PROJECT PAPER

CONSUMPTION EFFECTS OF AGRICULTURAL POLICIES

OFFICE OF NUTRITION

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PART 1. SUMMARY AND RECOMMENDATIONS

A. FACE SHEET

B. RECOMMENDATIONS

It is recommended that the project be approved in the amount of $2,700,000.00 over a five-year period, FY 1979 - FY 1983. The target starting date is January, 1979.

C. DESCRIPTION OF PROJECT

Background

This project was initiated by the Office of Nutrition (DS/N) as a major element of the Office's strategy to improve nutritional well-being in developing countries. The Office has recognized that the nutritional status of the urban and rural poor in developing countries may be more affected by the wide range of government policies and programs than by direct nutrition interventions. Yet most government policies and programs are formulated, implemented, and changed with little, if any, consideration for their ultimate nutritional impact.

Two reasons have been suggested for this: (1) there is insufficient understanding of how economic policies and programs, particularly those in the agricultural sector, affect the consumption patterns and nutrient intakes of those most at risk--the urban poor, landless laborers, and small subsistence farmers; and (2) the little information which is available on the potential nutrition impacts of various policies and programs is not enough to persuade decision-makers to act--they need to be convinced with facts and figures.

This project is based on the assumption that policy-makers will move to avoid or mitigate adverse nutritional impacts of economic policies or events if they have available to them more precise information about the relationships between the policies and levels of food consumption and nutrient intakes. Planners and analysts in the agricultural sector play a key role in this process of providing better information. By improving the techniques which planners use and by adding consumption and nutrition concerns to existing agricultural data collection, analysis, and planning activities, the project intends to move toward the goal of improving the consumption/nutrition benefits of agricultural development policies and programs. This inter-disciplinary focus underlies the project design and is implied in the project title, the "Consumption Effects of Agricultural Policies" (CEAP).

This project is designed to develop methodologies for determining the consumption/nutrition effects of agricultural policies and programs on people's food consumption patterns and nutrient intakes, to demonstrate their utility by having them used in several LDC planning institutions, and to disseminate information about these methodologies, their potential uses, and how to use them to AID and LDC planners and decision-makers. Project success requires progress in all three areas.

CEAP activities will have a country focus. This strategy is in keeping with current AID emphasis on field support activities and host country priorities. This country emphasis also stems from a belief that the best way to ensure that planning techniques will be useful in pragmatic planning situations is to test them or, even better, to develop them within acutal LDC planning systems.

CEAP activities will also follow an add-on approach. This means adding nutritional observations to agricultural data collection systems, adding nutritional variables to agricultur ' lanning and policy analyses, adding nutrition-oriented staff and sk o current agricultural planning establishments, and adding nutrition outcomes to the policy choices which decision-makers make. Treating these activities as additions to current agricultural planning activities reflects political and fiscal realities. The amount of money and time needed to develop and maintain an agricultural planning system could never be justified solely on the basis of the need to understand the impacts of agricultural and other development policies on consumption patterns and nutrient intakes of those at risk from malnutrition. But unless the habit of considering these nutritional outcomes is incorporated into the planning process as often as possible, policy-makers will continue to make important decisions without being aware of their potential impact on the nutritional status of the disadvantaged.

Mission and country interest in the project appears strong. Cable responses to the draft project paper and discussions with mission and government personnel during the reconnaissance trips to Latin America and Asia indicated sensitivity to the problem and interest in incorporating consumption/nutrition concerns into their planning activities.[1/]

Project Structure

The project is designed to develop some methodologies relatively quickly as well as to gather experience adapting and using these methods in ongoing planning systems. Three types of activities will be undertaken:

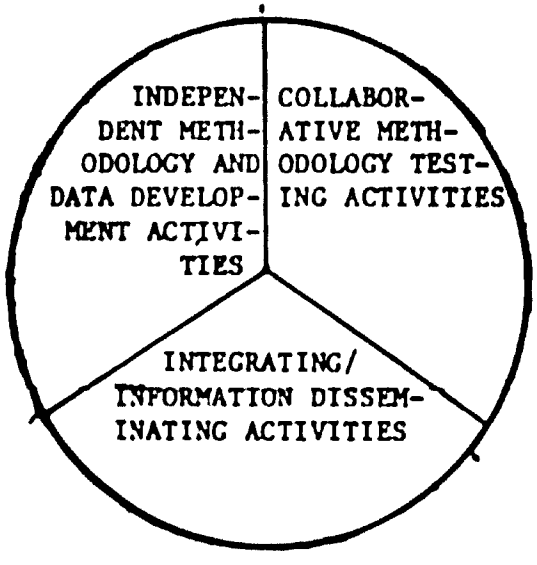
1/ See Annex B for a country-by-country review of the prospects for CEAP involvement.

1. Developing methodologies and data using country-specific data, working in countries as much as possible, but independent of country planning systems.

2. Testing the methodologies developed for their usefulness to decision-makers in several LDC planning systems. These collaborative activities will also provide information on the realities of planning and policy formulation in developing countries;

3. Integrating the results of various activities financed under CEAP and disseminating information on the methodologies and their uses to AID and LDC planners and decision-makers through TDYs, seminars and workshops, and an information network (see Figure A).

FIGURE A



Independent Methodology and Data Development Activities - Successful prediction of the consumption/nutrition effects of agricultural policies and use of these predictions in a planning and policy-making setting require analytical techniques plus data. Methods/techniques must be available or developed for specifying the relationships (linkages) between a given initial condition (a policy or economic event) and its impact (on consumption patterns and nutrient intakes). Information must also be

available indicating how the relationships actually worked at a given time, how strong the various relationships were, and what kind of variances occurred in different relationships.

Four specific sub-projects were designed to fill the more critical methodological and data gaps identified during the course of the project's development:

1. Development of Techniques and Data Basic to the Analysis of Household Consumption
2. Techniques for Analyzing/Predicting Farm Household Behavior
3. Development of Consumption/Production/Nutrition Data on Farm Households
4. Short-Term Policy Impact Studies[1/]

All four sub-projects are designed to develop analytical methodologies and help improve the data needed to utilize them. These analytical methods and modifications in data collection and processing systems will be developed and tested, using country-specific data and working in countries as much as possible.

The first sub-project is designed to develop core techniques for translating the income and price effects of agricultural and other development policies and programs into their consumption/nutrition impacts. Activities designed to help improve and/or develop the data needed to utilize these techniques are also included in this sub-project. The second and third sub-projects are designed to develop additional techniques for evaluating the impact of development policies and programs on small farmers and the data needed to utilize them. Special adaptations of the standard income and price analyses may have to be made or additional

[1/] Detailed descriptions of these sub-projects can be found in Annexes C, D, and E.

analytical methods developed to deal with farm households because their consumption decisions are conditioned by their ability to grow and eat their own food, sell food and/or other agricultural production, and/or sell their labor.

Activities financed under the fourth sub-project will focus on the broader set of relationships between policies and programs, how they affect incomes and prices, as well as what happens to people's consumption patterns and nutrient intakes when incomes and prices change. These case studies will focus on the consumption/nutrition impacts of two important policy/program issues in most developing countries: (1) policies and programs which encourage food, feed, cash, or export crop production; and (2) integrated versus single focus agricultural projects. Several relatively simple techniques for analyzing the consumption/nutrition effects of agricultural policies and projects should also be developed during the course of these policy analyses.

Collaborative Methodology Testing Activities - Methodology and data development is only the first step. Equally important to project success is evidence that these methods can be adapted to the needs of LDC planning systems and evidence that they will.

The next steps--demonstrating the utility of these methods to planners and decision-makers and determining the feasibility of linking them into ongoing planning systems--are perhaps more difficult. Yet, until these methods have been tried in several countries and linked into their ongoing planning systems, the process of methodological development cannot be said to be complete. Similarly, CEAP purposes cannot be achieved if guidelines for internalizing the methods developed are not based on

empirical knowledge of the problems involved in adding consumption/nutrition concerns to the planning and policy formulation process in developing countries.

Some type of collaborative arrangement seems the only suitable way to arrange for actually trying out some of these methodologies in several selected LDC planning systems. To achieve a real test of methods, specific agreements will have to be reached on objectives and some commitments made in terms of staff and funds on the part of all parties--DS/N, missions, and host governments.

Preference in developing collaborative activities will be given to countries whose nutritional problems are pressing and whose governments seem willing to take actions to deal with their problems. Activities which require short-term assistance from CEAP will be preferred, with continued long-term commitment in these cases coming from mission-financed resident personnel and/or government planning staff. Details on the types of consultants needed, what they will work on, and when they will be needed will be specified in scopes of work to be agreed to by all parties. An ideal situation would be when activities funded under the methodological and data development sub-projects can be undertaken in countries where a collaborative arrangement is agreed upon or under discussion. In such cases, these activities can become a part of the collaborative agreement with the additional short-term consultants needed provided from the RSSA. The potential for such an arrangement exists in both the Dominican Republic and Bolivia--two countries where potential collaborative activities have already been identified.[1/]

[1/] See Annexes F and G for a description of these potential sub-projects. Annex B also contains a brief discussion of other potential countries and activities.

Integrating/Information Disseminating Activities - Ensuring that the results from this broad range of activities are integrated and disseminated to AID and LDC planners and analysts as well as the general development community is a major task in itself. The Office of Nutrition, through its USDA RSSA staff, will assume the major responsibility for coordinating all sub-projects and integrating technical outputs and practical experiences The Office of Nutrition's USDA RSSA staff will also develop and maintain an information network among project participants and other interested planners and policy analysts.

Project Management

The Office of Nutrition will be responsible for the overall management of the project. Since the interests of the Office of Agriculture (DS/AGR) are closely allied with those of DS/N, a member of the DS/AGR/ESP staff will participate on the management team directed by DS/N. Responsibility for the day-to-day monitoring and sub-project management will be delegated to the USDA RSSA.

Three of the four methodology and data development activities will be offered for bids. Collaborative activities which include more than TDY consultants--resident personnel, training, computer time--may be offered for bid, handled through a cooperative agreement or RSSA, or as an unsolicited proposal. Collaborative activities which consist solely of a series of TDY consultancies will be handled primarily through the USDA RSSA. The RSSA will also be responsible for integrating sub-project activities and designing and implementing the information network.

The Inter-Bureau Advisory Committee, with representatives from all Regional Bureaus, DS/AGR, DS/RD, and PPC will help review project documents,

identify countries in which to undertake applied research activities, and evaluate project and sub-project performance. Committee members will also provide a contact point for AID regional and mission personnel about project activities. The ideas and interests of mission staffs will also be solicited directly through consulting trips and the information network.

Implementation Plan

The CEAP project is designed as an umbrella for a variety of activities, all with a methodological orientation, and most with a country focus. Each activity is designed to make an important contribution to the stated goal and purpose. However, no one activity is expected to contribute equally to all dimensions of the purpose or produce all the expected outputs.

Activities are planned to cover a five-year period, FY 1979 - FY 1983. Methodology and data development activities will be financed first. Collaborative activities, which consist solely of a series of TDY consultants, will be undertaken throughout the life of the project. Some CEAP-related collaborative activities were already underway by the end of Fiscal Year 1978, for example, funded under the RSSA. Integrating and information disseminating activities will also continue throughout the life of the project.

The methodology and data development sub-projects will be financed over several fiscal years in order of their priority. The "Policy Impact Studies" will the the first to be funded, the "Development of Techniques and Data Basic to the Analysis of Household Consumption" will be second and the "Development of Consumption/Production/Nutrition Data on Farm Households" will be third. The "Conference on Household Models" will also be financed the first year since the amount required to fund

it is relatively small, and the knowledge it will provide will be useful as guidance to subsequent CEAP activities.

Evaluations are scheduled in the implementation plans developed for each of the methodology and data development activities. The scope of each evaluation will be keyed to the particular objectives and tasks specified for that contractor over the relevant time period. Similar implementation plans and evaluation schedules will be drawn up for each collaborative activity in conjunction with missions and country governments. An overall project evaluation will also be held approximately 12 months after the project is initiated and annually thereafter until the end of the project. The DS/N management team, RSSA staff, and members of the Inter-Bureau Advisory Committee will participate in these reviews.

End-of-Project Status Indicators

The outputs of this project follow from the purpose specified and are quite easily translated into end-of-project status indicators. Types of written outputs expected include state-of-the-art papers; analytical frameworks; descriptions and evaluations of household consumption surveys; reports on policy impact case studies; technical reports describing the analytical techniques developed, both simplified and more complex; guidelines for using those techniques; guidelines for improving the design and implementation of household consumption surveys and guidelines for adding consumption/nutrition concerns to agricultural surveys; and reports on country-specific policy analyses made, using the analytical methods developed.

These papers and reports will be disseminated through the project's information network as well as through the AID Document Distribution Systems. A series of workshops, seminars, and conferences will be held to review the short-term country policy analyses, the analytical and data collection and processing techniques developed, and the policy analyses made utilizing them. Conference reports will also be prepared and disseminated. Manuals describing the computer software developed to process and analyze data will also be prepared and disseminated. The more theoretically interesting results will undoubtedly be published by the researchers themselves in scholarly journals. Results stemming from the collaborative activities will probably be included in working documents prepared by the planning units producing them or by other organizations and agencies. A bibliography of all publications which incorporate project inputs will be routinely compiled and updated by the USDA RSSA and will be available through DS/N and DS/AGR.

Those methodologies and techniques tested and adapted in the collaborative activities will be internalized into the planning systems of these countries. Internalization implies that analysts and planners associated with the local institution will be capable of applying the methodologies, adapting them as necessary to changing conditions, and providing decision-makers with reliable results on a timely basis. Where such internalization is not feasible, reports on country activities will be made as accessible as possible to the host country

planners and policy makers. In the "Short-Term Policy Impact" sub-project, provision is also made for in-country seminars. Other opportunities for sensitizing AID and LDC planners will be used as they arise. Opportunities exist, for example, for adding short modules on the consumption/nutrition effects of agricultural policies to AID's in-service training activities as well as to various courses to which AID participants are exposed in the United States.

D. SUMMARY FINDINGS

This project will begin to provide a basis for overcoming one of the major deficiencies in current agricultural planning and policy-making--the lack of knowledge about the impacts of policies and programs on food consumption patterns and nutrition. The project is technically sound. The methods and techniques developed will also be adapted to a wide variety of planning environments. It is administratively feasible for DS/N to manage this project, given the resources of the USDA RSSA staff. The RSSA staff will be delegated responsibility for the day-to-day monitoring and supervision of project activities. It will also be involved in ongoing problem identification and consulting work. The project is financially feasible if the activities are financed at the levels specified.

E. PROJECT ISSUES

Various management and substantive issues have been raised during project reviews:

1. Management Issues

   a. Which office should manage the project?

   b. How should contractors be obtained--through the competitive bidding process or through cooperative agreements?

   c. What should be the extent of CEAP financial involvement in collaborative sub-projects?

2. Substantive Issues

   a. Which countries should be selected for inclusion in the project? How does country selection affect the kinds of tools developed?

   b. Will methodologies developed in one country be applicable in others?

   c. How many and what types of methodologies will be developed?

Management Issues

Lead Office - Which office should develop and manage the project was one of the first issues raised. TAB/AGR/ESP began to develop a project titled "Agricultural Planning to Improve Nutrition" as part of their program to improve agricultural planning in the developing countries. TAB/N's project "Consumption Effects of Agricultural Policies" was initiated as one of the two new thrusts of the Office identified in its strategy paper. Although slightly different in focus, both projects were similar enough to raise questions about the potential duplication of effort between TAB/AGR and TAB/N. The first decision, made during the FY 79 ABS review, was to combine the two projects.

After a series of discussions between the two offices, TAB/N (now DS/N) was assigned overall responsibility for the single project. TAB/AGR (now DS/AGR) is expected to contribute to the project on a regular basis through its participation on a management team headed by DS/N. DS/AGR will also participate in the Inter-Bureau Advisory Committee.

Types of Contractual Arrangements - Plans are to obtain contractors for the major methodology and data development activities through the competitive bidding process. The necessary expertise could probably be obtained through a cooperative agreement with a university, for example. If this procedure was selected, the cooperator could be used to help finalize the design of the project. It is this aspect of cooperative agreements which makes them particularly attractive when ideas about the activities to be undertaken and outputs expected are not fully developed. This advantage is not needed in this case, however, since the outputs expected from these sub-projects and the activities required to obtain them are relatively well defined--defined enough to be offered for bids. The advantages of the competitive bidding procedure are: (1) obtaining a contractor through the competitive bidding process should take less time; and (2) a broader range of institutions are eligible to bid.

Financial Assistance - The potential exists for collaborative activities to be designed which are actually discrete sub-projects, with funds included for resident personnel, for

example, for training and travel for local personnel, computer time--everything needed to achieve a relatively broad set of objectives specific to that sub-project. The Dominican Republic sub-project, in its present draft, is in this format. Similar activities are possible for Central America and Thailand.

The issue is whether the entire financing for these activities should come from central funds or whether costs should not be shared with missions and countries. In the case of the Dominican Republic, there is an ongoing agricultural planning project being financed by the mission with counterpart funding from the government. Also, the resident advisor under the potential CEAP-funded sub-project would work with a Dominican analyst already funded by the Dominican government. Thus the argument could be made that costs are already being shared. In a case where the activities proposed are an add-on to an agricultural planning project which has already terminated, the argument becomes less clear. In this case, mission and government funds were used to develop the basic system, but the question still remains whether additional funds should be forthcoming from the government and mission to support the development of the additional planning capacity.

In principle, the answer should be yes, since the willingness to provide funds to support an activity is probably one of the best measures of commitment. To put this into practice raises even more questions. What types of costs should CEAP

provide as a general rule? Should there be an upper limit on CEAP funds devoted to any one collaborative sub-project? CEAP financial assistance will clearly be only a small percentage of total costs in activities where CEAP assistance is limited to a series of short-term consultancies.

Substantive Issues

Country Selection - The question of which countries should receive priority emphasis was discussed in depth at the first Inter-Bureau Advisory Committee. The initial project paper draft identified two groups of developing countries: (1) countries where the nutritional problems tend to be severe, but economic planning systems are weak; and (2) countries where the nutritional problems are less severe, but the planning systems are relatively well developed. Several members of the Committee urged that project activities be concentrated in the first group of countries. Others felt that the prime criterion for sub-project location should be the potential for the development of solid methodologies for analysis and planning. Further investigation, however, revealed that this was an artificial dichotomy. Some countries with relatively well developed planning systems face serious nutrition problems--the Dominican Republic and Thailand, for example. Other countries with serious nutrition problems have relatively weak planning systems--Bolivia and Honduras, for example.

Therefore, preference will be given to working in and with countries which have nutrition problems and whose governments seem willing to take actions to deal with these problems.

This means project activities will take place in countries with relatively well developed planning systems as well as those with weak systems. Although per capita income figures are commonly used to determine donor priorities among countries, per capita income figures can completely mask the extent and distribution of malnutrition within countries. Therefore, more direct measures of malnutrition--nutritional status and/or food consumption by income group, for example--will be used whenever possible to select participating countries.

