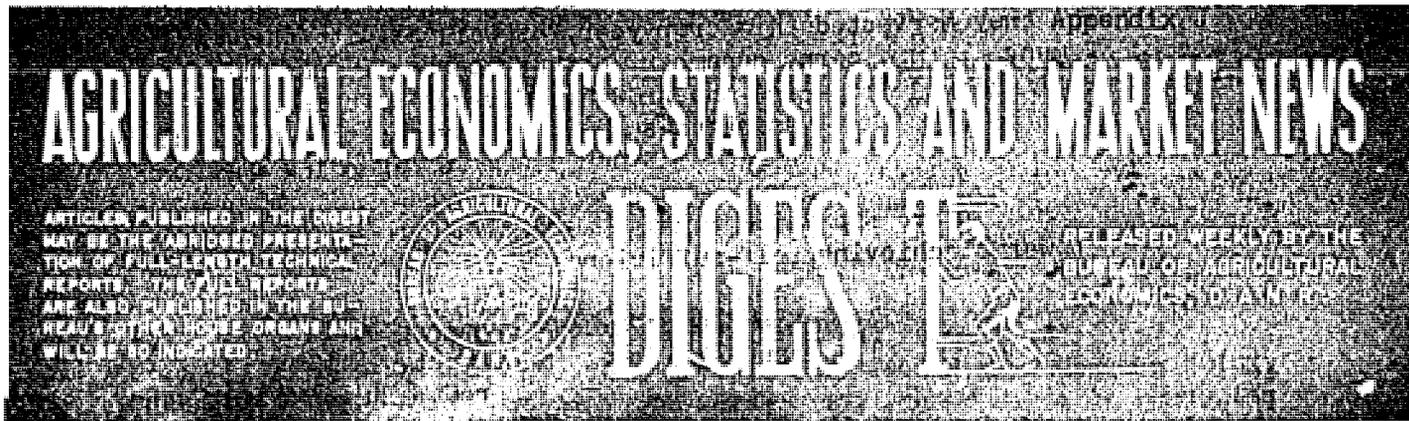
Items to be Procured by USAID for Project ADAM, BAEcon

1	ea.	Printing Calculator, electronic, statistical programmable, 220 volts, 60 Hz, AC, Monroe Model 1766	\$ 1,593.00
1	ea.	Card Reader, Monroe Model ICR-1	265.00
3	ea.	Electronic Display Calculator, Portable Monroe Model 20" @ \$156.63 ea.	470.00
2	ea.	Typewriter, electric, IBM, Executive, 17" carriage @ \$679.00 ea.	1,358.00
4	ea.	Typewriter, manual, 18" @ \$250.00 ea.	1,000.00
4	ea.	Air Condition unit, 14,000 BTU	936.00
			<hr/>
Total - - - - -			\$ 6,622.00

List of Statistical Tables Prepared, by Subject and Region
(As of June 15, 1973)

SUBJECT	R E G I O N												TOTAL
	1 I-R	2 C-V	3 C-L	4 S-L	5 B-R	6 W-V	7 E-V	8 W-M	9 N-M	10 S-M	11 G-M	12 R-P	
1. Land and Climate	:Tables	20	20	33	35	15	23	17	11	11	7		192
	:Figures			13									13
	:Write-ups			11									11
2. Crops and Animals	:Tables	56		106	108		91	90					451
	:Figures			9									9
	:Write-ups			3									3
3. Capital and Credit	:Tables	65	42	69	69	72	73	69	64	71	41	46	681
	:Figures			10									10
	:Write-ups			13									13
4. Income and Expenditure	:Tables			10									10
	:Figures												
	:Write-ups												
5. Population & Employment	:Tables	11	20	20	20	17	20	22	23	14	20	11	198
	:Figures		3										3
	:Write-ups		4										4
6. Prices and Others	:Tables											209	209
	:Figures											34	34
	:Write-ups												
TOTAL	:Tables	152	82	238	232	104	207	198	98	96	68	266	1,741
	:Figures			35								34	69
	:Write-ups			31									31

Not yet included are sets of maps acquired, estimates of areas with transparent paper grids; meetings attended and others.



Volume VI, Number 27 O July 15, 1973

MULTIPLE-CROPPING AND DIVERSIFICATION
TO ACHIEVE SELF-SUFFICIENCY IN FOOD PRODUCTION

Present agricultural policy still adheres to the objective of ultimate attainment of sufficiency in food supply. Numerous government projects reflect this policy, but the more recent ones manifest a shift in emphasis from single-cropping to multiple-cropping and/or diversification in farm productive activities.

Firstly, however, it may be best to distinguish between the two terms "multiple-cropping" and "diversification". At times these two are taken to be synonymous; strictly speaking, they are not. Multiple-cropping has reference to the growing of two or more crops in the same area in one year. It is, therefore, a cropping system. On the other hand, agricultural diversification may or may not include multiple-cropping. Consequently, agricultural diversification is a broader term which refers to the cropping structure on a wider scale involving perhaps regions or areas within national boundaries. On a national level, agricultural diversification would mean the growing of diverse crops in areas where each of these are most suitable economically as well as ecologically, singly or in combination with other crops, whether via intercropping or as a crop rotation scheme. The latter, of course, would then be what we call multiple-cropping and becomes synonymous with diversification in this sense.

The role of multiple-cropping is to more fully utilize the land, labor, and available capital resources. The land is made to produce more and different crops; labor unemployment and underemployment are expected to be reduced; and capital can earn more because of more efficient utilization. Diversification proposes to utilize these resources more fully by a determination of crops-land suitability and the size of economic returns of different cropping patterns which would most appropriately be tailored to environmental conditions as well as to technological and market conditions.

The Asian Pacific Council (ASPAC) project in Cinco-cinco, Sto. Domingo and Talavera areas both in Nueva Ecija, and the Moshav type of cooperative project in General Ricarte, two Israeli consultants have succeeded in convincing farmers that it pays to plant more than one crop a year besides rice. The farmers in those areas are quite enthusiastic about the yields of rice they harvested this crop year, as well as with the additional crops of mungo beans, corn, cucumber, chinese cabbage, and other vegetables. Even in clay soils where the growing of vegetables is not recommended, the successful plantings of these different vegetables are indications that we may have to change some of our concepts regarding what can be grown and what can not be grown on certain soil types. Certainly, these demonstrations are significant clues to what can be done in the Philippines towards achieving self-sufficiency in food.