Replicability - The question of whether methodologies or techniques developed in one country will be applicable in another was also raised in review discussions. The issue of replicability is a knotty one. The more similar two countries are in socio-economic structure and level of institutional development, the more likely it is that planning methodologies developed in one will be applicable in the other. But if project resources are concentrated in countries whose characteristics are too similar, the range of socio-economic and planning environments in which the methodologies developed can be utilized may be too narrow. Since the objective is to develop methodologies which can be used in more than one or two countries, the decision was made to initiate activities in countries representing a variety of socio-economic and policy and planning environments. The selection process will not be as scientific as might be desirable, or the number or range of variables as comprehensive, due to limited resources. People in a wide variety of countries will

be included in the information network and invited to participate in conferences and workshops, however, to help sort out which aspects of the methodologies developed are location-specific and which are transferable.

Whether methodlolgies developed in one country are applicable in other countries also depends in part on the time available for transfer. Techniques which can be applied next year in a country which has a well orginized, well staffed planning unit with adequate data collection facilities may take ten years to be useful to a country which is just beginning to train the people who will eventually staff its planning unit. The short-term problem is to ensure that methods developed in the countries with relatively well developed planning systems are communicated effectively among other countries in this category. The information network plus the constant attention of the RSSA to the problem of integrating sub-project results are expected to help achieve this objective. The longer-term problem is to ensure that the methods developed in the more sophisticated countries now will be available for use in the other set of countries in the future. Several steps will be taken to help achieve this longer-term objective--distributing publications widely, encouraging personal communications among personnel working in both sets of countries by including both groups in the same conferences and workshops, and institutionalizing the results within AID.

Range of Methodological Approaches - Because countries have different needs--their development problems, the type and mix of policies acceptable, and the planning systems and techniques already in use differ--a variety of techniques and methodologies will have to be developed. Because the objective is to incorporate nutrition into agricultural sector analyses and planning activities, the tools and techniques developed will be based on those already known and used by agricultural analysts and planners, most of whom are economists. A variety of techniques--simple tabulations, regression analysis, complex modelling (econometric, linear programming, simulation)--will be pressed into service in new ways. The more subjective observation and open-ended interviewing techniques used by sociologists and anthropologists could be used to help specify and determine the importance of non-economic variables. These techniques will be used when appropriate to supplement the information and techniques more commonly used by economists. This approach is consistent with the trend of involving other social scientists in sector analyses and other sector planning activities. Anthropometric measurement techniques used by nutritionists to determine nutritional status, for example, will also be used to help establish baselines and possibly to measure change.

Two recent conferences[1/] recommended that methodological work begin immediately on three activities: (1) the development

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1/ Sponsored by TA/N in Washington, D. C., November, 1976, and by the Rockefeller Foundation at Bellagio, Italy, August, 1977.

of household behavioral models (especially farm-firm models using econometric or linear programming techniques); (2) the construction of income and price elasticity matrices by income classes or other nutritionally relevant groups; and (3) linking these methodologies to various types of agricultural sector models. A range of "softer" techniques such as the "nutrient flow concept" or "social indicators analysis" may also prove to be useful in some situations, either alone or in conjunction with the "harder", more quantitative techniques. In the final instance, the methods which are developed will be the product of three factors: (1) what LDC planners and policy-makers want, need, and can use; (2) what the consultants and contractors available are capable of doing; and (3) what AID requires to meet the goal and purpose of this project.

PART 2. PROJECT BACKGROUND AND DETAILED DESCRIPTION

A. BACKGROUND

Malnutrition is a major health and welfare problem in many developing countries. Undernourishment, by limiting both mental development and physical productivity, exacts a real cost in both personal and national terms. Malnutrition, although perhaps not one of the more visible symptoms of poverty, contributes to its persistence. Eliminating malnutrition will be difficult; but, as the National Academy of Sciences concluded in its World Food and Nutrition Study, "few of the challenges facing humanity are larger or more important".[1/]

An Overview of the Problem

Three scenarios are commonly used to describe and explain the existence and persistence of malnutrition in developing countries:

ONE: People are malnourished because the amount of food available is simply inadequate. Adverse weather conditions or poor transport facilities contribute to such an absolute shortage of food.

TWO: Adequate food is available, but people do not eat enough of the right foods, chiefly because of certain cultural beliefs and taboos and lack of information about nutrient needs.

THREE: Adequate food is available, but malnutrition is prevalent because some people do not have enough income to buy sufficient food.

Each of these scenarios is associated with a different type of government response and program intervention. The

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1/ National Academy of Sciences, World Food and Nutrition Study, Washington, D. C.: NAS, 1977, p. xi.

first scenario calls for "short-run food imports" coupled with "intensified efforts to increase production". The second scenario calls for "well-focused nutrition education". The third requires "serious efforts to increase the incomes of the poor, and where appropriate food subsidies in the short-run".

What actions are more effective in improving people's nutritional status--nutrition interventions or changes in agricultural and/or other development policies and programs? People's answers differ widely because the policy and program options emphasized by people depend on which scenario each feels better explains the existence and persistence of malnutrition.

Which scenario better explains the existence and persistence of malnutrition? All three scenarios, in fact, may be present in any one country, region, or community. During the mid-sixties and early seventies, the lack of sufficient food was widely accepted as the most prevalent cause of malnutrition in developing countries. Increased food production, because it contributes to an expanded national food supply, was expected to lead almost automatically to improved nutrition. This assumption came increasingly under attack as evidence grew that production increases do not automatically eliminate the existence of malnutrition. In country after country, food supplies on the average have provided enough energy and protein to meet basic requirements. Food and nutrients are not, however, automatically distributed equitably among

various segments of the population and many, in some cases a majority, remain undernourished.

The second scenario was also believed to be of widespread significance. For this reason, nutrition education programs are a common element of community health and development strategies. The presumption is that even low income consumers can make some immediate improvements in their nutrition by making wiser food purchases, growing more nutritious crops in home gardens, or by distributing food differently among family members. Nutrition education encourages these changes by providing consumers with needed information about the nutrient content of available foods and the nutritional needs of various household members. Evidence in some countries indicates, however, that even if nutrition education programs are effectively mounted, such consumption behavior modification may not be enough. Over 20 percent of the households in a Colombian study were found to be unable to meet recommended allowances by purchasing the most nutritional efficient foods; they could only reach these standards if they had more money to spend.[1/] A study of food intakes of individual members of Filipino households demonstrated that better distribution of food within the household would not solve their undernutrition problems. No one had enough to eat.[2/]

[1/] Florencio, Cecelia and Victor E. Smith. "Efficiency of Food Purchasing Among Working-Class Families in Colombia," Journal of American Diet Assn., 55:3 (1969), p. 245.

[2/] Valenzuela, Rosario E. "A Study of Nutrient Distribution within the Family and Factors Affecting Nutrient Intake." Paper distributed at the Nutrition Beyond Economics Conference, Penn State, Oct. 1977, p. 6.

These findings lend weight to the importance and prevalence of the third scenario. For the majority of those suffering from malnutrition, major diet changes can only be brought about by increasing their access to adequate food supplies by increasing their purchasing power and/or through direct provision of subsidized food. Numerous informed observers now emphasize the relationship between poverty and malnutrition and suggest that some type of redistribution of income and/or food may be necessary to solve the world's major malnutrition problems.[1/]

Government Policies--A Part of the Problem

In developing countries, many of the steps toward more equitable distribution must be taken by or under the direction of governments. Subsidized food distribution systems and food price controls are common governmental attempts to increase the access of poor consumers to needed food supplies, particularly in the short term. Increasing the purchasing power of low-income groups in the longer term involves improvement of employment opportunities and income for the group. Once these have been improved, households have the potential to raise consumption and nutrition levels on a more permanent basis.

1/ Alan Berg, "Increased Income and Improved Nutrition: A Shibboleth Examined; International Development Review 12:3- (1970); Peter Timmer, Food Aid and Malnutrition, mimeo, 1977; Shlomo Reutlinger and Marcelo Selowsky, Malnutrition and Poverty: Magnitude and Policy Options. Washington, D.C., World Bank Occasional Paper # 23, 1976; John W. Mellor, "Nutrition and Economic Growth," Nutrition, National Development and Planning, edited by Berg, Scrimshaw and Call. Massachusetts: MIT Press, 1973; Peter Hakim and Giorgio Solimano," Nutrition and National Development: Establishing the Connection," MIT International Planning Program, Discussion Paper, No. 5, July 1975.

Governments, in fact, influence people's consumption patterns and nutritional status in thousands of ways. Some actions are deliberate, most are not. Some impacts policy-makers and planners are aware of; most they are not. Many LDC governments are directly involved in the production, processing and distribution of food--owning and managing ration shops, government farms, state-owned flour mills, etc. LDC governments also manage critical health facilities, send out teams of nutrition educators, and pay for the digging of wells to provide safe and potable water. LDC governments can also influence nutrition indirectly, setting price ceilings and floors, controlling foreign exchange, establishing minimum wages, etc. Many of these actions are supported directly or indirectly by donor governments.

The major point made in "AID's Responsibilities in Nutrition" is that these indirect activities can have significant effects on people's nutritional status even though their objectives are other than nutritional. If so, the paper argues, then policy makers and planners should be in a position to estimate the effects on consumption patterns and nutrient intakes of AID policies and programs, including those designed to influence employment, land use, food supply, prices, trade, and food marketing. The problem, the paper continues, is that neither they nor others have a real understanding of the consumption effects of the policies and programs they advocate and implement daily. AID, itself, the paper concludes, has financed an impressive list of agricultural programs with little or no idea of the impact these activities have had on the food consumption patterns of people or their nutritional well-being.

Although governments establish economy-wide goals, policies, programs, and projects are usually designed sector by sector. Thus governments may have nutrition goals, but because there is no well-defined nutrition sector, these goals have to be achieved through actions undertaken in other sectors - the agricultural sector, the health sector, the education sector, and even the commercial and industrial sectors. Each of these sectors, of course, has its own goals. These goals may be incompatible with the nutrition goals, or even more likely, the specific means chosen to obtain sector objectives may have a negative effect on the nutritional well-being of particular groups.

Agricultural policies and programs appear to have a major impact on consumption and nutrition in that they determine how much of what foods are produced, and, in many cases, at what prices the commodities are sold. Such policies and programs also affect the employment opportunities for income levels of a significant proportion of the population in most developing countries.

Goals for the agricultural sector are usually expressed in terms of economic aggregates -- increased production, greater foreign exchange earnings, higher farm incomes, increased food supplies. Improved nutrition is only occasionally a stated goal of the agricultural sector, but even then is expressed in aggregate terms -- an average availability of 2200 calories per capita per day, for example. Agricultural planners are beginning to look at how the benefits of particular policies and programs will be distributed, particularly in income and employment terms. Similar consideration could and should be given to the ultimate nutritional impacts (on those people at nutritional risk) of the agricultural

plans, po cies, and programs which are implemented. The analytical and policy issues involved need to be addressed from an interdisciplinary perspective.

A major reason for the lack of understanding of the consumption effects of the whole range of policies and programs is that the issues involved are complex and intricate. For instance, what is involved if the government decides to try to improve the diets of the urban poor by reducing retail food prices by fiat? In the short run, a decrease in retail food prices will probably increase the purchasing power and improve the nutrient intakes of the urban poor who purchase most of their food. But what of the rural producer? Lower market prices may lower profitability and act as a disincentive to production, thereby reducing farm income and purchasing power. The price effect, however, increases the portion of rural real income spent on purchased food. Estimation of the net impact in rural areas must take into account exactly which commodities are grown and which are purchased. In the medium term, the production decrease will affect urban consumers through a decrease in supplies. Unless imports are increased to compensate for reduction in locally produced supplies, prices may again be driven up for urban consumers -- again affecting the poor -- with limited incomes, more than the wealthier.

Even in the formulation of supply strategies, the relationships between increases in food supply and the malnourished are seldom taken into account. Calculation of aggregate

national per capita availability of specific foods and/or nutrients is ordinarily the only attempt to consider nutritional needs. These calculations, of course, completely obscure the extent and location of the problem. Explicit measures are seldom taken in conjunction with programs designed to increase supplies to raise the effective demand of the poor. Nor do planners and decision-makers think in terms of redesigning policies--land reform, investments in infrastructure, extension-- to improve the nutritional well-being of the urban and rural poor.

Another reason for the failure to consider the nutritional impacts of agricultural policies is technical. Analytical techniques are available which enable economists to quantify relationships among aggregates with some degree of accuracy. Techniques for analyzing the distribution of benefits, on the other hand, are far from adequate. This type of analysis is crucial, however, if one's goal is to understand and improve the nutritional implications of development policies and programs. As noted earlier, the total food supply in most developing countries, including many of those with the lowest per capita incomes, either exceeds or is nearly enough to provide nutritionally adequate diets for their entire population. Malnutrition exists in these countries because food is not equitably distributed. Until the distribution impacts of various policies and programs can be better estimated, policy makers and planners will remain in the dark about most of their consumption/nutrition impacts.

Responses to the Problem

NAS Study: Research on the nutrition effects of government policies was identified as one of twenty priority research areas by the 1977 NAS "World Food and Nutrition Study." This recommendation reflects a growing awareness that "Government policies...formulated, implemented and changed with little consideration for their ultimate effect on nutrition can nevertheless have major effects on nutrition."[1/] Three specific research areas were identified:

> One research area encompasses the nutritional effects of food supply policies and practices, including production strategies, agricultural research priorities, agricultural extension and rural credit services, food self-sufficiency, food aid, and resource use including land tenure practices.
>
> Another concerns the nutritional consequences of various food distribution and marketing policies and practices, including pricing policies, marketing technologies, delivery systems, international trade, and grain buffer stocks.
>
> A third research area would be the nutritional implications of general government policies, such as income redistribution, taxation, and employment.[2/]

The study recommended undertaking comparative studies of the experiences of different countries with different policies. Simple models, the study concluded, also need to be developed for predicting and evaluating the effects of program and policy interventions.

[1/] NAS, World Food and Nutrition Study, p. 66.

[2/] IBID.

AID Initiatives: AID too has expressed a growing concern that the nutritional status of the urban and rural poor may be more affected by the range of government development policies and programs than by direct nutrition interventions. Of particular interest to AID are situations where what appear to be positive steps in nutrition planning or nutrition interventions are negated by macro-policies which have adverse impacts on the nutritional status of the low-income groups.

"AID's Responsibilities in Nutrition" describes this concern and recommends that the Agency devote more attention and resources to improving the consumption/nutrition benefits of development programs, particularly those in the agricultural sector. The NAS study identified this area of policy improvement as a research priority. "AID's Responsibilities in Nutrition" presents it as an "operational initiative." Research--understanding more about the consumption/nutrition effects of agricultural and other policies--is only the first step. AID's ultimate objective is to develop and make operational within AID and LDC planning units techniques for taking what is known about a policy's effects on income and prices and predicting what will happen to people's consumption patterns and nutrient intakes. This project is designed to be consistent with this emphasis.

This initiative is consistent with the Office of Agriculture's interests in improving agricultural sector planning. Adding consumption to agricultural planning can be thought of

as an integral part of their objective to help countries "clarify the consequences of existing development patterns and identify feasible and consistent strategies and policies for assisting target groups." This initiative is also consistent with AID's "Agricultural Development Policy" which makes a link between the goal of increasing food supplies and the goal of more equitable distribution. The objective expressed in this agricultural strategy paper is not just to grow more food but "to get more food into the hands of hungry and malnourished people." The number and range of intervening factors--prices, jobs, incomes, physical accessibility to markets, food habits, social systems, health, politics--make the task of achieving these two goals a more difficult one.

This initiative also complements the Office of Rural Development's interest in looking at the backward and forward linkages of the agricultural sector and how development in the agricultural sector affects other dimensions of rural development and the well-being of rural people. Improving people's well-being is a broad concept which encompasses increased levels of income and employment, reduced rates of mortality and morbidity, and increased availability of education and health services, for example, as well as improved nutrition. The problem of estimating the impact of alternative development policies on the well-being of rural people in all its various dimensions is immense--so immense that separating improved nutrition out as an objective and taking a separate look at the potential impact of agricultural and other development policies

and projects on consumption patterns and nutrient intakes should not be viewed as a duplication but as a complementary activity.

Mission and country interest in the project also appears strong. Cable responses to the draft project paper and discussions with mission and government personnel during the reconnaissance trips to Latin America and Asia indicated sensitivity to the problem and interest in incorporating consumption/nutrition concerns into their planning activities.[1/]

B. DETAILED DESCRIPTION

Six assumptions underlie the design of the Consumption Effects of Agricultural Policies (CEAP) project:

1. Lack of access to food and insufficient supplies of food are two major causes of malnutrition in the developing countries.

2. Policies and programs adopted in other sectors (especially in the agricultural sector) can have a major influence on people's nutritional well-being through their influence on the amount of food available and determining who has access to that food.

3. Agricultural and other economic development policies and programs will not be designed or redesigned to include better nutrition as one of their objectives unless policy-makers and planners know more about the potential impacts of various policies and programs on food consumption patterns and nutrient intakes.

4. Sensitizing policy-makers and planners to the potential impacts is not enough to persuade them to act; they need to be convinced with facts and figures.

5. Adding consumption and nutrition concerns to existing agricultural data collection, analysis, and planning activities is the most feasible way to accomplish the tasks involved.

Practically all CEAP activities will have a country focus. This strategy is in keeping with the current AID emphasis on

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[1/] See Annex B for a country-by-country review of the prospects for CEAP involvement.

field support activities and host country priorities. This country emphasis also stems from a belief that the best way to ensure that planning techniques will be useful in pragmatic planning situations is to test them, or even better to develop them, within actual LDC planning systems. In AID project terms, this means that most of the activities financed under CEAP can be categorized as applied research and technical assistance.

Most activities will also follow an add-on approach. This means adding nutritional observations to agricultural data collection systems, adding nutritional variables to agricultural planning and policy formulation activities, adding nutrition-oriented staff and skills to current agricultural planning establishments, and adding nutrition outcomes to the other policy choices which decision-makers make.

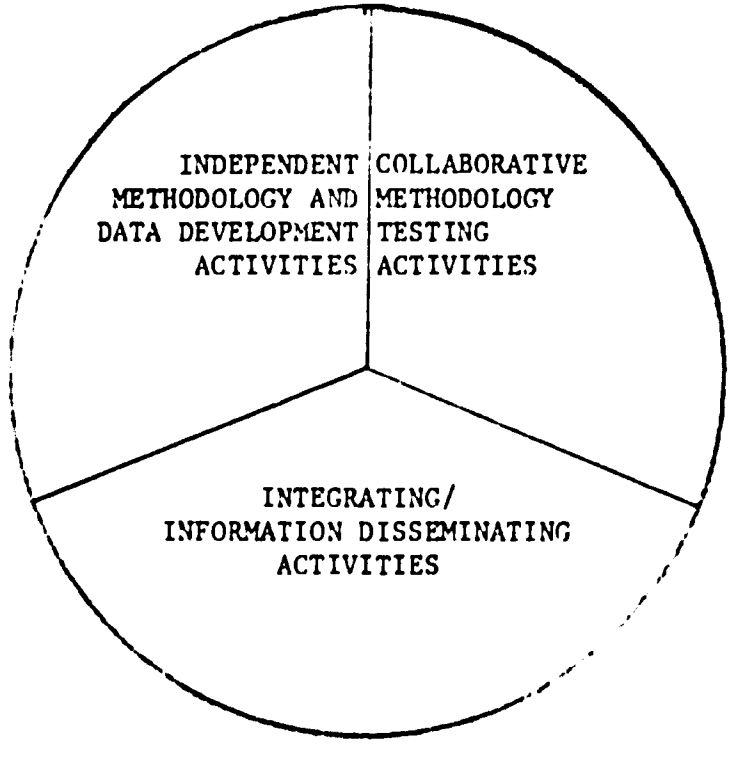
Treating these activities as additions to current agricultural planning activities reflects political and fiscal realities. The amount of money and time needed to develop and maintain an agricultural planning system could never be justified solely on the basis of the need to understand the impacts of agricultural and other development policies on consumption patterns and nutrient intakes of those at risk from malnutrition. But, unless the habit of considering these nutritional outcomes is incorporated in the planning process as often as possible, policy-makers will continue to make important decisions without being aware of their potential impact on the nutritional status of the disadvantaged.

The project is designed to develop some methodologies relatively quickly, as well as to gather experience adapting and using these methods in ongoing planning systems. Three types of activities will be undertaken:

1. Developing methodologies and data using country-specific data, working in countries as much as possible, but independent of country planning systems.

2. Testing the methodologies developed for their usefulness to decision-makers in several LDC planning systems. These collaborative activities will also provide information on the realities of planning and policy formulation in developing countries.

3. Integrating the results of various activities financed under CEAP and disseminating information on the methodologies and their uses to AID and LDC planners and decision-makers through TDYs, seminars and workshops, and an information network.



Project Scope

The range of activities to be implemented under the CEAP project is very wide, ranging from the development of data collection, analysis, and planning methods to institutionalization of such methods in planning units and utilization by decision-makers. It is clearly impossible, therefore, for all activities to be structured exactly the same, to consider the same variables, and to use the same techniques. But the umbrella nature of the project requires that all activities will share a set of common elements which, taken together, establish a common conceptual framework. These shared elements are defined in this section. Each activity is expected to build from these basic elements.

Nutritional Status and Nutrient Intakes: Improving the nutritional status of people who are at nutritional risk is the ultimate goal of the project. Attention will be centered, however, on implied nutrient intakes (that is, measured food consumption) and not on nutritional status per se. Nutritional status, which is a measure of an individual's level of health, is determined by both the amount of nutrients ingested and how well these nutrients are utilized. Physiological utilization questions are beyond the scope of this project, however. The complexity of the synergistic relationship between food intake and health in determining nutritional status also demands more attention in its own right, and thus is the focus of other DS/N projects.

Relating agricultural policies and programs to nutritional status statistically, ignoring, for the time being, the intervening causal relationships will not be possible either. At least not until nutritional status data which can be quantitatively related to food availability and to agricultural production. income, and employment at some level of disaggregation becomes more readily available. It is now quite rare. Where data collection activities are undertaken in project activities, it may be possible to overcome this limitation by supplementing consumption data (that is, implied nutrient intakes) with anthropometric data measurements or clinical examinations of certain household members. Time and costs will, of course, restrict the extensive supplementation of data sets in this way.

Protein - Calorie Malnutrition: The activities funded under this project will focus primarily on nutritional problems stemming from poverty. Limiting the scope of the project to nutrition problems stemming from poverty should not be too serious a limitation. Most protein calorie malnutrition (PCM) is directly related to poverty--people either cannot produce sufficient food for themselves or lack access to sufficient food. And protein calorie malnutrition is widely agreed to be one of the world's pressing nutritional problems. While the effects of PCM are most dramatically seen in children with kwashiorkor

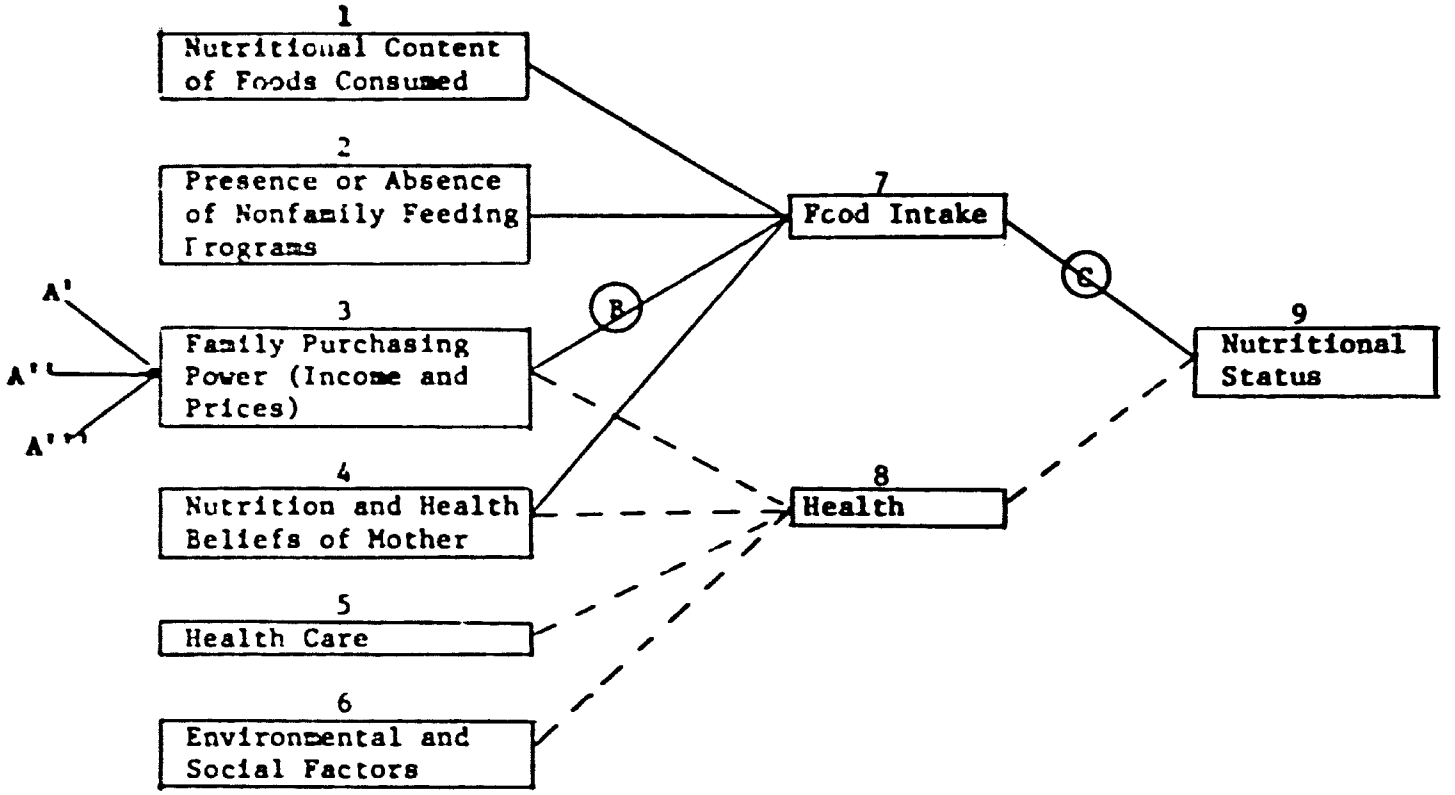
or marasmus, and adults suffering from a shortage of calories and protein are less visibly debilitated, the effects are equally serious in both personal and societal terms. Productivity is decreased, ability to cope with infections and other forms of stress is lowered, and escape from the poverty trap, with its high incidence of PCM, is blocked. In this project, therefore, "nutritional risk" will be defined in relation to implied protein and calorie intakes.

Purchasing Power: Prices and Incomes: Three major subgroups in most developing countries are likely to have significant proportions of their members at risk or suffering from PCM -- the urban poor, landless laborers, and small subsistence-oriented farmers. The prices of food in relation to incomes, "purchasing power" in the conventional sense, determine urban consumption/nutrition levels to a large extent. Income-earning opportunities constrain access of landless laborers to food but the effectiveness of earned income in providing adequate food is further constrained by price factors. Small subsistence farmers' incomes are largely determined by their own production. Their chances for improving both farm output and consumption, however, are also to some extent dependent on the prices of the crops they can sell. The purchasing power calculation is, therefore, a critical element in the determination of nutritional risk.

Figure B illustrates some of the determinants of nutritional status. Household purchasing power is only one of the associated factors but may be the one most affected by government policies designed to achieve other than nutritional objectives. Therefore, activities in this project will focus on the determinants of purchasing power (Linkages A', A", A"') and the relationship between household purchasing power and food intakes (Linkage B). The focus on Linkage B is also consistent with the project's emphasis on poverty as a primary cause of malnutrition. Unless it is possible to determine the relative impacts of factors which effect household purchasing power, it will be impossible to formulate policies and programs to improve it and subsequently to improve the nutrient intakes of poor households.

The Basic Unit of Analysis: the Household: The focus in this project will be on household food consumption patterns and implied nutrient intakes. The individual, not the household, is the ideal unit of analysis from the nutritionist's point of view. Individuals after all have different physiological needs depending on their age, sex, activity levels, growth and stress conditions. Food intakes, therefore, are most meaningful when measured and evaluated for individuals. However, collecting data on the quantities of food consumed by individuals along with sufficient information about all

FIGURE B. DETERMINANTS OF NUTRITIONAL STATUS



*Adapted from a Diagram by Call and Levinson (4).

the other variables needed to explore the relationship between economic policies and food consumption patterns in a large enough sample to be statistically significant would be extremely costly. The cost would certainly be much too high for any developing country government statistical office or planning agency to fund on a somewhat regular basis.

Continued reliance on per capita consumption figures calculated at more aggregate levels than the household to describe or as a basis for analyzing nutrition problems is impossible, however. Deficits in food consumption by income level, region of the country, occupation, etc., are completely masked.

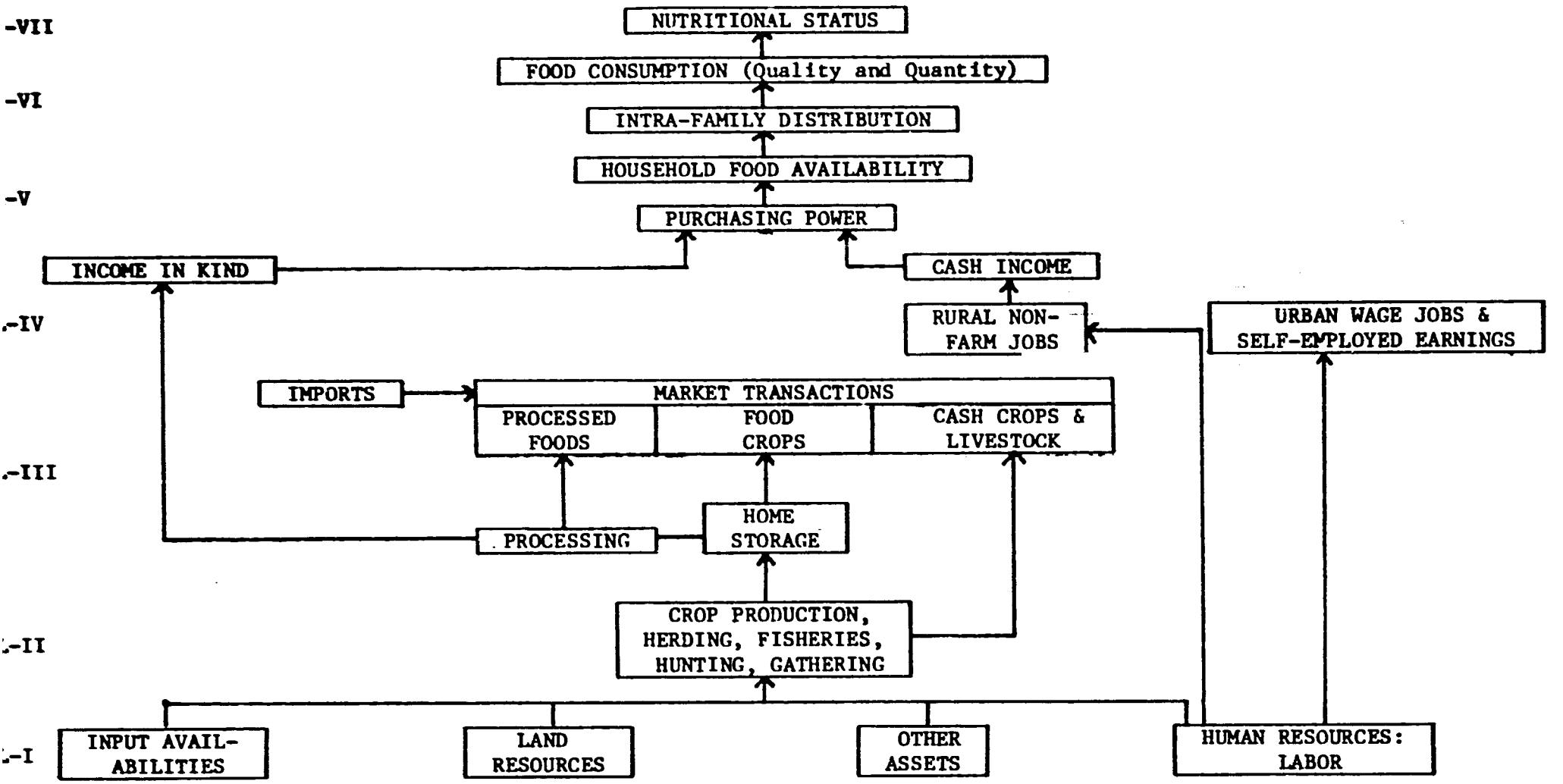
Analyzing food consumption patterns and implied nutrient intakes by households appears to be a workable compromise. Both production and consumption behavior can be meaningfully analyzed at the household level, since many decisions regarding these activities are made at the household rather than the individ- level. Information on households can also be aggregated into larger groups which have meaning in a planning and/or policy making context. Households can, for example, be easily identified as members of target groups according to their location, occupation and land ownership status, as well as by their income levels and levels of food intake.

Intra-family distribution of food is recognized as important and should be the subject of other research activities. Malnourished individuals exist, for example, even in households which have high per capita incomes because of poor food distribution patterns, individual ill health or lack of nutritional knowledge. These problems are felt to be more amenable to direct interventions, however -- nutrition education, improving sanitation, direct feeding programs -- and thus lie somewhat outside the scope of this project with its emphasis on economic policies and their impact on food prices, income and employment.

Importance of Interdependencies and Linkages: To integrate the elements concerned with nutrient intakes, purchasing power, and household access to food, particularly for households at risk from protein-calorie malnutrition, with the agricultural policy and program decision being made in any given environment, it is necessary to be able to trace how a particular policy links with a particular group of target households.

Figure C illustrates the various levels through which a policy decision, say, to provide high-yield varieties of seeds would be filtered before a consumption/nutrition impact could be predicted or measured. An HYV seed distribution program would affect the availability of inputs (Level I).

FIGURE C. DETERMINANTS OF HOUSEHOLD FOOD AVAILABILITY



These seed inputs have to be used in conjunction with other inputs--fertilizer and water, for example--for maximum effect. If the facilitating inputs were also available, production would probably increase, i.e., the HYV seed would have an impact on the Rural Crop Production segment (Level II). This agricultural program, through its impact on production, could also affect other Level II factors--urban self-employed earnings or rural nonfarm jobs--if both marketing and off-farm processing activities were positively affected. If competitive food products (Level III) are not imported to increase supplies and drive down prices for the increased domestic production and if excess local demand exists to help keep prices up, farmers may sell more on the market. If prices do not drop too far, both cash income and income in-kind (Level IV) will increase, although in different proportions for different groups. In Level V, household purchasing power is translated into household food availability. Food availability in any given household may remain the same, increase, or decrease, depending on the consumption characteristics of the household. At Level VI, other factors come into play as the household food is divided among household members according to custom or habit. Greater food supply may result in any given individual's nutritional status being improved (say, if everyone gets more), or unaffected (if the extra is only given to certain household members, for instance). If the

household food supply is actually decreased by excessive sales (due to the attractiveness of the market) or if the increased income is spent on non-food or non-nutritious commodities, everyone may be worse off nutritionally.

Agricultural economics research, planning, and programming efforts have generally focused on the relationships between the variables in Levels I - III. Nutrition research and programming have generally concentrated on improving the nutritional efficiency of household decisions at Levels V and VI. Relatively little attention has been directed to determining what happens to food consumption patterns and nutrient intakes when certain changes occur in variables in the "agricultural" side of the diagram--a change in food production patterns, for example, due to the introduction of irrigation or land reform.

How does one translate this change in production through the various linking steps to changes in the calorie and protein intakes of various income groups of households. A recent study attempted this task, tracing given food supply increases through price changes and converting them into changes in consumption patterns (or implied nutrient intakes) of urban consumers at various income levels.[1/]

[1/] Per Pinstrup-Andersen, Norha Ruiz de Londoño, and Edward Hoover. "The Impact of Increasing Food Supply on Human Nutrition: Implications for Commodity Priorities in Agricultural Research and Policy. "American Journal of Agricultural Economics, 58:131-142, 1976.

This task required both own- and cross-price elasticity matrices (by income strata) and a full set of market equations to translate the supply increases into price changes. This analysis focused on Levels IV and V, ignoring the factors which might have given rise to the supply increases, but it illustrates that such analyses can be done given an adequate data base and certain assumptions.

This project will attempt to develop and/or improve the capacity to deal with the linkages between Levels III-V. Determining what changes people will make in their food consumption patterns if their incomes, the price of food, and/or other commodities change is at the core of the problem. By adding on to the work of more traditional agricultural analysts engaged in activities at Levels I - III, whose endpoints are incomes and prices, a significant extension of capacity to analyze the consumption/nutrition outcome of policy can be achieved. The methodological problems involved in completing these linkages will provide the substantial hurdles for the activities funded under this project.

Project Goals, Purposes, Outputs

The CEAP project is designed as an umbrella for a variety of related activities, all with a methodological orientation and most with a country focus. Each activity is designed to make an important contribution to the stated goal and

purpose. However, no one activity is expected to contribute to all dimensions of the project or produce all the expected outputs.

Project Goal - This project is expected to help improve the "consumption and nutritional benefits of development policies and programs" by "improving the planning and policy formulation process in developing countries". Most government policies and programs are formulated, implemented, and changed with little, if any, consideration for their ultimate nutritional impact. AID has also financed an impressive list of agricultural programs, with little or no idea of the impact these activities have had on the food consumption patterns of people or their nutritional well-being. Yet, as experience has shown, the nutritional status of the urban and rural poor in developing countries may be more affected by this range of policies and programs than by direct nutrition interventions. The first problem is that no one has a real understanding of the consumption effects of the policies and programs they implement and advocate daily.