These statements probably make this system sound so viable, but this need not be the case at all because there are many factors to be contented with and these should all be seriously considered. But it is not the intention to discuss this here. The main consideration is whether multiple-cropping and/or diversification can lead us to ultimately solve the perennial problem of insufficient food supply.

On the other side of the coin, we should not regard multiple-cropping as a panacea for what ails the agricultural supply situation. It may still be wiser to import certain food items rather than produce them locally simply because the cost of producing them here will be prohibitive compared to importing them. On the other hand, we should begin to ask the question that if we do achieve self-sufficiency in most prime agricultural commodities whether we should stop there and not proceed to incur surpluses. We can recall that when we were able to accumulate a marketable surplus of rice in 1969, we found difficulty in disposing of this outside the country. This is a second generation problem that would appear not to be of immediate concern, but this is precisely what we want to avoid, that is, creating another problem after having solved one problem. If, with the use of modern inputs, we are able to increase the production of the major agricultural products, perhaps the next logical step would be to consider whether what is called for would be a reduction in areas devoted to these crops. Almost automatically the next question becomes, if we do reduce crop areas, for example palay, with what do we replace this? Even then we would be faced with another second generation problem.

Project ADAM (an acronym for Agricultural Diversification and Markets in the Philippines), which is a joint project of the Bureau of Agricultural Economics (B/Econ), the University of the Philippines College of Agriculture (UFCA), the Economic Research Service, United States Department of Agriculture AID (ERS, USDA), and National Science Development Board (NSDB) proposes to undertake continuing studies that should be able to answer many if not all of the questions posed above, questions that are both direct and implied.

J.C. ALIX.

DISCUSSION PAPER

Discussant: Alejandro R. Apacible

I note with admiration the extent of work that has already been accomplished during the first project year and the speed with which it was done. The result of such a study will certainly be of great value to planners and policy makers alike. The seven (7) volumes of annotated bibliography alone will be a big assistance to researchers from both the government and the private sector. The various projects and studies programmed for the second year are also worthy of attention. Such studies will provide planners and policy makers with the strongest foundation and a broader base for planning and making policy recommendations. It will permit those who are burdened with the responsibility of planning the future of our agricultural economy with more effective use of the policy instrument at their disposal. I find it encouraging to note also a change that has been taking place for some time now in the orientation of agricultural research. Whereas before, researches were concentrated mainly on the purely physical side of production, studies are now being done covering the market, the financial and even the human aspect of production. This is an evidence of the growing realities of the concern that, in addition to the micro studies, all spots of the research must also be studied in totality. For example, in the Board of Investments, under my department, are five sections and

* Agro-Industrial Director, Board of Investments.

in each section . . . we have one financial analyst; we have one marketing analyst; the others are technical men. Aside from this, we also have in the Board of Investments, sets of economists whom we may consult from time to time and the reason was to really make all the programs being presented to the Board of Investments . . . viable. And so, therefore, we have to look into all the phases of production, and marketing.

This meeting is very timely as far as we are concerned in the Board of Investments; hence, I have with me here four of our technical men. This project is very timely indeed, in view of our limited and decreasing resources and the increasing pressure of population upon which we cannot afford to make many mistakes. With your permission I would like to indicate some of the areas where we, in the BOI, and some other agencies assigned with similar tasks, would like to see more research done. One of these would probably come as a by-product of your study related to the marketing and the distribution system on the national level. In other words, the flow of commodities from the producer to the consumer and their flow between regions. I am referring to the estimates of the services and facilities - such as processing and storage and transporting of agricultural products particularly rice and feedgrains and even protein products, both meat and vegetables - that would be required in affecting such movement. Such estimates of services and facilities will likewise be needed in the efficient distribution of supplies over time. In line with the efforts of the government to uplift the living conditions of the poor, especially those in

the rural areas, and the main efforts to ensure that development takes place with social justice, we at the BOI are guided by the following policies.

1) Maximization of employment opportunities:

- a. Application of labor intensity criterion for the selection of projects;
- b. Progressive increase in domestic content;
- c. Subcontracting scheme as illustrated by the contract-growing scheme in broiler production and the semi-contractual operation in fishing.

Very soon we might adopt this also for piggery.

2) Promotion of small and medium-scale industries;

3) Intensified support for export-oriented industries;

4) The objectives of our program and endeavor should be in the long run compatible with our national economy and advancement towards socially oriented goals.

It becomes evident that the results of your study will be very useful, and I would venture to say, become a necessary guide and basis for the implementation of our agro-industrial program. Thank you.

DISCUSSION PAPER

Discussant: Dr. Amando M. Dalisay*

Director Alix, ladies and gentlemen. I have so little to say after having participated in the review program and other discussions regarding this project. However, because of the importance of this project on future planning and policy making I would hazard some general and specific comments.

General comments: Project ADAM is a first-attempt approach, in a comprehensive manner, to the problems of and constraints to agricultural productivity and to develop the analytical scheme that will provide a sound basis for agricultural planning and policy formulation. Both the objectives of the study in relation to well-articulated problem areas of Philippine Agriculture as explained by Director Alix and the scope of work envisioned by the proponent indicate promising and feasible end results. It must be recognized that the principal objective of Project ADAM is "the development of empirical research capacity geared to the development of agricultural planning and goal." This is based on the conviction that research should provide a continuous flow of data and analysis which formed the basis for revised planning and as the national and international economic opportunities change. In a growing economy like ours, this revision and evaluation of plans and programs is almost indispensable.

* Executive Secretary, National Research Council of the Philippines

Specific comments: The analytical approach as indicated in pages 6 and 7 of Director Paulino's and Alix's paper which has been reviewed today is, I think, sound. It is evolved from frequent discussions among the researchers themselves and with the constituents and the consultants, both local and foreign, who desire to approach these problems of agricultural productivity at the national and regional level and to utilize both micro and macro approaches to the gathering of data and the development of mechanism for continuing analysis. The analytical approach has, however, certain unavoidable weaknesses. First, in relation to the interpretation of public policies for agriculture; and second, in the use of simulation and econometric models which by their very nature do not provide for certain vital factors affecting growth and transformation of the agricultural sector. I am talking of the Philippine agricultural sector. For instance, the approach to modernization of agriculture through the adoption of new technology is certainly a quite narrow approach. For the transformation of traditional agriculture like ours involves not only the adoption of new technology but also the organization of the countryside which requires institutional reform and the development of human institution essential to agricultural development. Furthermore, in considering new technology as a means to increased productivity on individual farms, there is a need for appreciating and recognizing improvement of traditional practices on the small holdings besides the adoption of the new technologies of IRRI and other research institutions. In the case of farmers' [adoption of new technology] versus the economy of operations of traditional practices on small farms in

irrigated areas the net returns or trade-offs must be considered, instead of higher physical production alone. I think our mistake from the very beginning in considering the effects of new technology was to look at aggregate productivity without considering net returns; in many cases the net returns are very disappointing because of their minimality.

Moreover, the organization of the countryside (which we call the institutional aspect), as an essential aspect of transformation in agriculture, will be viewed in terms of improvement or orientation of existing institutions rather than building up brand-new institutions. The investment in mechanized input, even if related to economic returns, must be evaluated in terms of its impact on the farmer and his family and on the question of unemployment in the barrios. Mechanization may remove bottlenecks to production for the community as a whole, but it may create problems of employment, investment and stability for individual farm tenure. In other words, we can never consider mechanization as a panacea for many of the defects or shortcomings of agricultural productivity.

Viewed against our present campaign for Masagana 99, the adoption of new technology will entail not only greater credit risk; this may be minimized by the government through liberal credit assistance and also through package deals which require new and enlarged institutions to deal with larger volumes of necessary inputs or equipment. More efficient research and extension systems will therefore have to be developed in order to deal effectively with second generation problems, with

particular reference to the Green Revolution. All these lead to the need for a more careful analysis of policies and goals as well as a more deliberate approach in the selection of desirable policy mixes. The view that diversification at the national level should be based on comparative advantage is at best a first approximation. The final or net result should be attained on the basis of an understanding of the explicit or desirable goals for the entire economy and the value that pre-dominates in our society.

Again, the goal of self-sufficiency should be tempered with the objectives of higher levels of nutrition, better employment and equal opportunities for further human resource development. In other words, we should not push our goals to self-sufficiency too hard by neglecting the aspects I have mentioned, which are quite as important. More important perhaps, the analytical approach to agricultural diversification and markets must be fully re-oriented to the movement for reforms, which are both external and internal to agriculture as recognized by the proponents. And I am very happy that we have given emphasis to our movement for reforms. As such, these reforms that are now being implemented by the government are both tenurial and institutional, affecting the structure of agriculture, the distribution of income and of the labor force, and the structure and function of the public services in agriculture. The need for incorporating this vital aspect in the analytical approach to this project is quite obvious. Regrettably, the concentrated simulation model and the national econometric model are not in a position to provide for this aspect. Some such other models must therefore

be developed in collaboration with the sociologist, political scientist, and other social science specialists. The objective therefore of putting this Project ADAM as a multi-disciplinary approach can be attained through this means. Thank you.

DISCUSSION PAPER

Discussant: Dr. David E. Kunkel

I don't have any prepared remarks: I'll only make a few observations.

In looking at the development process and thinking about how income and employment can be created in rural areas, you have to look not only at what is happening on the farm but also at what is happening in the small towns and in the regional trading centers that connect these towns. If you look at what has happened in agriculture across countries which we call poorly-developed, less developed, and more developed, you find that the population on farms begins declining at some point and in fact, I think it has begun declining here. If the people who come off the farm are to have something to do, they must use the skills that they are adept at. These skills relate to agriculture and can be best used in agriculturally related industries on what has come to be known as agribusiness.

So therefore, you can't look just at the farmers, but you have to look at what kinds of rural-based industries the farmers can move to from which they can earn additional income either by farming part-time and working part-time in some industries or others. So I think the approach that ADAM should take is this (I have to say that I am working full-time on ADAM and so I consider myself part of ADAM) - we want to look at agriculture in what I might call systems approach, total

* Economist, Economic Research Service, U.S. Department of Agriculture, and Asst. Project Leader, Project ADAM.

systems approach. We cannot ignore "non-farm linkages". In fact we have to think of agricultural industries that relate to on-farm production and therefore some of our analyses does include this portion of looking at agriculture. And we will be trying to fit in; how rural-based industries fit in with the agricultural production part.

We cannot say technology is not necessary; the time is past when technology is not necessary for increased agricultural production. I would agree that you have to also change the structure of the whole rural countryside to obtain agricultural development. But also, we must live up to the fact that population is increasing. The demand for food is going to increase until population growth begins to decline, and this is what is happening throughout the world. There is only little land left for development, of the part that is not already in agricultural production, and therefore increased food production has to come from increased productivity. So I guess I would add this comment in that we have to look at the total rural economy and how each part relates to each other and what kind of investment, what kind of development must take place within the whole structure. Not just on the farm but in the small towns, in the processing industry, in transportation; in the whole system of the agricultural structure. I thank you.

DISCUSSION PAPER

Discussant: Dr. Thomas G. Flores

Director Alix, colleagues, friends. When I got the invitation to be a participant in the panel of discussants, I was the Director of the Socio-Economic Research Division of PCAR but as of three days ago, I relinquished that job and accepted another one, still in PCAR. I was informed that the governing council of PCAR approved my appointment as Director of Technical Services which would be in charge of providing, hopefully, the bridge between the research agency, that is PCAR, and the end-users and media. At the same time, it seems that they are still looking for a Director for the Socio-Economic Research Division, and I have been asked to serve as Officer-In-Charge.