Methodologies are available or could be developed that would enable planners and decision-makers to greatly increase their understanding of the nutritional impacts of a broad range of programs and policies if only the right questions were asked, the necessary data gathered and/or organized, and the analyses performed. The assumption critical to achieving the goal of "improving the consumption and nutritional benefits

of policies and programs" is that once the consumption and nutritional impacts of these policies and programs have been determined, there will be the institutional will to improve them. This is the second problem.

Project Purpose - This project is designed to develop methodologies for determining the consumption/nutrition effects of agricultural policies and programs on people's food consumption patterns and nutrient intakes; to demonstrate their utility by having them used in several LDC planning institutions; and to disseminate information about these methodologies, their potential uses, and how to use them to AID and LDC planners and decision-makers. Project success requires progress in all three areas.

The emphasis on development and application of analytical methodologies stems from a belief that the adverse nutritional impacts of economic policies or events may be avoided or mitigated if decision-makers have available to them more precise information about relationships between economic policies or events and levels of food consumption and nutrient intakes. Take, for example, an assessment of an aquaculture program which will increase the supply of local fish by 50 percent. Can this be expected to affect local protein malnutrition?

If, because of the costs associated with the construction and maintenance of the fishponds, prices which will be charged for the fish produced will be at or above the current price of fish, one could expect consumption to be restricted to those households in the upper and middle income brackets whose dietary patterns already show sufficient protein. Perhaps, however, the increased supply of fish will cause prices for other fish to drop; can it then be demonstrated that lower income households which need the protein will share in the benefits of the aquaculture program? What about their access to improved supplies? Can fish produced on the coast be transported to the malnourished in the mountains? At what cost? And so forth.

These methodologies are expected to be useful even in cases where the adverse nutritional impacts of specific development policies and programs are recognized but cannot be alleviated in the short run, for example, by changes in these policies. By more clearly identifying the groups which are being or will be adversely affected by a policy or set of policies, planners and decision-makers should be able to design better targeted and, therefore, more cost effective direct nutrition intervention programs.

In this project, the nutritionist's concerns will be integrated into the economic analyst or planner's frame of

reference rather than the other way around. Emphasis is placed on determining the nutritional outcomes of agricultural policies and programs and on utilizing this knowledge to predict and/or facilitate improvements in the consumption patterns and nutrient intakes of the urban poor, landless laborers, and small subsistence farmers. The question of whether redesigning existing policies and programs is a cost effective way to accomplish nutritional objectives relative to other nutrition interventions is important, but not the question this project is designed to answer. The research question emphasized in this project is: which agricultural strategy will have the greatest positive consumption/nutrition benefits for the largest number of consumers while meeting other requirements of the agricultural sector--earning foreign exchange, providing industrial inputs, etc.?

The tools and methodologies developed will be based primarily on those used by economists. Analytical approaches used by other social sciences will, however, be incorporated as appropriate. The more subjective observation and open-ended interviewing techniques used by sociologists and anthropologists could be helpful in identifying and specifying non-economic variables of importance--food taboos, kinship sharing ties, culture, etc. Measurement techniques used by nutritionists to determine nutritional status will also play a role in establishing baselines and measuring improvements.

These purposes can be achieved only if the following assumptions hold true:

1. Expertise to develop methodologies is available;
2. Interest and support in AID and developing countries are sufficient;
3. It is financially and economically feasible to develop methodologies within the budget allotted; and
4. It is possible to relate quantitatively consumption/nutrition benefits to a particular policy or program.

The availability of expertise is treated as an assumption rather than a given because of the interdisciplinary nature of the project. While several persons have built reputations in the combined fields of agricultural economics and nutrition, the number is thought to be significantly smaller than the number involved in rural credit, for example. How many of those experts in this area will have time to participate, especially as resident technicians, is another question. In addition, no single institution can be readily identified as having overwhelming capability in this area. For these reasons, experts from a number of institutions and organizations will have to be identified and utilized.

Interest and support from AID missions and institutions in developing countries is felt to be critical to project success. The responses of AID missions to initial contacts through cables and field visits have been favorable. Mission and country concurrences will be required before any methodology and/or data development activities will take place in a country. Preference will be given to countries which have

problems of malnutrition and seem genuinely interested in dealing with them. Mission and country understanding of the project's goals and receptivity to its outputs will be encouraged through in-country seminars and additional consultancies. Full mission and country agreement and support, of course, will be required for all collaborative activities. (See Annex B for a review of country reactions to CEAP and the prospects for CEAP involvement.)

The budget (see Section 3.B.) is felt to be minimal for the amount of effort needed to accomplish the purposes of this project. For this reason, participants in projects related to but not directly funded by this project will be included in the information network which is to be developed and in the conferences and workshops to be scheduled. Expanding the numbers of people and institutions involved in the project through such an information network should increase the probability of getting planners and decision-makers to incorporate nutritional concerns into their thinking and decision-making processes.

The fourth assumption incorporates perhaps the most unknowns. Quantification is essential but difficult. Measuring how consumption behavior responds to changes in single factors--income, price, seasonal supply variations--is in itself difficult. The lack of data has limited the development of relevant theory and its application in planning environments. Even a single policy change may involve a complex set of changes at

many levels involving a host of variables at each level. At the sector level, already complex models to analyze sector behavior will need further refinements, particularly in the way in which demand is specified, to reflect nutritional concerns. At the household level, models which specify both production and consumption relationships must be developed and adapted to particular cultures and social structures. Models for aggregating households into units which have planning and programming significance (e.g., provinces, zones, regions) will also have to be designed to fill the gap between the most macro and micro levels.

It will not be possible to quantify the relationships between economic policies and programs and consumption patterns and nutrient intakes in all developing countries at this time. Many countries do not have the data or trained manpower necessary. Nor are funds available in this project to help them collect all the necessary data. Several activities will be undertaken in countries where the data and trained manpower needed to quantify these relationships are already available or can be developed with a marginal effort. Another sub-project will provide an indication of what methods can be used and conclusions drawn about the consumption effects of economic policies in situations where relatively limited amounts of data are available. Other sub-project activities are specifically designed to help develop and/or improve the data bases in countries.

Project Outputs - Project purposes are directly translated into the following five project outputs:

1. Methodologies (simple as well as more complex) for measuring the consumption/nutrition effects of agricultural and other development policies;

2. Reviews of country data systems and recommendations on how to improve the data so that the analytical methodologies developed can be used;

3. Methodologies tested in the planning systems of three or more developing countries;

4. Guidelines for internalizing these methodologies within LDC planning agencies; and

5. System for disseminating information on methodologies developed and their uses established.

Since methodologies do not exist in a concrete form like roads or irrigation canals, achievement of project outputs will be measured in terms of ideas developed, papers written, computer software developed and/or tested, and numbers of people knowing about and using project methodologies. Specific outputs expected from each methodological and data development sub-project are given in the more detailed sub-project descriptions in Annexes C through E. Types of outputs expected include state-of-the-art papers; analytical frameworks; descriptions and evaluations of household consumption surveys; reports on policy impact case studies; simplified analytical techniques; more complex analytical techniques and the computer software for utilizing them; guidelines for using these techniques; guidelines for improving the design and implementation of household consumption surveys, and guidelines for adding consumption/nutrition concerns to agricultural surveys.

The more theoretically interesting results will undoubtedly be published by the researchers themselves in scholarly journals. Results stemming from the applied research activities will probably be included in the working documents prepared by the planning units producing them or by other organizations and agencies. A bibliography of all publications which incorporate project inputs will routinely be compiled and updated by the project director and will be available through DS/N and DS/AGR.

Those methodologies and techniques developed in the "collaborative" projects will, or course, be internalized into the planning systems of the countries incolved. Internalization implies that analysts and planners associated with the local institution will be capable of applying the methodologies, adapting them as necessary to changing conditions, and providing decision-makers with reliable results on a timely basis. Sensitizing both AID and LDC planners in other countries where results would appear to be potentially useful will be facilitated by developing training materials to be added to AID and other training activities.

An information network will be established to facilitate the flow of papers and ideas among planners and researchers. The network will include not only those persons directly involved in project-funded activities, but also those working on or interested in similar activities. An effort will be made to link this network with the larger agricultural and rural development network maintained by the Agricultural

Development Council and with various regional agricultural sector planning networks being established to prevent duplication of services and to foster broader dissemination of results. Communications among network participants will be encouraged by conferences and workshops. A substantial amount of travel by the RSSA staff will personalize communications between U.S. and field activities.

Many stumbling blocks can be foreseen. Data sets which at first seem to contain complete information may turn out, upon closer examination, to be unsuited for the tasks planned. Governments supporting planning activities with staff and/or facilities may change their priorities and remove support. Counterpart staff may perceive their personal objectives to lie elsewhere and depart midstream with a significant amount of expertise and information. And so forth.

Project Inputs - Project outputs depend on six critical inputs:

1. Expenditure of $2.7 million over a four-year period;
2. A network of professional analysts from economics, nutrition, social sciences, mathematics, and statistics; and
3. RSSA economists to assist with management responsibility and to undertake substantive involvement in overall effort.

Methodology and data development sub-project salary, travel, publication and computer costs have been estimated (see Tables 1-5, pages 83 through 89). Sample budgets have been developed for two of the potential collaborative activities (see Annexes F and G). The information network is expected to provide a mechanism for increasing the number of individuals with knowledge about CEAP activities and access to CEAP outputs at a minimum extra cost.

Mission and country concurrence will be required before any in-country activities will take place. More detailed statements on objectives, scopes of work, and financial inputs will have to be agreed upon in the case of all collaborative activities. Preference will be given to the development of collaborative activities in countries where:

1. Nutrition concerns and the specific planning techniques can be added to or integrated with ongiong AID/LDC activities;

2. LDC research and/or planning institutions exist which, with marginal amounts of technical assistance and funds, can be helped to expand the scope of their activities to include nutrition;

3. Local shortages of paper, gas, or airline flights will not cripple field work; and

4. Project personnel will have sufficient access to data and data sources.

Participation in project-related activities by host country nationals and by AID personnel will be encouraged as appropriate. Continued commitment by mission and host government personnel will be encouraged through follow-up activities by AID, RSSA, and contract personnel.

Some supervisory travel will be required to maintain contact with all applied research activities. Resident personnel may also be required to achieve activity objectives when the objectives include improving LDC research capabilities and/or internalizing the methodologies in a planning environment. It is expected that persons and institutions most knowledgeable about potential project activities and most capable of producing the expected outputs can be identified.

Methodology and Data Development Activities

Successful prediction of the consumption/nutrition effects of agricultural policies and use of these predictions in a planning and policy-making setting requires analytical techniques plus data. Methods/techniques must be available or developed for specifying the relationships (linkages) between a given initial condition (a policy or economic event) and its impact (on consumption patterns and nutrient intakes). Information must also be available indicating how the relationships actually worked at a given time, how strong the various relationships were, and what kind of variances occurred in different relationships.

The theory and methods developed and used to analyze consumption behavior in developed countries provide a starting point. Techniques for linking changes in incomes to changes in expenditures--income elasticities--have been developed and tested. If information is available on the quantities of various foods purchased as well as the amount of money spent on them, income elasticities of demand for quantities of nutrients can also be calculated. If a policy change can be traced to an increase in income, and the income change linked to a change in household expenditure and quantities of food purchased, then the complete path between a policy and its impact on consumption patterns and nutrient intakes can be traced. Income, of course, is not the only important

intervening variable; the impact of policies on availability of food and food prices and their impact on consumption patterns and nutrient intakes also have to be analyzed.

The tradition of analysis in developing countries has been to borrow theory and methods from the developed countries, and to adapt these methods to meet their constraints of data, time, computer facilities, etc. Where no clear rules exist for adaptating methods, or where the constraints have been extremely tight, the analysis has simply not been done. This course of action (or inaction) leaves gaps in knowledge and contributes to the conclusion drawn in "AID's Responsibilities in Nutrition" that "policy-makers and planners do not have a real understanding of the consumption effects of the policies that they design and implement."

To analyze the complete set of linkages from policy or program to consumption/nutrition impact, some analytical techniques will have to be modified--income and price elasticity matrices, for example--and some new techniques will have to be developed--farm household models, for example. Additional and improved data will also be needed. Although methods can be developed without empirical data, their analytical capabilities and utility to decision-makers is not easily demonstrated unless empirical data is available. Nor will these analytical methods be used in an on-going planning process unless empirical data is available, preferably on a somewhat continuous basis. For these reasons, this project will

finance both types of activities--development of analytical methods and development of the data needed to utilize them.

Four specific sub-projects were designed to fill the more critical methodological and data gaps identified during the course of the projects development: (1) development of techniques and data basic to the analysis of household consumption; (2) techniques for analyzing and predicting farm household behavior; (3) development of consumption/production/nutrition data on farm households; and (4) short-term policy impact studies. All four activities are designed to develop analytical methodologies and help improve the data needed to utilize them. These analytical methods and modifications in data collection and processing systems will be developed and tested, using country-specific data, and working in countries as much as possible. However, most activities will operate essentially independent of the existing planning system. The procedures for and problems involved in institutionalizing the data collection, processing, and analysis techniques developed in these sub-projects will be a major focus of all collaborative projects.

Development of Techniques and Data Basic to the Analysis of Household Consumption: Determining what changes people will make in their food consumption patterns if their incomes and/or the price of food (and/or other commodities) change is at the core of the problem of how to determine the consumption/nutrition effects of agricultural policies. The purpose of this sub-project is to develop analytical techniques which will

enable agricultural planners to translate the income and price affects of agricultural and other development policies into their consumption/nutrition impacts.[1/] Income and price elasticity matrices are two most promising approaches. Developing procedures for computing separate income elasticities for each major income group and determining whether price elasticity matrices can be constructed from cross-sectional data or whether the Frisch method provides an acceptable alternative are several methodological questions which need to be explored.

The major reason why the necessary income and price elasticity matrices have not been constructed to date is insufficient data--not inadequate theoretical underpinnings. Therefore, the second purpose of this sub-project will be to develop/improve the necessary data base. In keeping with the add-on strategy being proposed in this project, data sets collected for other but related purposes were examined to see whether the necessary income and price elasticity matrices could be calculated from them. Household budget, expenditure and consumption (b/e/c) surveys seemed the most promising. Because of their role in constructing cost-of-living indices, most countries have undertaken and will continue to undertake some form of b/e/c survey. Some b/e/c surveys also appear

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[1/] This sub-project will last 30 months and is expected to cost an estimated $850,000. See Annex C for complete details.

to have the information needed to construct income and price elasticity matrices by income group--it just needs to be reprocessed. Others perhaps could be easily modified.

Four phases of activities will be financed under this sub-project:

1. A review and evaluation of existing b/e/c surveys in 12-16 selected countries. These reviews will include an evaluation of the potential for collecting and processing additional data and/or reprocessing existing data so that the surveys can be used for analyzing household food consumption and nutritional intakes by income levels, or other relevant aggregates which enable one to specify groups at nutritional risk.

2. The identification, development and evaluation of the cost effectiveness of alternative data collection and data processing methods in three to four of the above countries.

3. The adaption and/or development of quantitative techniques for using cross-sectional data to predict changes in consumption patterns and nutrient intakes given income and price changes.

4. Two conferences and assistance to Missions and governments through TDYs to incorporate these data collection, processing and analytical techniques into their planning processes.

Outputs expected from Phase 1 include, (1) an inventory of b/e/c surveys, (2) descriptions and evaluations of b/e/c surveys in 12-16 countries, (3) recommendations/guidelines for improving the design and implementation of the b/e/c surveys reviewed, and (4) a library of questionnaires, instructors' manuals, code books, tabulation plans. Outputs expected from Phase 2 include, (1) alternatives for reprocessing existing data or collecting and processing additional data identified, developed and costed out, (2) computer routines for processing and/or reprocessing the data developed and tested, and (3) necessary modifications for the questionnaires, instructor manuals and code books developed. Outputs expected from Phase 3 include, (1) a state-of-the-art paper, (2) detailed descriptions of and guidelines for using the analytical techniques tested and recommended, and (3) the computer software necessary to utilize these techniques. Outputs expected from Phase 4 include six consultancies and two conferences. The ultimate outputs desired from this subproject are, of course, changes/improvements in country planning systems.

Techniques for Analyzing and Predicting Farm Household Behavior: Different techniques will have to be developed to evaluate the impact of development policies and programs on small subsistence oriented farmers, since their choices include home production of food as well as sale of their output and labor. The purpose of this sub-project is to review analytical techniques which will enable agricultural planners to determine how the income and price affects of agricultural and other economic policies will affect the consumption/nutrition intakes of farm households.[1/] The development of models which treat farm households as units which make simultaneous decisions about production and consumption choices is a promising area for (1) improving our understanding of farm family behavior given changes in agricultural policies and (2) predicting their behavior.

Since AID is already financing the development of one such model under the "Consumption Effects of Economic Policy" project, a workshop is planned during the first months of the CEAP project to review this and other work and to develop an agenda for further research. Two major outputs are expected from this workshop: (1) a paper describing the state-of-the-art, and (2) a detailed research agenda.

Additional money will be set aside to finance additional methodological development. Two categories are foreseen, (1) financing activities identified as priority items in the work-

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[1/] This sub-project will last 6 months and is expected to cost an estimated $52,500. See Annex D for complete details.

shop research agenda, and (2) providing assistance to Missions and governments to undertake additional, perhaps more comprehensive, analyses using the farm household data developed under the next sub-project. No further details can be provided in this project paper, since neither the number nor type of activities can be foreseen with any accuracy now. Any activities financed in this way would be described in mini project papers which will be reviewed by the overall project's Inter-Bureau Advisory Committee.

Development of Consumption/Production/Nutrition Data on Farm Households: This sub-project is designed to help develop and improve the data base needed to analyze the effects of agriculture and other policies on the consumption/nutrition of farm families.[1/] Lack of production and consumption data for the same households has been a major constraint to the development and use of appropriate analytical techniques.

Again the possibility of following an "add-on" approach will be explored. Adding questions on consumption and nutrition to ongoing surveys seems a feasible way to get the data needed to add consumption/nutrition concerns to agricultural planning. Many countries are already collecting information on agricultural production, farm management, household consumption and expenditures, and market flows and prices.

1/ This sub-project will last 24 months and is expected to cost an estimated $350,500. See Annex C for complete details.

Improved methods for designing and implementing micro-level data collection systems are now available and should make it easier to add a consumption/nutrition dimension to existing surveys. And, perhaps most important, the marginal cost of adding consumption/nutrition information should be minimal.

Outputs expected from this sub-project include, (1) a state-of-the-art paper reviewing farm production/farm management, household expenditure/consumption and nutritional status surveys--their purposes, conceptual bases, field techniques and data commonly produced--to determine the potential for adding consumption/nutrition concerns to agricultural surveys, (2) reports reviewing and evaluating examples of surveys where efforts are planned to add consumption/nutrition concerns to other surveys which gather basic economic data on rural farm households, (3) guidelines for adding consumption/nutrition concerns to these surveys, (4) a workshop during which practitioners can review the guidelines and exchange information and compare field experiences, and (5) consultancies designed to assist Missions and governments undertake these type data collection activities.

Short-term Policy Impact Studies: The activities financed under this sub-project will focus on the broader set of relationships between policies and programs, how they affect incomes and prices, as well as what happens to people's

consumption patterns and nutrient intakes when incomes and prices change.[1/] This sub-project is expected to help identify more clearly the technical problems involved in undertaking such analyses at the same time it provides some preliminary analytical and policy guidelines. A third purpose is to develop relatively simple analytical techniques for describing and ultimately predicting the relationships between policies and programs and food consumption and nutrient intakes.

To achieve these purposes several short-term, in-depth analyses will be financed of important agricultural policies and projects in selected countries. Case studies will be limited to two broad topical areas, (1) a comparison and evaluation of the consumption/nutrition impacts of policies and programs which emphasize food or feed or cash or export crop production, and (2) a comparison and evaluation of the consumption/nutrition impacts of integrated versus single focus agricultural projects. The relative importance to attach to food/feed/cash/export crops and integrated versus single focus agricultural projects are both important policy/program questions in most developing countries and as such are currently under debate. Both raise fundamental

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1/ This sub-project will last 18 months and is expected to cost an estimated $529,000. See Annex D for complete details.

questions about trade-offs among the goals of the agricultural sector--food supplies/exports/foreign exchange/employment--and about alternative ways of allocating scarce governmental resources for agricultural development.

Outputs expected include (1) an analytical framework for evaluating the consumption/nutrition impacts of agricultural policies and projects, (2) reports on six case studies--four focusing on the consumption/nutrition impacts of foo feed, cash, or export crops, and two focusing on the consumption/nutrition impacts of package versus single focus projects, (3) six in-country seminars and one U.S. conference to communicate findings to government decision-makers, donor personnel, and concerned scholars, (4) several relatively simple techniques for analyzing the consumption/nutrition effects of agricultural and other development policies and projects, (5) a final report which integrates the individual case studies, sets forth a set of analytical guidelines and a set of analytical guidelines and a set of more preliminary policy guidelines.

Collaborative Methodology Testing Activities

Methodology and data development is only the first step. Equally important to project success is evidence that these methods can be adapted to the needs of LDC planning systems and evidence that they will.

The next steps--demonstrating the utility of these methodologies to planners and decision-makers and determining the feasibility of linking them into ongoing planning systems--are perhaps more difficult. Yet, until these methods have been tried in several countries, linked into their ongoing planning systems, adapted to produce better outcomes more efficiently, and used to produce results which are valued by planners and decision-makers, the process of methodological development cannot be said to be complete.

Similarly, CEAP purposes cannot be achieved if guidelines for internalizing the methods developed are not based on empirical knowledge of the problems involved in adding consumption/nutrition concerns to the planning and policy formulation process in developing countries.

Some type of collaborative arrangement seems the only suitable way to arrange for actually trying out some of these methodologies in several selected LDC planning systems. To achieve a real test of methods, some degree of country commitment will be needed. Before agreeing to such tests, however, developing countries will probably want assurances that the methods available are relevant, the results will be useful, and some help will be forthcoming to insure that their own staffs will be able to utilize these techniques once the tests are over. AID Washington, on its part, will want to learn about the processes for and problems of utilizing these methods to integrate consumption/nutrition concerns into planning systems so that it can provide adequate guidance to others on their use. It will also want to learn which methods and techniques are most effective in particular situations and what financial and staff inputs are needed to utilize which methods. To achieve these results, specific agreements will have to be reached on objectives and some commitments made in terms of staff and funds on the part of all parties--DS/N, missions, and host government.

To be consistent with CEAP objectives, these activities must also be add-ons. This means adding nutrition variables to agricultural planning and programming activities, adding nutrition-oriented staff and skills to current agricultural planning staffs, and adding nutrition outcomes to the other policy choices which decision-makers face. Because of this

add-on strategy, the specific activities which will be undertaken in each collaborative sub-project will depend on activities already ongoing in each country.

Preference in developing collaborative activities will be given to countries whose nutritional problems are pressing and whose governments seem willing to take actions to deal with their problems. Activities which require short-term assistance from CEAP will be preferred, with continued long-term commitment in these cases coming from mission-financed resident personnel and/or government planning staff. Details on the types of consultants needed, what they will work on, and when they will be needed will be specified in scopes of work to be agreed to by all parties. CEAP funds could be available to fund resident personnel in a country if:

(1) nutrition problems are pressing and there is serious government commitment to development of action programs;

(2) data collection efforts which demand full-time involvement of specialized personnel are a component of the activities;

(3) systems for agricultural data analysis and planning are nascent and would benefit by sustained activities;

(4) local staff needs extensive support and/or training on the job;

(5) other donor staff involved in related projects which are essential to the completion of the CEAP objectives are very thin and sustained on-site presence of a CEAP-related person would contribute to establishing the critical professional mass needed to keep both projects running smoothly; or

(6) opportunities abound for carrying out useful methodological and planning work but sorting out the priorities or most practicable activities on a short-term basis is impossible.

The problem in designing collaborative sub-projects will be to identify activities which will contribute to Mission and government objectives at the country level and yet provide the Agency as a whole with knowledge about the utility of various analytical methods and data collection systems and the practical problems involved in integrating them into a variety of ongoing planning and policy formulation systems.

The first step in designing a collaborative sub-project will be to identify:

(1) where agricultural data collection, analysis, and planning activities already exist which will lend themselves to the addition of nutrition concerns;

(2) which methods and techniques are appropriate for testing in each country;

(3) how, in organizational terms, staff can or should be added to focus on the relationship between agricultural programs and policies and nutrition outcomes; and

(4) which outputs are feasible to achieve in the sub-project.

Virtually every developing country has one or more organizations involved in data collection, analysis, and planning in the agricultural sector. But the capacities of the organizations to include an additional focus on nutrition/

consumption outcomes vary widely. Some agricultural planning units are still struggling to adapt and institutionalize methods for estimating major crop production and have no resources or interests in measuring consumption of those crops or relating consumption patterns to nutritional needs. Other units have reasonable good data collection systems and are working to develop and institutionalize fairly sophisticated planning models which will provide good information relevant for a wide range of policy decisions. Some are woefully understaffed with a few competent but overworked personnel. Others lack any staff with even the most elementary training in quantitative analytical methods and techniques and rely primarily on the sporadic contributions of outside experts. Still others have attracted a sufficient number of capable local analysts and a certain amount of donor support and are building organizational competence and skills rapidly.

Which methods can be tested will depend to some extent on which countries are selected. A range of methods, from the simplified to the more sophisticated, will be developed during the methodological and data development sub-projects. To test this range of methods, collaborative sub-projects will have to be initiated with several countries. Many LDC agricultural planning units are actively developing the data and mathematical systems for the analysis of their agricultural sectors. Adapting and extending these sector analysis methodologies to include consumption/nutrition concerns seems a natural course of action which

holds great potential. The income and price elasticity matrices and farm household models need to be tested in these type countries. The more simplified analytical techniques which will be developed as part of the "Short-Term Policy Impact Studies", on the other hand, should be tested in countries where data systems are incomplete and mathematical models will not be possible for another five to ten years.

Once countries are identified and methods for testing selected, the next question is staffing. What additional staff is needed? What types of training should they have? Should they be local or expatriate? What activities should they perform? As a general rule, additional staff should focus on consumption and nutrition issues. It will be impossible for them to retain this focus, however, unless other staff members provide them with data and analysis on related issues.

Ideally, collaborative sub-projects should be designed to produce three outputs wherever they are undertaken:

(1) increased understanding of the linkages between agricultural policies and programs and nutrition/consumption;

(2) institutionalization of the analytical approaches in established planning units; and

(3) improvement of the planning process for agricultural sector planners and decision-makers.

It is recognized, however, that many LDC agricultural planning units will not have the staff, data, or resources available to accomplish the first two outputs, nor will their

analyses find the political acceptance necessary to make significant and visible inputs into the planning process. However, it still may be possible and desirable to initiate and carry out collaborative sub-projects in these countries, even though it is not reasonalbe to expect that institutionalization and integration into the ongoing planning process will be completely accomplished within the life of the project. In other words, collaborative sub-projects may be justified if they have the potential for generating the interest needed to build staff capacity and government interest in this critical area, and, to begin with, even if they merely contribute to a more thorough understanding of the problems involved in trying to integrate consumption/nutrition concerns into ongoing agricultural planning systems.

Several potential collaborative activities have already been identified. Mini-project papers have been written for the Dominican Republic and Bolivia, for example[1/] (see Annexes F and G). The papers discuss each country's nutrition problems, government commitment to improving nutrition, data available, and compatibility of CEAP objectives to mission objectives. They also discuss the rationale for CEAP involvement in that country and describe the purposes of the sub-project, the activities to be undertaken with CEAP financing, the outputs expected, and the inputs required. The Dominican Republic paper provides for a resident advisor, the Bolivian paper for a series of TDY

1/ See Annex B for a brief discussion of other potential countries and activities.

consultants. Both are in the discussion stage with a favorable initial response from the respective missions.

An ideal situation would be when activities funded under the methodological and data development sub-projects can be undertaken in countries where a collaborative arrangement is agreed upon or under discussion. In such cases, these activities can become a part of the collaborative agreement with the additional short-term consultants needed provided from the RSSA. The potential for such an arrangement exists in both the Dominican Republic and Bolivia.

Integrating/Information Disseminating Activities

Making sure that the results from this broad range of activities are integrated and disseminated to AID and LDC planners and analysts as well as the general development community is a major task in itself. The Office of Nutrition, through its USDA RSSA staff, will assume the major responsibility for integrating both the technical outputs and the practical experiences and insuring that this information is properly disseminated. Responsibility for integrating sub-project results needs to remain close to the Office of Nutrition to insure that all critical methodological questions are addressed and, more important, to insure that the methodologies developed are relevant, useful, and used.

Contractors will be responsible for some of the data dissemination tasks. All four methodological and data development sub-projects, for example, include funds for publications and conferences, seminars, and workshops. The Office

of Nutrition's USDA RSSA staff will also develop and maintain an information network among planners and policy analysts interested in the determination and prediction of consumption/nutrition impacts of development policies. This will provide another mechanism for developing interest in project objectives and for disseminating project results beyond the narrower group of project participants. The network will include key people in AID missions and approximately 200 selected policy, planning, and professional analysts in the fields of economics, nutrition, agronomy, social science, and statistics. Most participants will be located in developing countries.

Information will be communicated through a 8-12 page newsletter highlighting current activities, research in progress, and findings within the field of consumption/nutrition research. Initially, a packet of landmark studies and articles also will be compiled and distributed, mainly to those abroad. Sub-project reports and papers and other items of interest will be sent out as available.

PART 3. PROJECT ANALYSIS

A. TECHNICAL ASSESSMENT, INCLUDING ENVIRONMENTAL ASSESSMENT

This project has five subpurposes; the first two involve the development and testing of methodologies to determine the consumption/nutrition impacts of alternative development policies. The technical sophistication of the methodologies developed and tested will be subject to their compatibility with the last two project sub-purposes--to develop the capabilities of developing countries to undertake similar analyses and to identify alternative ways of internalizing these methodologies within planning institutions.

The agricultural planning systems and the capabilities of the planning staffs vary greatly from developing country to developing country. This means that the types of analytical techniques used also vary from relatively descriptive and qualitative analyses to highly sophisticated mathematical modeling involving large computers, substantial amounts of data, and a technically-oriented policy-making environment. Therefore, a deliberate effort has been made to finance a variety of activities in a variety of countries. This strategy is expected to provide experiences and results at three different levels of technical complexity:

1. developing more descriptive techniques for collecting and analyzing economic and nutritional data which can be used in problem situations where quantitative data at national or even sectoral levels are not readily available;

2. assessing nutrition outcomes in less comprehensive, but still complex, situations, e.g., household farm-firm modeling, compilation and analysis of price and income elasticity matrices in less than national contexts, etc.; and

3. incorporating nutrition concerns into fairly sophisticated sector modeling activities.

Income and price elasticities are seen as core methodological tools. Strong theoretical foundations exist for the computation and use of income elasticity matrices in cash economies. Techniques for developing separate income elasticity estimates of demand for households at various income levels are readily available. These can be used to determine what happens to the food consumption patterns and implied nutrient intake levels of households nutritionally at risk when their incomes change. The data needed to make these calculations is not readily available, however.

Further work is also needed before income elasticity matrices can be used to estimate the demand for food by rural households which derive a portion of their income in kind and have a choice regarding buying or growing any particular food item. Different income elasticities may have to be calculated for the same commodity depending on whether it was purchased or produced in the household. This would require modifying the standard income elasticity matrix. The development of models which treat farm households as units which make simultaneous decisions about production and consumption choices is also

a promising area for (1) improving our understanding of farm family behavior given changes in agricultural policies and (2) predicting their behavior. This work will build upon the work begun by Becker, Lin, Lau, and Yotopoulos, among others. This work will also benefit from additional household modeling being financed under the AID-supported Poor Rural Households project which involves Cornell, MSU, and Purdue.

Techniques for computing price elasticity matrices, on the other hand, are subject to some controversy. One important question is whether the Frisch assumptions about money flexibility can be used to compensate for the lack of sufficiently specific price information. Another question is whether price elasticity matrices can be constructed from national cross-sectional data. Both questions will be dealt with in the subproject designed to review and improve household consumption data bases and analytical systems.

To use these matrices and household models for analyzing policies and programs, they must be integrated into a country's existing analysis and planning system. Both techniques can be used in a wide variety of planning systems. All that is needed to utilize these techniques is forecasts of economic events -- crop projections, price forecasts, income projections, policy analyses. These can come from informed and experienced judgements, some seat-of-the-pants guesstimates, simple two-equation supply and demand projections, and/or complex, multi-stage

models. But whatever their source, planners and policy-makers will be able to use the elasticity matrices and the household models to translate the price and income effects of various policy and program options (which have already been forecasted) into their impacts on the food consumption patterns and implied nutrient intakes of various groups likely to be at risk from malnutrition.

A great deal of experience in modeling a developing country's agricultural sector has been gained over the last ten years. Numerous countries now have some type of sector model at some stage of development, including Nigeria, Korea, Colombia, Thailand, Philippines, Bolivia, Guatemala, Honduras, El Salvador, Nicaragua, the Dominican Republic, Tunisia, Pakistan. Techniques experimented with include linear programming, econometric, and systems simulation. As a result, there now exists a broad base of knowledge about the structure and operation of a developing country's agricultural sector and how to describe and predict its behavior. The steps taken to link the analytical techniques developed in this project with countries existing planning systems will build upon this wealth of knowledge and experience. In all cases, economists and other social scientists will be expected to be conversant with a fair amount of technical nutritional concepts and to use nutritionists' inputs to help achieve sub-project objectives.

The project will have no direct environmental impact.

B. FINANCIAL ANALYSIS AND PLAN

Financial Rate of Return/Viability

This project addresses an area that is critical to the cost-effectiveness of applied nutrition and public health-related policies and programs. It recognizes that policies which are non-nutritional in intent often have more significant impacts upon human nutrition than do policies which specifically focus on improving nutrition benefits. In order to provide planners and decision-makers with methods for examing and assessing probable or possible nutritional outcomes of agricultural, trade, price, or other economic policies, this project directs attention to the determinants of nutrient intakes and to the feasibility of incorporating nutritional concerns into the broader economic planning process.

While it is increasingly recognized that poor nutrition has a real cost in both personal and societal terms, the current state of knowledge regarding measurement of the financial value of improved nutrition does not provide a ready calculus for estimating such costs. It is impossible to attach any dollar amounts to successful completion of this project even if it were possible to specify the numbers of presently malnourished persons who would be benefited by improved planning and policy-making.

It is possible, however, to argue that successful completion of the project will improve the effectiveness of nutritional intervention programs by reducing counterproductive programming in other sectors as well as by improving the targeting of the intervention programs. The agricultural sector has the potential to make a significant contribution to improved nutrition as well as to increased food production. The likelihood that its full potential for contributing to improved nutrition will be realized, should be greater if nutrition impacts are included among the criteria used by planners and decision-makers to evaluate alternative policies and programs.

Financial Plan

The total cost of the project is estimated at $2.7 million. The project is expected to run for five years, with funds being obligated during FY 79 - 83. The USDA RSSA, because it includes funding for other DS/N work in addition to the "Consumption Effects of Agricultural Policies" project involvement, is financed separately. Approximately two-thirds of total project funds will be devoted to country-focussed, independent methodology and data development activities, and one-third to collaborative activities.

TABLE 1. SUMMARY OF CEAP BUDGET BY PROJECT COMPONENTS AND SUB-PROJECTS

Independent Methodology and Data Development Activities	$1,782,000
Sub-Project 1 - Development of Techniques and Data Basic to the Analysis of Household Consumption	850,000
Sub-Project 2 - Techniques for Analyzing and Predicting Farm Household Behavior (Conference on Household Models)	52,500
Sub-Project 3 - Development of Consumption/Production/ Nutrition Data on Farm Households	350,500
Sub-Project 4 - Short-Term Policy Impact Studies	529,000
Collaborative Methodology Testing Activities (3 projects the size of the potential Dominican Republic sub-project could be funded, for example)	918,000
	$2,700,000

TABLE 2. HYPOTHETICAL OBLIGATION SCHEDULE

($000)

SUB-PROJECT	FY 79	FY 80	FY 81	FY 82	FY 83	TOTAL
Short-Term Policy Impact Studies	465	64	-	-	-	529
Techniques for Analyzing/Predicting Farm Household Behavior (Conference)	53	-	-	-	-	53
Development of Techniques and Data Basic to the Analysis of Household Consumption	-	449	401	-	-	850
Development of Consumption/Production/ Nutrition Data on Farm Households	-	-	200	150.5	-	350.5
Collaborative Activities*	-	-	300	319.5	300	917.5
TOTAL	518	513	901	468	300	2,700

*Financing for several discrete applied research/technical assistance sub-projects.

Tentative budgets have been prepared for the four methodological and data development activities to be contracted out (see Tables 3-6). Final budget estimates, of course, will be developed by the proposing contractors. Tentative budgets are also given for the two examples of possible collaborative activities. Being collaborative activities, some financial and staff support for data gathering, processing and analyses activities will come from the Mission and/or country. Final budgets for collaborative activities, like implementation plans, will have to be worked out with the Missions and countries involved.

Having the sub-projects all discrete activities provides substantial flexibility as to when to obligate funds. The methodological and data development activities should be financed first, but all four do not have to be funded the first fiscal year of the project and the largest of the projects could be funded in two tranches. Nor is there any definite order in which these activities have to be funded, only priorities (see Implementation Plan, p. 91). Long-term collaborative activities should be funded after the methodological development activities, but again each sub-project will be discrete, will not have to be funded in any particular order, and probably will be able to be funded in several tranches.