I would like to echo the words of Director Apacible with regards the study, that is, Project ADAM, and the amount of work that has already been accomplished. Oftentimes, researchers or proponents of research with good ideas look for funds; when they get it, the work oftentimes doesn't seem to go as smoothly as it should. But in this case, I am amazed about the work done in a short state of one year, (because I know the amount of work that has gone into the seven volumes, since PCAR did use the seven volumes in its First National Agricultural Systems Congress held in February). I must congratulate the Bureau of Agricultural Economics for having done such a good job.

* Director of Technical Services, Philippine Council for Agricultural Research; Officer-In-Charge, Division of Socio-Economics Research.

In not being an economist, but being an agriculturist - as a generalist interested not only in agricultural productivity but also in what happens to whom production is worth or is directed to, as the human beings who make use of agricultural production - my comments will be of general nature.

A study like Project ADAM is not only timely, it is long overdue since we know very well that policies do affect the activities in a country, and that these policies should be based on empirical data; data discovered by people qualified to get the data, not through the policy of hit-and-miss. As Mr. Laudencia pointed out, much of our government activities has been on a cash-basis. It's surprising that in the country like ours, the way I am told, we have the most number of qualified people with regards to education; yet we are still at this point where we depend much on what certain individuals think and not on what is found through evidence. And so while I think that Project ADAM is going to serve a very useful purpose in terms of the data that have been collected and the models that could be derived from the data collected, which would be used to predict certain kinds of agricultural situation, I would hope that, as you think of the completion of the project, you think also of the continuity in terms of getting the information, and being able to use the information as it changes from time to time.

I am glad that this research is being done by the Bureau of Agricultural Economics and not by an institution like U.P. College of Agriculture where you find that many researchers are interested in a research

project and after that, that is all. They see to it that it's published and they go on to another research project, until you find that many of our researches get into print and then stay on the library shelf, not of much use. Now, in this case, with all those things that have been collected and the results that will come from it, the Bureau of Agricultural Economics is in a wonderful position to work out its system (after all, who knows, Director Alix may not be there forever) to continue getting this kind of data. I can see that they had a difficult time collecting these data. If you look at the tables (specially that table which showed costs), I could appreciate the difficulty that they had in digging up all of these information and I am sure that they haven't gotten all of them yet as was pointed out. It is difficult to get this kind of information.

And so in the process, since we have gone through this experience in the past year, if we could locate certain areas which could become more or less regional centers for easy data collection, I think the proponent of this research will have made a good contribution for the future and at the same time devise a system where this kind of information could be fed regularly to an agency, such as BAEcon, which can make use of it. Researchers have a tendency to dig up data but often they don't think of how it can be used; for me, research is of not much use until it is used. This is one of the problems between the scientist and the end-users - there is a big gap. But oftentimes the researchers are not that much interested in how it is going to be used. Now in an economics project, and that is Project ADAM, I don't think

you can afford to think that way. The data is very useful and we should see to it that it is going to be used in a manner that will benefit our country.

I was wondering in terms of forming these models and I'd like to throw this question to Director Alix since it would be possible to think of the micro-type models that will be able to predict agricultural productivity, taking into account all of those elements that you indicated (and this is in connection with the comments of Dr. Dalisay). We have to think of what happens to the small farmer, all of the facets [related to] them. I think we are convinced that we have not given enough thought to the small farmer. And now we are going into this kind of situation because of our neglect and it is about time, especially now that the climate is right. We do have land reform; we do have massive government programs directed to the rural people. For us who are way up here doing research [we need] to look down a little bit, and I only use these terms for picturesque speech. I don't really mean it in that term, but research is oftentimes amiss of the boat by not thinking of the small farmers. And I hope that Director Alix will impress his people with the necessity to think of Project ADAM not only in providing this body of data for policy planning at the top level, but also getting the kind of data which eventually will redound to the benefit of the small farmers. Thank you.

COMMENTS ON THE DISCUSSION PAPERS

Jesus C. Alix*

I will respond in the order that the discussants [spoke] but before I do that, I would like to inform the audience today that we came and tried to be as ready as we could be.

I've always believed in the maxim that when you try to do something you must not hog it to yourself; that no matter how good you are at anything, you don't know everything. And so because of this, in all the endeavours that we have undertaken in the Bureau of Agricultural Economics, we have always involved a lot of other people because we know that they can help us; we know that we can depend on them; we know that we do not know everything. And so in this case may I introduce [our co-workers] so that when the questions come you will know that I will throw some of these questions to some of our companions at Project ADAM.

We have with us two of our discussants, Dr. Dalisay and Dr. Kunkel. We have Dr. Abarientos, Dr. Nasol and Dr. Librero and we have Mr. Atienza who is working on the NRC project on the determination of optimum size farms in land reform areas; he knows the ins and outs of this problem. And, of course, I can probably take care of some of the questions but not all.

Director Apacible, I thank you very much for the very kind and very complimentary remarks which you made about Project ADAM. We are

* Assistant Director, Bureau of Agricultural Economics and Project Leader, Project ADAM.

encouraged to do more; we are encouraged to continue with our research. You will probably realize that we met not too long ago on that grape hearing when we presented our paper on the Economics of Grape Culture in the Philippines. We hope that you have made good use of that paper which contains the results of the nationwide survey on the economics of grape growing in the Philippines.

Your suggestion is well taken about marketing and distribution systems. We actually - outside of ADAM because we have been doing this already for sometime now - have conducted a survey on this; the results are finished and we are currently preparing the manuscript. This is the study "Breakdown of Marketing Costs of Fruits and Vegetables" conducted in Davao City, Iloilo City, Cebu City, and one in Luzon, I think it is the Greater Manila area. As soon as these are available, we will provide you with copies. At the present time, we are rushing to beat the June 30 deadline to be able to come up with some results, something that we can show to justify why this study should be continued.