TABLE 3. ESTIMATED SUB-PROJECT BUDGET

Development of Techniques and Data Basic to the Analysis of Household Consumption

SALARIES:			
Project Director (15 mo. @ $30,000/yr.) (Half Time for 30 mo.)		$ 37,500	
Secretary/Admin. Asst. (30 mo. @ $15,000/yr.)		37,500	
Phase 1 - Survey Consultants (20 mo. @ $30,000/yr.)		49,800	
Phase 2 - Survey/Programmer Consultants (24 mo. @ $30,000/yr.)		60,000	
Phase 3 - Demand Analyst (24 mo. @ $30,000/yr.)		60,000	
Programmer (12 mo. @ $16,000/yr.)		16,000	
Consultants (4 mo. @ $36,000/yr.)		9,000	
Phase 4 - Consultants (6 mo. @ $30,000/yr.)		15,000	
Fringe Benefits (@ 15%)		42,700	
Overhead (@ 70%)		229,300	
		$556,800	$556,800
TRAVEL:			
Round Trips (30 @ $1,500)		$ 45,000	
Per Diem (1,470 days @ $50/day)		73,500	
		$118,500	118,500
OTHER COSTS:			
Supplies and Equipment		$ 8,000	
Publications		7,000	
Computer Services		25,000	
Telephone (30 mo. @ 250/mo.)		7,500	
		47,500	47,500
CONFERENCE: (5 days)			
Int'l. Travel (10 round trips @ $1,500)	$15,000		
Local Travel (10 round trips @ $200)	2,000		
Per Diem (120 days @ $50/day) (10 X 7 days + 10 X 5 days)	6,000		
Refreshments (@ $100/day)	500		
Facilities (@ $300/day)	1,500		
2 Conferences (@ $25,000)	$25,000	$ 50,000	50,000
CONTINGENCY: (@ 10%)		$ 77,200	77,200
			$850,000

TABLE 3 (Continued)

Detailed Breakdown of Salary and Travel Costs by Phases

PHASE 1 REVIEWS: (16 countries - 4 countries/trip)	
Salaries	
Survey Consultants (20 mo. @,$30,000) ..... (2 weeks/country X 4 countries + 2 weeks = 10 weeks/trip X 4 trips = 40 weeks X 2 persons = 80 weeks or 20 months)	$ 49.800
Travel -	
Round Trips (8 @ $1,500)	12,000
Per Diem (500 days @ $50/day)	25,000
	80,400
PHASE 2 CASE STUDIES: (4 countries)	
Salaries:	
Survey/Programming Consultants (24 mo. @ $30,000)..... (6 months/country, 2 months/trip)	60,000
Travel -	
Round Trips (12 @ $1,500)	18,000
Per Diem (600 days @ $50/day)	30,000
	100,000
PHASE 3 CROSS-SECTIONAL TECHNIQUES: (2 countries)	
Salaries	
Demand Analyst (24 mo. @ $30,000/yr.)	60,000
Programmer (12 mo. @ $16,000/yr.)	16,000
Consultants (4 mo. @ $36,000/yr.)	9,000
Travel	
Round Trips (2 @ $1,500)	3,000
Per Diem (30 days @ $50/day)	1,500
	89,500
PHASE 4 CONSULTANCIES (6)	
Salaries	
Consultants (6 mo. @ $30,000).....	15,000
Travel	
Round Trips (6 @ $1,500)	9,000
Per Diem (300 days @ $50/day)	15,000
	39,000

TABLE 4. ESTIMATED SUB-PROJECT BUDGET

Conference on Household Models

SALARIES:

Organizer/Director/Rapporteur (3 mos. at $30,000).....	7,500	
Secretary/Admin. Asst. (2 mos. at $15,000).....	2,500	
Fringes (at 15%)	1,500	
Overhead (at 70%)	8,000	
	19,500	19,500

DIRECT CONFERENCE COSTS: - 5 days

International Travel (10 round trips at $1,500).....	15,000	
Local Travel (10 round trips at $200)	2,000	
Per Diem (120 days at $50/day) (10 X 7 days + 10 X 5 days)	6,000	
Refreshments (at $100/day)	500	
Facilities (at $300/day)	1,500	
	25,000	25,000

OTHER COSTS:

Supplies, Equipment, Copying	2,000	
Publications	6,000	
	8,000	8,000
		52,500

TABLE 5. ESTIMATED SUB-PROJECT BUDGET

Development of Consumption/Production/Nutrition Data on Farm Households

SALARIES:		
Project Director - (24 mos. at $30,000)	60,000	
Secretary/dmin. Asst. (12 mos. at $15,000)		
Consultants Agriculture/Consumption/Nutrition Surveys (18 mos. at $30,000)	45,000	
Fringe Benefits (at 15%)	18,000	
Overhead (at 70%)	96,600	
	234,600	234,600
TRAVEL:		
Round Trips (15 at $1,500)	22,500	
Per Diem (450 days at $50/day)	22,500	
	45,000	45,000
CONFERENCE - 5 days		
International Travel (10 round trips at $1,500)	15,000	
Local Travel (10 round trips at $200)	2,000	
Per Diem (120 days at $50/day) (10 X 7 days + 10 X 5 days).....	6,000	
Refreshments (at $100/day)	500	
Facilities (at $300/day)	1,500	
	25,000	25,000
OTHER COSTS		
Supplies, equipment, copying, phone	8,000	
Publications	6,000	
	14,000	14,000
CONTINGENCY (at 10%)	31,900	11,900
		350,500

TABLE 6. ESTIMATED SUB-PROJECT BUDGET

Policy Impact Studies

SALARIES:

Project Director (9 mos. @ $30,000/yr.) (one-half time for 18 mos.)	$ 22,500	
Secretary/Admin. Asst. (18 mos. @ $15,000/yr.)	22,500	
Research Associates (48 mos. @ $30,000/yr.)	120,000	
Research Assistants (24 mos. @ $11,000/yr.)	22,000	
Fringe Benefits (at 15%)	28,000	
Overhead (at 70%)	150,500	
	$365,500	$365,500

TRAVEL:

Round Trips (6 @ $1,500)	$ 9,000	
Per Diem (720 days @ $50/day)	36,000	
	$ 45,000	45,000

OTHER COSTS:

Supplies, equipment, telephone	$ 8,000	
Publications	10,000	
Computer Services	5,000	
	$ 23,000	23,000

IN-COUNTRY SEMINARS: (2 international and 20 local participants)

Per Diem, Local (40 days @ $35/day)	$1,400		
Per Diem, Int'l (7 days @ $50/day)	350		
Travel (1 Round Trip @ $1,500)	1,500		
Facilities (at $200/day)	200		
Refreshments (@ $100/day)	200		
Supplies and Equipment	50		
	$3,700		
6 Seminars (@ $3,700)		$ 22,200	22,200

FINAL CONFERENCE:

International Travel (10 Round Trips @ $1,500)	$ 15,000	
Local Travel (10 Round Trips @ $200)	2,000	
Per Diem (120 days @ $50/day) (10 X 7 Days + 10 X 5 Days)	6,000	
Refreshments (@ $100/day)	500	
Facilities (@ $300/day)	1,500	
	$ 25,000	25,000
CONTINGENCY (at 10%)	$ 48,000	48,000
		$529,000

PART 4. IMPLEMENTATION PLAN

A. ADMINISTRATIVE ARRANGEMENTS

DS/N will be responsible for overall project management. In recognition of the mutual interests of DS/AGR in the assessment of the consumption/nutrition impacts of agricultural policies and DS/AGR involvement in improving agricultural planning in developing countries, it is planned that DS/AGR/ESP will provide continuous professional advice to the DS/N project manager through participation on a management team.

The specific administrative arrangements vary by type of activity.

Independent Methodology and Data Development Activities

Development of Techniques and Data Basic to the Analysis of Household Consumption: This applied research/technical assistance sub-activity will be contracted to a single institution or agency. This institution or agency will be selected through the competitive bidding process. DS/N will be responsible for the management of this contract. The USDA RSSA will assist with drafting the scope of work for the RFP, arranging for its review, orchestrating and participating in the technical review of the proposals and the selection of a contractor, day-to-day technical supervision of the contractor and arranging for (and participating in) all evaluations of contract performance.

Techniques for Analyzing/Predicting Farm Household Behavior: To insure that proper preparations are made, the workshop is well organized, and the maximum is learned from the interchange, the individual and/or institution responsible for organizing and running the workshop will also be responsible for preparing the final outputs. This activity will be contracted through the USDA RSSA or through DS/N's indefinite quantity contracting arrangement. Using one of these mechanisms is preferred in this case because of the need to get the activity underway as soon as possible after project approval. If the workshop is to be held in the spring of 1979, preparations should begin no later than January 1979, since several months lead time is needed to insure that the desired participants will be available, have time to prepare papers, etc.

This workshop could also be put on under the auspices of DS/AGR's Research and Training Network (RTN) project with the Agricultural Development Council (ADC). Under this administrative arrangement, ADC would invite all participants and the RTN contract would pay the travel and per diem costs of all non-government personnel. Separate arrangements would have to be made for an individual or individuals to organize the workshop (plan the agenda, help identify the participants, write any discussion or issues papers, help orchestrate the sessions) and unite the state-of-the-art paper and the research agenda. This task could also be contracted through the USDA RSSA or through a DS/N IQC.

Development of Consumption/Production/Nutrition Data on Farm Households - This applied research/technical assistance sub-activity will be contracted to a single institution or agency. This institution or agency will be selected through the competitive bidding process. DS/N will be responsible for the management of this contract. The RSSA will assist with drafting the scope of work for the RFP, arranging for its review, orchestrating and participating in the technical review of the proposals and the selection of a contractor, day-to-day technical supervision of the contractor and arranging for (and participating in) all evaluations of contract performance.

Short-term Policy Impact Studies: This applied research sub-activity will be contracted to one, at the most two, institutions or agencies. Limiting the number of contractors will facilitate management of the sub-project as well as ensure comparability of the resulting studies. The contractor(s) will be selected through the competitive bidding process.

DS/N will be responsible for the management of this contract. The USDA RSSA in Nutrition Economics will assist with drafting the scope of work for the RFP, arranging for its review, orchestrating and participating in the technical review of the proposals and the selection of a contractor, day-to-day technical supervision of the contractor and arranging for (and participating in) all evaluations of contract performance.

DS/N will review all research designs and will maintain close liaison with the studies as they are carried out. Approval by DS/N will be required before analyses are initiated. DS/N will also assist in identifying and making the necessary arrangements with Missions and governments for undertaking each study.

Collaborative Methodology Testing

Discrete, Multi-Year Applied Research/Technical Assistance Activities (with resident personnel): The administrative arrangements for these activities must remain flexible, given the CEAP objective of getting country and mission involvement in the development and utilization of methodologies to the maximum extent possible. DS/N could decide to go out for bids for one activity, handle another as a PASA, or decide to utilize an unsolicited proposal if one should be developed. Which course is chosen will depend, to some extent, on the desires of the country and mission, what they might want to get out of the activity above and beyond DS/N's objectives, what their past experiences have been with different contractors and different contract arrangements, or how they feel a consumption/nutrition component could be best integrated into the agricultural planning activities already underway in their country. DS/N would be responsible for managing whatever PASA's/contracts were eventually developed. The RSSA would

help develop the activities and help with the day-to-day technical supervision.

Short-term Technical Assistance Activities. Most of these requests will be handled through the RSSA, using permanent RSSA staff, other USDA staff and/or USDA contractors. These activities are expected to be of limited scope and duration (no more than one month) and relatively inexpensive.

The ability to respond quickly and effectively to TDY requests is extremely important since many Mission requests will be urgent and require an immediate response. The RSSA has the needed response capability. So do the firms with which DS/N has indefinite quantity contracts and plans are to make use of them when one of their consultants is available and well qualified to undertake the required task.

Integrating/Information Disseminating Activities

Integration of Sub-activities: The RSSA staff will have primary responsibility for integrating the various activities into a coherent whole and for ensuring that what is learned is communicated to DS/N and through DS/N to other DS offices and AID's Regional Bureaus and Missions. Results will be communicated through direct staff work as well as the information network, workshops and seminars and training activities.

Information Network: The RSSA staff will develop and maintain an information network among researchers and policy analysts interested in the determination and prediction of consumption/nutrition impacts of development policies. Researchers and analysts not funded through this project but involved in similar work in other developing countries will be included in this network, as well as those directly funded. The network will be developed and maintained through periodic visits of RSSA staff, identification and distribution of pertinent reports and other documents, and dissemination of a newsletter and project-funded papers.

Coordination Within AID

To coordinate the activities in this project with other offices interested in improving agricultural planning and the consumption/nutrition effects of agricultural policies, DS/N has invited the regional bureaus, DS/AGR, DS/RD and PPC to participate in an agency Inter-Bureau Advisory Committee (IBAC). The committee is expected to review project documents (PPs, RFPs, scopes of work), help identify countries in which to undertake sub-project activities, help make the necessary links with the missions and countries so identified, and in general provide those responsible for designing and monitoring the project with the information needed to ensure that the outputs are both useful and utilized. Committee members

FIGURE 3.

IMPLEMENTATION SCHEDULE

DEVELOPMENT OF TECHNIQUES AND DATA BASIC TO THE ANALYSIS OF HOUSEHOLD CONSUMPTION

▲ START
▼ COMPLETION
△ EVALUATION
□ CONFERENCE

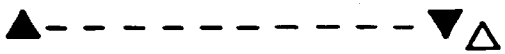
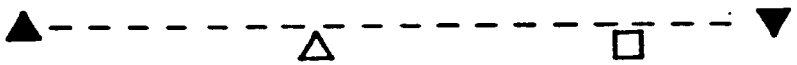
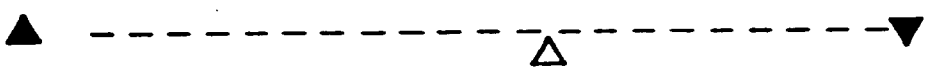
ACTIVITY	LIFE OF PROJECT - MONTHS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	REPORTS
1. Review and Evaluation of Household Surveys (12-16 countries - 4 trips X 10 weeks)		Report to be completed on each country visited.
2. Development and Testing of Alternative Data Collection and Processing Methods (4 countries - 24 mos. consultant time)		Report to be completed on each consultant visit. One summary report will also be prepared for each country.
3. Development of Analytical Techniques (24 mos. Demand Analyst - 12 mos. Programmer)		Quarterly reports will be submitted.
4. Consultancies (6 mos.)		A summary report will be prepared for the final evaluation.

FIGURE 4.

IMPLEMENTATION SCHEDULE

CONFERENCE ON HOUSEHOLD MODELS

▲ START

▼ COMPLETION

△ EVALUATION

ACTIVITY	LIFE OF PROJECT - MONTHS 1 2 3 4 5 6	REPORTS
1. Conference Organization:		
Administrative	▲ - - - - - - - - ▼	
Content	▲ - - - - - ▼	
2. Conference - 5 days	▲▼△	
3. Preparation of State-of-the-Art Paper and Research Agenda	▲ - - - - - - - - - - - - ▼	State-of-the-Art paper; research agenda.
	△	

FIGURE 5.

IMPLEMENTATION SCHEDULE

DEVELOPMENT OF CONSUMPTION/PRODUCTION/NUTRITION DATA ON FARM HOUSEHOLDS

▲ START
▼ COMPLETION
△ EVALUATION

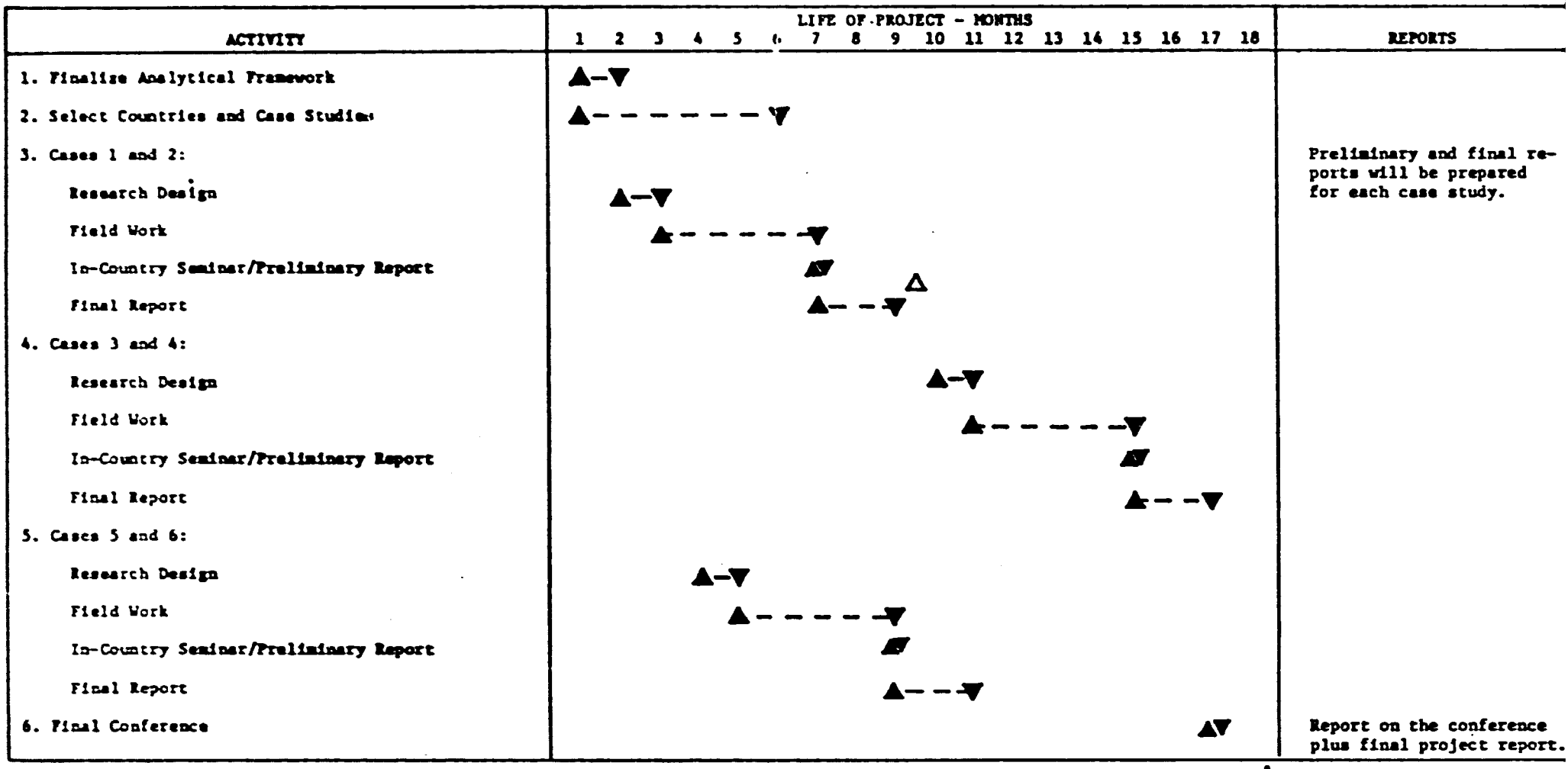
ACTIVITY	LIFE OF PROJECT - MONTHS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	REPORTS
1. Review of Agricultural/Consumption/Nutrition Status Surveys	▲ – – – – ▼	State-of-the-Art paper.
2. Review and Evaluation of Efforts to Add Consumption Nutrition Concerns to Agricultural Surveys	▲ – – – – – – – – – – – – – – – ▼ (△ at 14)	Report on each survey or planned survey reviewed.
3. Development of Guidelines for Adding Consumption/Nutrition Concerns to Agricultural Surveys	▲ – – – – – – – ▼	Guidelines.
4. Consultancies	▲ – – – – – – – – – – – – – – – – – – ▼	Report on each consultancy.
5. Conference	▲▼ (△ at footer)	

FIGURE 6.

IMPLEMENTATION SCHEDULE

POLICY IMPACT STUDIES

▲ START
▼ COMPLETION
△ EVALUATION



are also expected to call related efforts by AID missions or other donors to the attention of DS/N and RSSA staff so that appropriate steps to coordinate these efforts (at a minimum to incorporate those participating in these activities into the information network) can be taken.

IBAC members will act as the point of contact in each Bureau for information related to this project. Committee members will have a dual responsibility: (1) to take a country perspective in identifying the needs of missions within their regions and working to ensure that the project meets some of these needs; and (2) to take an agency wide perspective in order to maximize the effectiveness of this project in the entire agency.

B. IMPLEMENTATION PLAN

The activities outlined in this document are initially planned to cover a five-year period, FY 1979 - 83. A detailed implementation schedule has been developed for each methodological and data development sub-project. (See Figures 3-6) Detailed implementation plans for all collaborative activities will be developed in conjunction with missions and country governments. For long-term activities, administrative arrangements and implementation plans will be spelled out in project agreements.

Some CEAP related activities were underway by the end of fiscal 1978; these were short-term activities funded through the USDA/RSSA.

Plans are to go out with requests for proposals for several of the methodological and data development activities as soon as the project paper is approved. The projects will be financed in order of their priority, the first being the "Policy Impact Studies," the second, "Development of Techniques and Data Basic to the Analysis of Household Consumption" and the third, "Development of Consumption/Production/Nutrition Data on Farm Households." The "Policy Impact Studies" sub-project is given highest priority because this sub-project more than any of the others will help demonstrate the importance of analyzing the impacts of policies and projects on consumption and nutrition and the complexity of the relationships. Its broad scope and its potential for producing simplified analytical techniques also contributes to its priority position. The "Development of Techniques and Data Basic to the Analysis of Household Consumption" project is second in priority because it focuses on the development/adaptation of basic techniques using already available data.

The "Development of Consumption/Production/Nutrition Data on Farm Households" project is third in priority. Since data systems should really be designed with policy needs and analytical models in mind, it would be useful to have the state-of-the-art

paper on farm household models available as a point of departure for the data systems state-of-the-art paper which is the first output from this sub-project. The analytical framework for evaluating the consumption/nutrition impacts of agricultural policies and projects (the first output of the "Policy Impacts Studies" project) would also be useful as a frame of reference. Having several of the data collection efforts which have been recommended for review well underway at the time the reviews begin (which should be the case in FY 80, for example) should increase what can be learned from each review.

The Conference on Household Models will also be financed in FY 79. The amount required to fund it is relatively small, and the knowledge it will provide will be useful as guidance to subsequent CEAP activities.

Integrating information disseminating activities will continue throughout the life of the project. The information network will be established by the sixth month and maintained through December, 1983.

C. EVALUATION PLAN

The implementation plan developed for each of the methodological and data development activities indicates the number of evaluations that are scheduled for each sub-project and their timing. The scope of each evaluation will be keyed to

the particular objectives and tasks specified for that contractor over the relevant time period. A similar evaluation schedule will be drawn up for each collaborative activity.

Participants in reviews will be selected from among each contractor's staff, the DS/N and/or USDA RSSA staff, members of the Inter-Bureau Advisory Committee, and, when suitable, other members of the information network. Host country participants will be included in evaluations when appropriate. All evaluations will be reviewed by the IBAC as a whole.

An administrative review of the entire project will be carried out at the end of each project year to review management problems, determine whether activities are on schedule, and plan for and/or review activity evaluations. The DS/N management team, USDA RSSA staff, and members of the Advisory Committee will participate in these reviews. Progress made by DS/N and the USDA RSSA in developing the information network and integrating the activities and their outputs will also be reviewed at these times.

D. CONDITIONS, COVENANTS, AND NEGOTIATING STATUS

ANNEX A.

LOGICAL FRAMEWORK

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 79 to FY 83
Total U.S. Funding $2.7 million
Date Prepared:

Project Title & Number: CONSUMPTION EFFECTS OF AGRICULTURAL POLICIES

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes:	Measures of Goal Achievement:		Assumptions for achieving goal targets: (A-6)
1. Improve consumption/nutrition benefits of development policies. 2. Sub-goal: Improve the planning and policy formation processes in developing countries.	1. Greater awareness of benefits/losses in nutritional status likely to result from development policies. 2. Policy/program/project evaluation or selection on the basis of nutrition/consumption effects.	1. Nutritional status surveys of target populations in situations where nutrition goals are approved/show improvements. 2. Programs in AID and LDCs designed to counteract recognized negative nutritional effects implemented.	1. The current nutrition/consumption situation is known so that what constitutes improvement can be evaluated. 2. Once impacts have been determined, there will be institutional will to improve them.
Project Purpose: 1. To develop methodologies for determining the impact of agricultural policies and programs on people's food consumption patterns and nutritional status. 2. To demonstrate their utility by having them used in several LDC planning institutions.	Conditions that will indicate purpose has been achieved: End-of-Project status. 1. Methodologies developed. 2. AID/LDC personnel utilizing methods in planning on ongoing basis.	1. DS/N acceptance of published documents/papers. 2. Conferences completed and follow-up evaluation done. 3. Evidence in AID/LDC planning documents of nutrition impacts as (a) goals; (b) evidence of project success, & (c) integral	Assumptions for achieving purpose: 1. Expertise to develop methodologies is available. 2. LDC/AID interest and support are sufficient. 3. Financially and economically feasible to develop methodologies within given budget.
Project Outputs: 1. Methodologies (simple as well as more complex) for measuring the consumption/nutrition effects of agricultural and other development policies. 2. Reviews of country data systems & recommendations on how to improve the data so that the analytical methodologies developed can be used.	Magnitude of Outputs: 1. State-of-the-art papers & analytical frameworks. 2. Descriptions & evaluations of household consumption surveys in 12-14 countries. 3. Guidelines for improving the design & implementation of household consumption surveys & guidelines for adding consumption/nutrition concerns to	1. Receipt by AID of acceptable documents, including computer documentation. 2. Reports from missions reflect project contact when scrutinized. 3. Conferences/workshops carried out.	Assumptions for achieving outputs: 1. Contractors will have access to data and data sources. 2. The world is not hig by paper, gas, or airline shortages. 3. Nutrition concerns and specific planning techniques developed can be added to/integrated with ongoing AID activities.
Project Inputs: 1. Expenditure of $2.7 million over a 4-year period. 2. A network of professional analysts from economics, nutrition, social sciences, mathematics, and statistics.	Implementation Target (Type and Quantity) 1. Two methodology and data development sub-projects underway during FY 79. 2. Collaborative activities (TDYs) underway immediately. 3. At least 1 discrete applied research/technical assistance collaborative subproject underway no later than FY 81.	1. Documentation from AID system. 2. Regular AID reporting procedures. 3. Other vouchers & audits.	Assumptions for providing inputs: 1. Project paper is approved. 2. Scope of work is sufficient for RFP development. 3. Agreements can be reached between AID and bidding contractors. 4. Agreements can be reached with AID missions and LDCs.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project
From FY 79 to FY 83
Total U.S. Funding $2.7 million
Date Prepared:

Project Title & Number: CONSUMPTION EFFECTS OF AGRICULTURAL POLICIES

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes:	Measures of Goal Achievement: 3. Application of methods to determine possible nutrition benefits or losses.	3. Analysis of planning documents show greater awareness.	Assumptions for achieving goal targets:
Project Purpose: 3. To disseminate information about these methodologies, their potential uses, and how to use them to AID and LDC planners and decision-makers.	Conditions that will indicate purpose has been achieved: End-of-Project status. 3. AID/LDC supporting data collection/analyses/research on consumption/nutrition status in relation to other factors/development programs.	part of cost/benefit or cost-effectiveness or social soundness analysis. 4. Requests for further assistance/consultants from AID missions and LDCs.	Assumptions for achieving purpose: 4. That it is possible to relate quantitatively consumption/nutrition benefits to a particular policy or program or project.
Project Outputs: 3. Methodologies tested in the planning systems of 3 or more developing countries. 4. Guidelines for internalizing these methodologies within LDC planning agencies. 5. System for disseminating information on methodologies developed & their uses established.	Magnitude of Outputs: Agricultural surveys. 4. Technical reports describing the analytical techniques developed & guidelines for using these techniques. 5. Reports on country-specific policy analyses made, using the analytical methods developed.	4. Consulting assignments completed.	Assumptions for achieving outputs: 4. LDC research and/or planning institutions exist which, with marginal amounts of technical assistance & funds, can be helped to expand the scope of their activities to include nutrition.
Project Inputs: 3. RSSA economists to assume management responsibility & substantive involvement in overall effort	Implementation Target (Type and Quantity) 4. Budget of $2.7 million obligated on following schedule: FY 79 $ 518,000 FY 80 513,000 FY 81 901,000 FY 82 468,000 FY 83 300,000		Assumptions for providing inputs: 5. Funds are available.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 79 to FY 83
Total U.S. Funding $2.7 million
Date Prepared:

Project Title & Number: CONSUMPTION EFFECTS OF AGRICULTURAL POLICIES

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	MAGNITUDE OF OUTPUTS: 6. LDC planners utilizing methodologies in countries. 7. AID personnel sensitized.		

ANNEX B

UPDATE ON CEAP COUNTRY INVOLVEMENT

UPDATE ON CEAP'S COUNTRY INVOLVEMENT

Prospects and Progress

MISSION	STATUS
LATIN AMERICA	
La Paz, Bolivia	van Haeften/Suttor visit found Mission interested in obtaining CEAP help with the household survey component of their Farm Policy Study. Mission needs short-term consultants to advise on design of questionnaire and help with analysis of data. Scope of work for FY 78-79 TDYs drafted during visit. Mission sent additional information on household consumption surveys May 1978. First TDY undertaken August 1978. Possibility also exists for converting Mission support to longer-term country support activity.
Santo Domingo, Dominican Republic	van Haeften/Suttor visit found Mission and GODR interested in participating in CEAP project. Identified need for long-term resident agricultural economist to work with agricultural planning group in Secretariat of Agriculture. Nutrition Planning Group and Price Stabilization Agency also interested outputs of CEAP work. Draft scope of work sent Mission for review May 1978. Discussions now underway to integrate the CEAP activity with the new Mission financed Agricultural Planning Project scheduled for implementation FY 79.
ROCAP, Guatemala	ROCAP response favorable. Initial cable alerted Washington to proposal being prepared by INCAP/ECID group and suggested van Haeften visit. van Haeften discussed draft proposal with ROCAP/INCAP/ECID during visit. Favorable impression of INCAP/ECID competence and ability to work effectively. Revised proposal being prepared for submission to Washington late summer.
Tegucigalpa, Honduras	Mission needed help incorporating consumption/nutrition into second draft of their agricultural sector assessment. van Haeften and Suttor helped the Mission draft the scope of work and identify a suitable individual to undertake the analyses. ECID/INCAP regional project may identify Honduras as one of their two concentration countries. If not, strong possibility exists for direct CEAP involvement.
Kingston, Jamaica	Mission and GOJ response favorable. May want short-term assistance on agricultural sector assessment and other short-term consultants. Nutrition Economics Group reviewed outline for proposed agricultural sector assessment and suggested ways to integrate nutrition concerns. Mission suggested names of Jamaicans interested in information network.

*"Consumption Effects of Agricultural Policies" Project

MISSION	STATUS
LATIN AMERICA (Cont'd)	
San Salvador El Salvador	ECID/INCAP regional proposal may identify El Salvador as one of their two concentration countries. Suttor visit found need for better household consumption data. Mission sent information on household consumption surveys May 1978. Will suggest follow-up TDY fall 1978.
Santiago, Chile	Mission identified several activities underway relevant to CEAP objectives in the Fundacion Chile, Catholic University, the University of Chile, the National Council for Food and Nutrition, and the Office of Agricultural Planning. Individuals in all five institutions expressed interest in CEAP. Several contacts have been made and discussions of mutual interests begun.
San Jose, Costa Rica	Change of government prevents CCR response now. Mission repeated earlier interest in project activity including short-term consultants.
Managua, Nicaragua	Mission and GON response favorable. Interested in short-term consultants and information network. Because of freeze, no immediate response on our part.
Guatemala, Guatemala	Mission cabled favorable, thoughtful response. Discussions during van Haeften visit found agricultural planners interested but not yet ready to participate in CEAP project directly. Expressed preference to be involved in project indirectly through INCAP/ECID regional project at least for next two years.
Georgetown, Guyana	Guyana not interested in project activity. Mission interested in information network.
Asuncion, Paraguay	Cable indicated no GOP interest; cable acknowledged.
AFRICA	
Yaounde, Cameroons	GOC interest depends on results of Nutrition Survey ending June 1978. Fall visit planned and potential linkages with upcoming agricultural planning project are being explored.
Monrovia, Liberia	An opportunity exists to provide TDY assistance to a new sector analysis group recently created in the planning unit of the Ministry of Agriculture. The Ministry of Planning and Economic Affairs, Bureau of Statistics, has just completed the field work for an 18-month National Household Expenditure Survey (NHES). CEAP involvement could include helping utilize the NHES data and developing methods for handling nutrition/consumption variables in the larger context of the agricultural sector's analytical activities.

MISSION	STATUS
AFRICA (Cont'd)	
REDSO, Ivory Coast	Mission cabled its interest in CEAP. Suggested project include a Sahelian country, despite their lack of data and technical capability. Mission interested in information network. In response to request to identity specific countries, suggested direct contact with Missions. Contacts initiated in AID/W May 1978.
Dakar, Senegal	REDSO suggested potential for CEAP involvement in Senegal. Possibilities for carrying out CEAP activities in conjunction with two food and agriculture planning activities now being discussed--one, an agricultural sector assessment and analysis effort, and the second, work associated with projects to be funded by income generated under a P.L. 480 Title III program.
Kinshasa, Zaire	Mission found CEAP interesting and potentially valuable. Suggested CEAP could complement Agricultural Economics Development project. Felt July visit premature. Suggested delay until COZ personnel in training return.
Addis Ababa, Ethiopia	Mission response favorable. However, "present conditions prevent participation".
Nairobi, Kenya	No GOK response. Mission response delayed due to over-commitment.
ASIA	
Dacca, Bangladesh	Mission praised purpose and structure of CEAP project paper. van Haeften visit precipitated a request from the Ministry of Agriculture for a long-term resident advisor to assist the Planning Division add nutrition concerns to its planning activities. Testing Foster's "Simplified Analytical Framework" seemed unrealistic given this development. However, CEAP will be requested to help the Mission locate a suitable candidate for the resident advisor position and to provide short-term consultants to work on specific activities. For example, CEAP may be requested to help the Nutrition Cell analyze the consumption effects of several agricultural policies, programs, and projects in the northwest part of the country.
Colombo, Sri Lanka	Mission interested in CEAP information network. CEAP assistance on TDY basis, e.g., to help with price analyses, also possible. Simmons helped incorporate consumption/nutrition concerns into recent agricultural sector assessment.
Manila, Philippines	van Haeften/Ehrich visit found both agriculturists and nutritionists in the Mission, government, and academic community interested in knowing more about the consumption/nutrition effects of agricultural policies.

MISSION	STATUS
ASIA (Cont'd)	
Manila, Philippines (Cont'd)	The large number of institutions involved in agriculture and nutrition planning, data collection, and data analysis made it difficult to identify, in the short time available in-country, what needed to be done, who could do it, and how CEAP could help. A proposal for CEAP involvement is being prepared and will be submitted by the end of August to the Mission.
Bangkok, Thailand	The prospects for getting a CEAP sub-project activity underway in Thailand seemed quite favorable initially. The Mission, in fact, recommended Thailand as a possible site in its initial cable. van Haeften/Ehrich visit found the heads of the Department of Agricultural Economics, Ministry of Agriculture, and the National Institute of Nutrition interested in cooperating in an effort to add nutrition concerns to agricultural planning in Thailand. Joint data collection as well as data analysis activities are being contemplated. This activity is an off-shoot of a Mission-financed agricultural planning/sector analysis project with Iowa State University. Mission support of the new activity is delayed pending resolution of several problems which arose during the previous project.
Kathmandu, Nepal	Mission response to CEAP favorable but no interest in participation. Reasons given were GON lack of structural capacity and data.
Seoul, Korea	High praise for project paper. No GOK or Mission need due to results of recent agricultural planning project and phase-out of Mission program. Desire participation in information network.
Islamabad, Pakistan	Mission response quite favorable. CEAP sub-project activity would complement recently terminated nutrition planning project. However, no new project activities possible at this date.
Jakarta, Indonesia	Proposed visit rejected. Reasons were workload and "duplication" of Mission efforts. Ability of CEAP to complement rather than substitute stressed in return cable.
MIDDLE EAST	
Damascus, Syria	Arrangements underway to provide an agricultural economist/nutritionist to spend two to three months integrating nutrition into the year-long Syrian agricultural sector assessment.

MISSION	STATUS	MISSION	STATUS
MIDDLE EAST (Cont'd)			
Sana, Yemen	Possible site for testing Foster's "Simplified Analytical Approach". Mission interested, but Foster TDY postponed until fall when Mission workload less.		
Rabat, Morocco	Mission expressed interest. Immediate need for short-term consultant to assess COM needs. Visit by French-fluent agricultural economist being scheduled.		
Tunis, Tunisia	Mission not interested. Wants to focus on nutrition planning activity.		

ANNEX C

SUB-PROJECT 1

DEVELOPMENT OF TECHNIQUES AND DATA BASIC TO THE ANALYSIS OF HOUSEHOLD CONSUMPTION

ANNEX C

DEVELOPMENT OF TECHNIQUES AND DATA BASIC TO THE ANALYSIS OF HOUSEHOLD CONSUMPTION

Background:

Determining what changes people will make in their food consumption patterns if their incomes and/or the price of food (and/or other commodities) change is at the core of the problem of how to determine the consumption/nutrition effects of agricultural policies. A common way to quantify the relationships between changes in food consumption patterns and changes in incomes and prices is to calculate income and price elasticities. An income elasticity indicates by what percentage expenditures on food (or quantities of food purchased) will change given a certain percentage change in income. A price elasticity indicates by what percentage expenditures on a food (or quantities of the food purchased) will change given a certain percentage change in the price of that food (own price elasticity) or other foods (cross price elasticity).