We are now working with the Bureau of Fisheries on the determination of how much, really, of the fish catch lands, or is unloaded at the Navotas Fish Terminal Market. While we did not have the time to initiate it sooner, when we decided to go ahead, even if there were only two weeks left of the fiscal year, we went ahead with it anyway. We now have 58 people working from 2:00 P.M. up to 11:00 P.M. in the evening; and because of this they also have to beat the curfew. All the different exits and entrances of the terminal market are covered so that all fish dealers are covered. In this manner, we get to know how

much fish is landed at Navotas, how much of each species. And then for this last week of June we are tracing where this fish is going: to what provinces, to what markets, and so on. Our people are also going with the trucks, with the amphibians and with the jeeps so that they will know where the fish is moving to. Actually we already have a preliminary report for the first week, of how much fish was landed at Navotas. And this is, we hope, very reliable information that could be useful at least for the month of June. I mention this just to show you that aside from ADAM, we have many other projects that we have to undertake, even for short durations of time.

Dr. Dalisay, your comments are also very well taken, i.e., your suggestion on the institutional aspect. We are gratified and that is the very reason why I said that we in the Bureau of Agricultural Economics believe in utilizing the services of people in the know. We have a theoretical economist working with us, but we also have a pragmatic economist in the person of Dr. Dalisay. We want to balance one against the other; we know that one will think in terms of the theoretical and one will think in terms of the practical. But [usually we like to think] in our modern times these two should meet, and we should get better results from such an arrangement.

May I also mention that two months ago, we - Dr. Kunkel and the group at ADAM - talked about the number of consultants that we would be needing, that is, [the need for help] that we would like to get other people. We mentioned one in particular. The next consultant we should

get should be a sociologist. We should not forget the sociological aspect of ADAM, of the farmer and his undertaking. But aside from having a sociologist, we should also have an agronomist. We should have a communications man because this thing is not going to be successful if it is going to end up in our file. We've got to have a man who will tell us how best to get across to those people who will use our output. We must have a soils man. We must have one who makes maps [and knows about] photogrammetry, aerial photographs, because this is also very important in our delineation of the agro-economic areas. These people know more than we do about how to single out these different areas and the different cropping patterns from such photographs. We have had initial talks with several of these people and we already know whom we shall hire as consultants. What we would like to mention is, that we have tried to think ahead, so that when Project ADAM is completed we shall have the results we set out to get.

In our original formulation of Project ADAM, however, we overlooked reform; but you will see in our paper today that we included reform because we recognized our error. We like to think that we are flexible enough to make changes for the better. Therefore, today, if there will be suggestions, recommendations or remarks that will be helpful to us, that will be useful to us, then we would be glad to hear from you about them.

Dr. Flores, congratulations for having been appointed Director of Technical Services at PCAR. I think that's a bigger responsibility.

Thank you for being with us, and for your remarks on the work done by the Bureau of Agricultural Economics in its ADAM project. We like to hear those remarks because we know that approval of our projects at PCAR is not going to be held pending on your desk and we can make some timely decisions on whether or not we would be enabled to undertake those activities. Anyway, we stand on our accomplishments. As I have mentioned, we have good people with us in this project, from UPCA; from Washington D.C. and our local consultants. And we hope that when we shall have completed the project, we shall be able to absorb ADAM into the Bureau of Agricultural Economics. We do not like to think that when this work is finished, as per agreement, in three years, then that's it. We already mentioned at the very outset, even before we got NSDB's approval, that after three years we shall have set up the mechanism such that ADAM can be absorbed, and the people too, by the Bureau of Agricultural Economics. For what a waste of talents and skills, if those people who shall have worked with us for three years, who shall have learned quite a lot about the analyses, about the things that have to be done, shall just be allowed to go. We would like to be able to utilize their services further for the good of the Bureau initially; but eventually we want to think that it will be for the good of our New Society.

This system of getting things done, of getting the data, is really a continuous one. We have been collecting data since 1953, for the last 20 years, and we hope to collect data for the next 200 years -

maybe not as a Bureau of Agricultural Economics, maybe as a bigger agency.

In one of the papers that we have written, we stated that projects should not be undertaken for the sake of research but that there must be the one ultimate objective - that the results be utilized; that these be useful to people for whom we intended the project when we started it. And in terms therefore of model formulations, on what happens to the small farmer, may I say that we also have some other studies in the Bureau of Agricultural Economics.

- 1) We finished, about two or three weeks ago, the Socio-Economic Study of the Tabacalera Estate in Ilagan. We submitted the report to the Department of Agrarian Reform some two weeks ago. This is to form or to serve as the benchmark for changes in that area, for farmers in that area. We will probably conduct another survey in two years and see what changes have been brought about by agrarian reform in the Tabacalera Estate. This should serve also as a guide in other agrarian reform areas and will affect the small farmers who comprise that segment of the economy, of the farming economy.
- 2) Last year we finished the survey on Farm Indebtedness. We are still working on the taping of the data; that is, on the credit situation, and information on borrowings by farmers from various sources. Institutional sources include the ACA, DBP, and so on. We have such information already and we are going to try now to analyze this further.

- 3) Then we presented yesterday to the National Research Council a proposal for a socio-economic study of fishing villages. We think that we should not confine ourselves to mere farmers as such; fishermen are as part of agriculture as the others. So, we would like to conduct this study of fishing villages, on the socio-economic aspects of our fishermen and their families, their households.
- 4) And, finally, we have conducted cost of production studies. The first one in January - to determine cost of production of palay and corn all over the Philippines, by region, for the period from July to December last year. On the second one, the survey returns are just coming in for cost of production data of palay and corn farmers for the period from January to June this year.

That is all I have to say. Thank you very much.

OPEN FORUM

R. VENTURINA: You just heard the presentation of Director Alix, the comments and recommendations of Dr. Dalisay, Dr. Flores, Dr. Kunkel and Director Apacible. With these discussants, we would like now to request the public to give their criticisms, if any, regarding the project and the suggestions and the recommendations to further improve the operation of Project ADAM. As stated by Director Alix, he and his staff would like to get these from you.

DR. FLORES: May we ask about the evaluation at Davao?

DIRECTOR ALIX: The evaluation in Davao, as I said earlier, dissected the project into pieces and then put it back together again into proper organization. The outline that we presented today is a revised outline. In this revised outline that we have submitted to NSDB you will find that there are changes compared with the original version.

DIRECTOR CORFUZ: Project ADAM should be congratulated on the very impressive progress report and the volume of work that it has done in the first year. We are deeply impressed because the cost of the project, it seems to me, is very reasonable and yet so much has been accomplished. Second, it seems that not only does the project have very good people, but the project itself seems to have some superhuman qualities in that it can be torn into pieces and put back together again.

Levity aside, the question that Dr. Dalisay raised a while ago about technology and organization brings back to mind the problem that keeps besetting people in the policy circles in the government - this

is the fact that, given the progress that has taken place so far in agricultural technologies and innovations, it seems that we are still unable to effectively channel these technologies to the small farmers, as Dr. Flores talked about. This is our major concern in my office because even now we are still trying to look for effective institutional arrangements whereby credit can be channeled to the small farmers without too much cost because credit to farmers is very costly. A lot of administrative work is involved and often we find that repayment is very poor. At the same time they constitute the biggest bulk of our farming population and to us we feel that they deserve the utmost attention of the government.

Yet even if we did succeed in channeling technology, that we are not now doing effectively, there is also this problem about being able to maximize the income which should result from the increased productivity which we are aiming at. Again, I think perhaps it might be a good idea if Project ADAM, in its last stages, at least tries to look at several institutions which have relatively succeeded in channelling technology as well as inputs to our small farmers so that we might then be able to utilize or arrive at a more effective working models at later stages of our development. Thank you.

DIRECTOR ALIX: Thank you. May I say that there are two ADAM models that we have considered. We have not done anything about them, just considered, but in the light of your remarks today, we shall get together and look more closely into how these should come into Project

ADAM. I am talking of two such models: the compact farming model and the food-bowl concept which was proposed at the PCAR Congress in February (I understand it came from someone at the NEDA). And so I would like to extend this invitation - that we get together on this and see how we can make a study of such a model to be incorporated into ADAM. We are aware of these other models that may help in extending the improved technologies to small farmers.

DIRECTOR CORPUZ: Aside from that, I would like to inform the body that the compact farming model has in fact been adopted by government in pilot areas of the country where Asian Development Bank assistance is being provided. These are in several irrigation project areas, namely: Angat in Central Luzon; Magat in Cagayan Valley and Davao in Mindanao. This might be this type of a model which, I understand, originated from other agencies, the ACA, for instance, and then was adopted by the rural banks in this country. It seems to have caught fire and it is being tried in substantial scale with Asian Development Bank assistance. Perhaps, since Project ADAM has two years to go, it might be that one such model area may be studi

DIRECTOR ALIX: We have 1½ years to go. We started our second year in February, so we are now almost 6 months gone into the second year of operation.

DIRECTOR APACIBLE: We would like to request in the course of your work during the remaining period if there might be more detailed

statistics, for example, on other crops - one of them is abaca, we are short of this data now, and we are involved in a nationwide campaign for production of more abaca. Our Governor sent some of our staff to Bicol in Albay. (I should be there also were it not for this meeting.) And very soon, before July 6, we will be in Davao because there is now a big demand for abaca fiber, not only for twine but also for pulp paper and for other uses. I understand that very soon, a BPI chemist who stayed for five years in Vienna and Austria is coming back to work on the cottonization of abaca, and therefore we should find more uses from this [abaca]. Certainly we will appreciate it if we could get more data from you because I think you're the only branch of government that could help us in this way. We have very meager data and we cannot rely most often on those we gather.

The second one is - I wonder if you could also help us on castor beans. There is a very big demand now for castor beans. How much our production is, how much our export is; these are the things that often confuse us in the BOI. And from time to time, if you don't mind, we will be passing to you some requests along this line because we at the BOI cannot really do all these. I think it really belongs most to your line of specialization although you can be sure that we are very interested in most of the things you have done and written. Most of these data came from you, I understand.

DIRECTOR ALIX: Yes, Director Apacible; we are making note of that. I hesitate to make promises. In the first place I never make promises I

cannot keep. In the second place, we only do what we can do and what is within our resources and in view of the re-organization, we don't know our resources. I would say that we will look into that and propose projects to PCAR on the abaca industry and on castor beans. We will do this and this I can promise - that we will first make such proposals. But I cannot promise that we shall be able to really do it until the fund becomes available, and also the personnel.

DIRECTOR APACIBLE: We will be ^{so} willing to hand to you some of these things we gathered as we go from the different regions so that it will be advance information. We will be very glad to do that but we cannot cover the whole area, so please help us.

DIRECTOR ALIX: Yes, we will be very appreciative of any information that you can hand over to us.

DR. FLORES: With regard to the seven volumes, what do you plan to do with them eventually?

DIRECTOR ALIX: We have already re-edited these. We continue the updating work because that is the only way to keep it alive. We continue updating it, we have edited, we have made the necessary changes where we have found errors, and the only thing that stops us from printing it is money. They have been categorized into different fields or areas: marketing, agronomy, pathology, and so on.

DR. FLORES: I was thinking that if there is so much there, unless you have a lot of time, one won't be able to get much from it because

it's so much, it's that thick and that high. The complaint of the policy makers is that they don't have the time to go through all of them. How can the information be used, by the way? Are you able to separate certain things and give it to certain people, if you feel it would be helpful?

DIRECTOR ALIX: Yes, we could. We have noticed that many of the researchers who come to the library make use^{of}/this. They do not have to go to the U.P. College of Agriculture, except for the new theses. Most of the theses are already there. Most of the work done at CLSU is already there. So they don't have to go to Munoz anymore. This saves them a lot of time.

DR. FLORES: As a reference, yes. But I was thinking of immediate use. Is there no plan for somebody to go through this and weed certain things which could be useful? Maybe it's a big job, I don't know. I'm just talking aloud, really, because you have a lot of information there now. What happens to it?

DIRECTOR ALIX: Well, it is a good idea and I was responding to your first question. That's what we are intending to do. We are updating it, we continue re-editing so that if somebody comes, we hope, perhaps even NSDB may say, "Let's print it!" it will be ready for printing.

DR. FLORES: This has been one of the criticisms. You know, when they organized PCAR, one of the reasons for doing so was because of what

has been happening to agriculture. You've been doing a lot of research at UPCA; other institutions have been doing agricultural research. What has it done for the country? I think they came up with the answer, "Not much," although we've been spending about P60M annually for agricultural research. I think it's because the information is there but somehow is never put into form that people can use.

DIRECTOR ALIX: Project ADAM's working paper no. 3, Planning for Agricultural Development: A Review of Literature is based completely on the bibliography. If you will read through it, you will find many topics here. We have put them under one heading: with many different sub-headings: Philippine agricultural situation and policies; the state of Philippine agriculture; problem areas; agricultural development planning in the Philippines; history and implementation problems. You'll be surprised that we got all that from the bibliography we were talking about. It's precisely in the form that we can make use of.

DR. FLORES: Does NEDA have a copy of this?

DIRECTOR ALIX: I think yes. We printed 150 copies only. Well, paper is a problem; resources are a problem. So we printed only 150 copies and sent them out to agencies like NEDA and I am sure BOI also has a copy.

DIRECTOR CORPUZ: I would like to find out in what form are the tables that you talked about in the short write-ups, if they are readily available for use.

DIRECTOR ALIX: They have been classified according to regions. They are placed together by region; their population, education; agriculture; bridges; roads; weather; rainfall data and many others, by region, by province. These are not available yet for distribution; they are all typewritten and we have had researchers looking into those compilations we made.

MR. E. BACONAU: I think Project ADAM has done a lot, but I share Dr. Flores' observation here, because I still think that this rich reservoir of researches is written by researchers for researchers mostly, and until such time when these are brought out or are filtered to the technicians working in the field (and these technicians are not able in the first place, to evaluate what have been written by researchers for researchers), then the family farms would not be benefited very much. So I think there is a need for agricultural communications specialists who should be able to write this and give it to the technicians. If possible, it probably will be better if these are written in the vernacular so that the farmer might be able also to read them themselves; this is the problem, especially when we are dealing with the family farms, the small operators who are not able to read and write.

DIRECTOR ALIX: Thank you for the suggestion. You will have noticed that we mentioned the need for a consultant on communications, because I did mention that we wanted to have enough foresight, to see that we are not merely interested per se but also to get the result of this research to the end-users; to the farmers; to the planners; to the

agricultural technicians and to others who would be able to utilize this fruitfully. And thank you for the suggestion. Any other question? Yes, Prof. Laudencia?

PROF. LAUDENCIA: I hope this is the last question. So, I would like to join the others by congratulating your group on the tremendous volume of work that you have presented and we believe that the investment from our special science fund is a good investment at that. We were really very impressed by your studies in the collation of materials with emphasis on technologies. However, although I'm not an economist, I subscribe to the belief that the ultimate aim of development is the farmer himself who constitute the great deal of our population. He is the end. The technologists are only the means to the end. So my question is, what portion of the studies that have been undertaken relates to this end?

DIRECTOR ALIX: As you have taken note of, we have collected quite a lot of information. I mentioned also in passing that we wish to conduct an analysis of the national agricultural system but also micro-farm analysis; I mean a micro-analysis of the farms; that is, that we are interested in the farmer. We are interested in the farmer because he is what makes up the greater whole. I have always recognized, as I said, that a peso is not a peso if you take away a centavo. That should emphasize the importance of the smallest unit because big things come from small things. No big thing can exist without the small things that put it together, and so we do recognize the

importance of the basic unit in agriculture and that is the farmer himself. Without this, our research shall have failed if we do not take into consideration the smallest unit in the agricultural structure. But I cannot say to what extent, percentage-wise, because those are statistics and they are too impersonal. If I say that we devote 5, 10, 15, 20 percent of our research on the farmer, it will not give due credence to the recognition that we have given to him. Even if it were only 10 percent, it will recognize his importance in the structure. The amount that we devote to a study of him, of his household, of the socio-economic aspect of his household, shall have accomplished the same result even if it is only 10 percent of the time that we devote to him. However, because of our desire to make the picture complete, when we mention that we need to hire a sociologist as a consultant, we are in effect saying that we recognize this, that the farmer is a part of society and it is not merely the technological aspect that we must take into consideration but the sociological aspect which is sometimes even more important.

DR. FLORES: Whether this kind of information goes into the hands of those who can use it - take for example people in the Bureau of Agricultural Extension, they plan national programs for the good of the farmers and yet in many cases, their programs have not been for the good of the farmers. I know a case where they have had overproduction; where the farmers really lose rather than gain. Or say, an agency like the Department of Local Governments which has embarked on a massive program on barrio associations. Did they have any data to help them?

Say, barrio associations are a type of program we need and these are all geared towards helping the people. But we are not so sure whether they really help the people because the kinds of information needed just somehow don't get to those people who make this kind of decision on a national scale. I know for sure that the Bureau of Agricultural Extension hasn't always been like that but they plan programs without the kind of information that you have gathered.

DIRECTOR ALIX: Perhaps the DPI could come in here because there is also a certain reluctance on our part to undertake any promotional activities. Perhaps if we sent this over to them, to the media and then they transform them into a report, a manual, a brochure that can be utilized, then that can help serve the purpose. The hesitancy on our part to undertake any promotional activity is that we in the Bureau of Agricultural Economics have always stood by the data that we collect; in their objectivity.

DR. FLORES: No, not really, but getting the information out to those who can use it. Take for example the BAE. Do you think this kind of data will be useful for the Bureau of Agricultural Extension?

DIRECTOR ALIX: Some of them, yes. We have never failed to give copies to the media, not to propagate the Bureau nor us but so that this can get to the end users, the consumers, the farmers, and to those who would like to get such information. As we sent, for example, 50 copies of our Economics on Grape Culture to the governor of Cebu, because Cebu is one of the premier producers of grapes. So we sent 50. To others we

only sent one or two, but to Cebu we sent 50 copies. And then we got a notice last week that they needed more because the 50 just went like nothing. We have taken into account that this needs to get to those people who should use them because as I said we cannot undertake any promotional activity. This will destroy our objectivity. We wish to be as objective as possible. But sometimes it hurts when we try to be very, very objective because if we make estimates of production as such, some group says that's too high, some group says that's too low. We never win. But we stick by that. This is what we have found and we believe that with the means, with the personnel, with the training our people have had, we have the best information available; and we have tried to keep these information as reliable and as accurate as possible.

BEN LARA: I would like to make one observation. I am Ben Lara of the Bulletin. I just would like to ask this question. Does the information that you speak about reach the right hands in the media? That's all.

DIRECTOR ALIX: We have a public relations officer in the person of Mr. Rolando Gonzales and we have given to him the responsibility that all these get into the right hands. He contacts the media, the newspapers. He is also detailed at the Department of Public Information and reports there three times a week. He takes charge of seeing to it that all these information that we put out get into the hands of the media.

BEN LARA: I mention this because about two weeks ago, the Philippine Council for Agricultural Research had a seminar in Baguio. I think one of the participants in that seminar mentioned the fact that the people

invited were not the people who were actually covering, were not actually writing these things. I for one: I have been involved in this since martial law, and strange to say, I did not receive an invitation from the PCAR and they said media was involved. So I am just mentioning this not to recriminate but to point out that perhaps somewhere along the line there is a breakdown.

But I wanted to bring out the observations. They were quite valid. That actually your principal target is the farmer. What is the use of all the information you produce, if the farmer is not made aware of them. So you have recourse to various media but even in that stage of transferring this information, in the transfer of technology, on the first step alone you already have a breakdown in your machinery. I think that in this particular area, it would be very difficult for you to reach the objectives of all your work, which is the farmer.

DIRECTOR ALIX: Well, the Bureau of Agricultural Economics functions very differently, for example, than the Bureau of Agricultural Extension. The Bureau of Agricultural Extension technicians are in direct contact with the farmers and if we give the information to the technicians, then the technicians should take care of relaying this or conveying this to the farmers. Our function here is research; our function is gathering of data; our function is objectivity - to try and be as objective as possible with regard to whether we have, let's say, so much production of this commodity or that commodity; and researches such as this, on what policy options are available; what policy would be good. If such policy is adopted, and if successfully implemented, and if it

successfully seeps down to the grassroots level, then would it work? But we cannot go beyond a study of policy, for example, and say to the policy makers, here are the different options, the different alternatives and these would be the probable outcomes; we cannot go beyond that. As I have said, we want to be objective. Add to this the fact that we are a very small Bureau.

MR. ROCHA: Project ADAM is supposed to have accumulated these data on markets, but I don't see any plan to more or less define the marketing models in each producing region. That is - pinpointing more or less the people engaged in the trade, at the same time the prices, how much they buy. Because if we would like to increase farm income, shall we say, of the small farmers, we should have information on the people who are actually involved in the trade, the prices, and the form that he buys the product.

DIRECTOR ALIX: Let me just point out that, although we have not explicitly presented a marketing model, it is there in the production-distribution model and it is a part implicitly of the supply, that is, the demand-supply analysis of the agricultural sector. It is a part of the price analyses being done at the UP College of Agriculture. These three different models, put together, will give us an inkling into the marketing of agricultural products and the flow of such agricultural commodities and how the problems crop up because of the existence of such flow or channels. As I mentioned at the start here, the marketing model has not been explicitly built, but it is a part and parcel

of the production-distribution model. We thank you very much.

MR. VENTURINA: If there are no more suggestions or recommendations, NSDB will take this to mean that Project ADAM is on the right tract and we wish to congratulate Director Alix for proceeding with the Project smoothly and rest assured that the NSDB will continue supporting the project.

###

PROJECT ADAM STAFF

Project Director

LEONARDO A. PAULINO

Project Leader

JESUS C. ALIX

Co-Project Leaders

L. JAY ATKINSON (USDA)
RAMON L. NASOL (UPCA)

Assistant Project Leaders

ERNESTO P. ABARIENTOS (UPCA)
BENJAMIN S. CALAYAG (BAECON)
DAVID E. KUNKEL (USDA)
AIDA R. LIBRERO (UPCA)

Project Consultants

AMANDO M. DALISAY
JOSE ENCARNACION
RICHARD FOOTE
RODOLFO T. YAPTENCO

Senior Research Associates

QUINTIN M. BALAGOT
GIL R. RODRIGUEZ, JR.

Research Associates

FLORENTINO M. ATIENZA
VICTOR B. REYES

PROJECT ADAM STAFF

Senior Research Associates

LEONARDO A. GONZALES
ISMAEL P. GETUBIG, JR.

Senior Researchers

AIDA C. ALCASID	JUANITA M. MAPUSAO
DELIA PRISCILLA G. AQUINO	ALFONSO D. MERCA
TESSIE B. BAS	ROGELIO S. NUESTRO
NELIA G. CANLAS	VIRGINIA M. OCAMPO
ERLINDA M. ELIZON	BELINDA A. ORIOSTE
REBECCA R. GABUTERO	VENUS P. OROGO
FRANCISCO P. JAVILLONAR	PAULINA L. PARAS
CASTOR C. DE JESUS	JOSEFINA B. SISON
ESTER S. LAUDE	PORFIRIO B. TUNQUE
CECILIA M. DE LEON	

Research Assistants

CARMELITA S. ABAD	MOISES B. MALABANAN
IMELDA B. AGUAS	FILOMENA M. MAMA CLAY
GUILLEMO C. BELLA	ERLINDA S. MAULIT
CAROLINA E. BELEN	NERIZA D. MENDOZA
WILFREDO E. EMLANO	EMELINA N. PRESA
ROBERT D. GEROCHI	EMELINA G. SOLANO
EVELYN M. LACHICA	MARINA M. VELASCO

Science Aides

JULITA B. CABATBAT	FATIMA V. MONEDA
CORAZON T. CAMAYA	MARTA M. MOYANO
ERNESTO C. COLLADO	SIMPLICIA F. PANGANIBAN
ZENAIDA G. DELA CRUZ	MYRNA B. PASAGUI
JOSEFA A. DUQUE	PURFECTO DEL ROSARIO
ROSA MARIA C. ESTRELLADO	FLORITA A. TENIDO
MAURA P. MALOMA	MARIO B. YPARAGUIRRE