Most income elasticity of demand figures are estimated for national populations as a whole, or, in some cases, for all urban and all rural consumers. These are useful for predicting overall consumption changes due to changes in average incomes, but are too aggregated for the analyses necessary to answer the questions of importance in this project. What is needed are income elasticity of demand figures for the relevant groups of households, particularly those nutritionally at risk. If Poverty is accepted as an indicator of nutritional risk, and one is concerned with

improving nutrition, the important point is how various classes of the poor respond to changes in their incomes, for example, not how the wealthy respond or what the average response is.

One promising approach is to compute separate income elasticities for each major income group. To convert changes in foods consumed into changes in nutrient intakes, these income elasticities also have to be computed for individual food items or groups of foods with similar nutrient compositions, as well as for total food consumption. The result is a matrix of income elasticities for households by income group for specified food items. This can then be used to evaluate the effects of income changes on the demand of these income groups for various food items.

The major reason why such income elasticity matrices have not been constructed to date is insufficient data--not inadequate theoretical underpinnings. A strong theoretical foundation exists for most empirical demand analyses in market economies. The relationship between increases in income and expenditures on food and other commodities can easily be quantified if the required data--quantities of various types of food purchased by families at different income levels preferably at more than one point in time--are available.

Although time series data would be preferable, income elasticities are commonly constructed using data from cross-sectional surveys. Doing so, however, entails making several questionable assumptions, more questionable if the objective is to construct income elasticities valid for the longer-run. For example, the only way to construct income elasticities from cross-sectional data is to assume that households in lower income groups will, as their incomes increase, adopt expenditure or consumption patterns similar to those of households currently at these higher income levels. This assumption is closer to being valid during the short to medium-run when tastes can be assumed constant and prices are less likely to change. Over the longer-run both tastes and prices are likely to change. If incomes and prices increase at the same rate over time, the assumption can be made that consumers' consumption patterns do not change. This simplifies the analysis but requires making another questionable assumption - that consumers do not have money illusion.

Techniques used to compute price elasticity matrices are subject to more controversy. The necessary price elasticity matrices could be computed if data were available showing prices and commodity consumption over time by various income classes. Such data are seldom available, however, and because of the expense involved, are unlikely to become more readily available. Computing price elasticity matrices from cross sectional survey data is generally not considered to be feasible because surveys

conducted during relatively short periods of time are thought to provide insufficient price variations.

Because prices are as important as income in determining demand, several methods for computing price elasticities have been developed which require few price observations. Each of these methods has its own serious shortcomings, however. World Bank analysts commonly use the Frisch method, for example, to calculate the price elasticity matrices for their planning models. Basic to the Frisch method are (1) the concept of money flexibility -- the marginal utility of money compared to money income and (2) the assumption that demand (or want) for one commodity is independent of demand for another. The validity of using money flexibility estimates to construct price elasticity matrices has been seriously questioned. Frisch originally conjectured that money flexibility should decrease in absolute value as the level of real income increases. One empirical study, however, found money flexibility was constant over all five income groups examined. The assumption of want independence is an equally serious limitation.

The validity of the Frisch approach needs to be examined in detail. Using cross-sectional data to construct the needed price elasticity matrices may be a more theoretically and empirically sound procedure. If national cross-section household consumption/expenditure surveys contain sufficient price variations or can be readily modified to collect sufficient

price information, this would be the most practical approach as well. Both approaches will be explored in this sub-project.

Per Pinstrup-Andersen and his colleagues were among the first to undertake empirical work in this area, using data from a sample of 230 urban households in Cali, Colombia.[1/] They attempted to relate changes in food supply -- a shift in the aggregate supply curve -- to changes in the calorie and protein intakes of these households. This may be the simplest of all policy effects to trace out, because there is a single chain of causation from food supply policy through price (an increase in food supplies reduces food prices) to consumption patterns (with lower food prices, poor urban consumers are able to purchase larger quantities of food and/or more nutritious food).

Pinstrup-Andersen and colleagues estimated income elasticities of demand for each of 22 foods consumed by each of five income strata. A complete price elasticity matrix was estimated for each of the strata. A full set of market equations was also required to translate neutral supply shifts into price changes. The matrices were then used to calculate the effect of a 10 percent shift in the supply curve of each food. The supply curves of the other 21 foods were assumed to remain constant during each shift. Because the economy was assumed to be closed, each change in food supply resulted in changed food prices. The next step was to measure the changes in nutrient intakes which occurred as a result of the changes in consumption patterns.

[1/] Pinstrup-Andersen, "The Impact of Increasing Food Supply on Human Nutrition", pp. 131-142.

Three sets of indicators were used: (1) what percent of the 10 percent increase in supply was consumed by the nutrient deficient strata, (2) the change in protein and calorie intake by deficient strata, and (3) the percentage reduction in total calorie and protein deficiencies. The final step was to rank foods according to their nutritional impact per unit of resources required to achieve the assumed supply increases (three alternative cost assumptions were used).

The analysis showed that rice, oil seeds, cassava and potatoes provided the most effective means for improving calorie intakes in the population studied, and beef, beans and maize are most effective in meeting protein intake goals. Maize appeared among the five priority commodities for all cost assumptions and supply elasticities, whether calorie or protein nutrition were the goal. Increasing the supplies of peas and tomatoes, on the other hand, reduced the total calorie intake for the nutrient deficient strata, and increasing the supplies of fats and oils reduced their protein intakes.

The overall policy conclusions are instructive. Price effects alone, Pinstrup-Andersen concluded, can do little to improve or increase the consumption of at-risk groups. Assuming income is held constant (which for the landless laborer or urban consumer is a reasonable assumption), a supply increase which

causes a price decline does not provide a significant improvement in the nutritional welfare of groups at the margin. To substantially increase the consumption of nutrient deficient groups, price declines must be fairly substantial due to leakages even in a closed system. Increasing food supplies by itself, therefore, is not an effective method, according to this study, for substantially improving the nutritional status of the at-risk urban poor.

Extending the analysis to other vulnerable groups -- the landless rural poor or small, subsistence oriented farmers -- increases the number of variables which have to be considered and complicates the analysis. A policy designed to increase food supplies could encourage farmers to hire laborers or pay their existing laborers higher wages. If so, landless laborers would have more income with which to buy food. Farmers could also increase their own incomes under this policy, if selling their increased output even at lower prices will give them additional income. In rural areas, in other words, the income effects of a policy to increase food supplies have to be taken into account as well as the price effects.

Special adaptions of this matrix analysis may be necessary to deal with farm households whose consumption decisions and income-earning decisions are made simultaneously. It is possible that goods which are produced by the farm households are valued on grounds other than market price, for example.

Thus, one may need a cash price matrix and a perceived price matrix for a complete analysis of their consumption behavior. Some understanding of why a farm household might decide to purchase a given item rather than produce it themselves is a necessary step in determining a demand response for that item. It is possible that the consumption of the purchased item will be related to income in quite a different way than will consumption of the same commodity if home-produced. This would result in different income elasticities for the same commodity, depending upon whether it was purchased or produced by the household. For this analysis, other methods need to be utilized.

This need to focus on income and price elasticity matrices was initially identified at an AID Nutrition Conference held in November 1976 and confirmed at the Rockefeller Conference on the "Economics of Nutrition Oriented Food Policies" at Bellagio in August 1977. Income and price elasticity matrices are of central importance to the CEAP project because they are necessary to translate the income and price effects of national and sectoral policies into their effects on consumption and nutrient intakes. Participants at the Bellagio Conference also pointed out the need for these matrices when evaluating the impacts of direct nutrition intervention programs which have an income transfer component.

Sub-Project Description:

Understanding and predicting the effects of agricultural policies on farmers' incomes and prices of agricultural commodities is one of the functions of the agricultural planner. Agricultural planners, to accomplish this function, use a variety of analytical methods -- some highly sophisticated, others relatively simple. One purpose of this sub-project is to develop certain analytical techniques which will enable agricultural planners to translate the income and price effects of agricultural and other development policies into their consumption/nutrition impacts. Income and price elasticity matrices are clearly two such techniques. They can be developed by working with, but not duplicating, the efforts of agricultural planners.

Because lack of data is one major reason the necessary income and price elasticity matrices have not been constructed, a second purpose of this sub-project will be to develop/improve the necessary data base. In keeping with the add-on strategy being followed in this project, data sets collected for other, but related purposes were examined to see whether income and price elasticity matrices could be calculated from them. The data sets most appropriate are obviously those which are already used to generate the aggregate price and income elasticity estimates. These data sets are generally established through family budget inquiries, household expenditure surveys and/or food consumption

surveys. The primary purpose for such budget/expenditure/consumption (b/e/c) surveys[1/] is the development of sets of weights used to construct cost of living indices. Since most countries monitor the effects of price changes on standards of living through some form of Consumper Price Index (CPI), most countries have undertaken and will continue to undertake b/e/c surveys.

Our premise is that these surveys often provide the information needed to construct income and price elasticities by income level as well as in the aggregate. Preliminary reviews indicate that surveys in the Dominican Republic, Sri Lanka, Indonesia, and Bangladesh, for example, have sufficient information on quantities of food consumed and food prices. The relevant questions for thise countries are: (1) what steps have to be taken to get the data in the shape necessary to analyze it by income group, and (2) what would the necessary reprocessing cost? In other countries, there appears to be gaps in the data, e.g., uncoded or uncollected quantity data. Some additional information might have to be collected to make these b/e/c surveys useful for the purposes of assessing consumption impacts. Where expenditure data are coded, but quantity data are not, it might be possible, for example, to use parallel price/quantity data sets (perhaps collected by another Ministry) to estimate quantities of nutrients consumed from the expenditure figures. The relevant questions in these countries are: (1) what steps are required to get the necessary data, and (2) how much would it cost to collect and process the additional data? Methodological questions include whether price elasticity matrices can be constructed from cross-sectional data and whether the Frisch method provides an acceptable alternative.

[1/] While food consumption surveys pay special attention to the quantities of food consumed, they, like both budget and expenditure inquiries, also generally ask for sufficient information on all items of consumption to generate a "total expenditure" figure. This latter can also be used as a proxy for income.

Four phases of activities will be financed under this sub-project:

1. A review and evaluation of existing b/e/c surveys in 12-16 selected countries. These reviews will include an evaluation of the potential for collecting and processing additional data and/or reprocessing existing data so that the surveys can be used for analyzing household food consumption and nutritional intakes by income levels or other relevant aggregates which enable one to specify groups at nutritional risk.

2. The identification, development and evaluation of the cost effectiveness of alternative data collection and data processing methods in three to four of the above countries.

3. The adaptation and/or development of quantitative techniques for using cross-sectional data to predict changes in consumption patterns and nutrient intakes given income and price changes.

4. Two conferences and assistance to Missions and LDC governments through TDY's to incorporate these data collection, processing, and analytical techniques into their planning processes.

Outputs expected from Phase 1 include (1) an inventory of b/e/c surveys, (2) descriptions and evaluations of b/e/c surveys in 12-16 LDC countries, (3) recommendations/guidelines for improving the design and implementation of the b/e/c surveys reviewed, and (4) a library of questionnaires, instructors' manuals, code books, tabulation plans. Outputs expected from Phase 2 include (1) alternatives for reprocessing existing data or collecting and processing additional data identified, developed and costed out, (2) computer routines for processing and/or reprocessing the data developed and tested, and (3) necessary modifications for the questionnaire, instructors' manuals and code books developed. Outputs expected from Phase 3 include (1) a state-of-the-art paper, (2) detailed descriptions of and guidelines for using the analytical techniques tested and recommended, and (3) the computer software necessary to utilize these techniques. Outputs expected from Phase 4 include six consultancies and two conferences. The ultimate outputs desired from this sub-project are, of course, changes/improvements in country planning systems.

Financial Plan

This sub-project will cost an estimated $850,000. An estimated budget is given in Table 1. Table 2 provides estimates of the salary and travel costs for each of the four project phases. Final budget estimates, of course, will be developed by the proposing contractors. The project is expected to run for 30 months with funds being obligated in two tranches.

Administrative Arrangements

This applied research/technical assistance sub-activity will be contracted to a single institution or agency. This institution or agency will

TABLE 1

ESTIMATED SUB-PROJECT BUDGET

Development of Techniques and Data Basic to the Analysis of Household Consumption

SALARIES:		
Project Director (15 mo. @ $30,000/yr.) (Half Time for 30 mo.)	$ 37,500	
Secretary/Admin. Asst. (30 mo. @ $15,000/yr.)	37,500	
Phase 1 - Survey Consultants (20 mo. @ $30,000/yr.)	49,800	
Phase 2 - Survey/Programmer Consultants (24 mo. @ $30,000/yr.)	60,000	
Phase 3 - Demand Analyst (24 mo. @ $30,000/yr.)	60,000	
Programmer (12 mo. @ $16,000/yr.)	16,000	
Consultants (4 mo. @ $36,000/yr.)	9,000	
Phase 4 - Consultants (6 mo. @ $30,000/yr.)	15,000	
Fringe Benefits (@ 15%)	42,700	
Overhead (@ 70%)	229,300	
	$556,800	$556,800
TRAVEL:		
Round Trips (30 @ $1,500)	$ 45,000	
Per Diem (1,470 days @ $50/day)	73,500	
	$118,500	118,500
OTHER COSTS:		
Supplies and Equipment	$ 8,000	
Publications	7,000	
Computer Services	25,000	
Telephone (30 mo. @ 250/mo.)	7,500	
	47,500	47,500
CONFERENCE: (5 days)		
International travel (10 round trips @ $1,500)	$15,000	
Local travel (10 round trips @ $200)	2,000	
Per diem (120 days @ $50/day) (10 X 7 days + 10 X 5 days)	6,000	
Refreshments (@ $100/day)	500	
Facilities (@ $300/day)	1,500	
	$25,000	
2 conferences (@ $25,000)	$ 25,000	50,00
CONTINGENCY: (@ 10%)	$ 77,200	77,200
		$850,000

ESTIMATED SUB-PROJECT BUDGET

Development of Techniques and Data Basic to the Analysis of Household Consumption

(Detailed Breakdown of Salary Costs and Travel by Phases)

PHASE I REVIEWS: (16 countries - 4 countries/trip)

Salaries -

Survey Consultants (20 mo. @ $30,000) (2 weeks/country X 4 countries + 2 weeks = 10 weeks trip X 4 trips = 40 weeks X 2 persons = 80 weeks or 20 months)	$ 49,800

Travel -

Round Trips (8 @ $1,500)	12,000
Per Diem (500 days @ $50/day)	25,000
	80,400

PHASE 2 CASE STUDIES: (4 countries)

Salaries:

Survey/Programming Consultants (24 mo. @ $30,000) (6 months/country, 2 months/trip)	60,000

Travel -

Round Trips (12 @ $1,500)	18,000
Per Diem (600 days @ $50/day)	30,000
	100,000

PHASE 3 CROSS-SECTIONAL TECHNIQUES: (2 countries)

Salaries -

Demand Analyst (24 mo. @ $30,000/yr.)	60,000
Programmer (12 mo. @ $16,000/yr.)	16,000
Consultants (4 mo. @ $36,000/yr.)	9,000

Travel -

Round Trips (2 @ $1,500)	3,000
Per Diem (30 days @ $50/day)	1,500
	89,500

PHASE 4 CONSULTANCIES (6)

Salaries -

Consultants (6 mo. @ $30,000)	$ 15,000

Travel -

Round Trips (6 @ $1,500)	9,000
Per Diem (300 days @ $50/day)	15,000
	39,000

be selected through the competitive bidding process. DS/N will be responsible for the management of this contract. The RSSA will assist with drafting the scope of work for the RFP, arranging for its review, orchestrating and participating in the technical review of the proposals and the selection of a contractor, day-to-day technical supervision of the contractor and arranging for (and participating in) all evaluations of contract performance. The Office of Nutrition will, through the RSSA, participate in the selection of the review and in-depth study countries and facilitate the relationships with the missions and host governments.

The contractor will be responsible for all day-to-day administrative tasks, for making regular progress reports and for meeting all project objectives.

Implementation Plan

Phase I - Review and Evaluation of Household Surveys: FAO and ILO have produced inventories of household consumption/expenditure surveys. These inventories are incomplete, very out of date, and contain little or no evaluation of the surveys themselves or the data they have produced. AID has also financed two reviews of household data sets. However, neither review provides an in-depth description and evaluation of the data - how it was collected, processed and analyzed.[1/]

[1/] The Economic and Social Data Division of the Office of Program Information and Analysis Services, Bureau for Program and Policy Coordination has funded two inventory studies. The first is a bibliography compiled by Annie Laurie in 1974 entitled Household Surveys: A Description of Household and Micro-Data Surveys. Sixty-five surveys in thirty countries were identified and described by sample size and purpose. Most of the tabulated data is available only in the countries of origin. It is not clear which studies actually contain consumption/expenditure information, however.

A more comprehensive inventory of data sources was carried out in 1977 by Research Triangle Institute of North Carolina. This inventory identified sixty-three consumption/expenditure data categories within larger sets available in the United States. ESD/PIAS/PPC eventually intends to establish a Micro-Data Bank (MIDAB) which will include tapes, codebooks and questionnaires. The second phase of this inventory study will identify European sources of data sets.

Therefore, in-country reviews will be undertaken in three to four countries in each AID region, for a total of 12-16 countries. The majority of countries will be selected from among those already identified as having potential for CEAP project activities. A team of two persons will spend up to three weeks in each country consulting with persons involved in b/e/c surveys. The review and evaluation will include how the data were collected, processed, and analyzed. Team membets should have expertise in data collection and processing methods including the state-of-the-art in developing countries. They should also be knowledgeable about the types of analyses ordinarily made with b/e/c survey information and the types of analyses contemplated under CEAP. Both members should have had field survey experience in developing countries.

Areas to be covered in the review of the data collection process include: (1) population coverage, (2) scope of the questionnaire, (3) design of the sample, (4) methods of enumeration (24 hour recall vs. weighing, for example), (5) time coverage, (6) organization of fieldwork, and (7) training and supervision of enumerators. An assessment of the accuracy and reliability of the field data will be made based on this analysis.

The processes used to code, edit and tabulate the data will also be reviewed. Particular attention will be paid to determining what data are available but are not being coded or

tabulated and/or how data could be coded and tabulated to be more useful for CEAP project purposes. Tasks will include a review of the capacity and utilization of computer facilities, the organizational arrangements for their use, software availabilities, and the availability and capability of programmers.

A brief survey will also be made of data users to determine the uses to which the data is put--tables published, whether the data is used as an input to projections, planning models, etc. Questionnaires, instruction manuals, code books, and copies of basic tables and examples of analyses which use the data will be collected for each country and catalogued by the contractor.

A report will be left in each country which describes the b/e/c survey review. These reports will include those recommendations for improving the system which could be identified in the short period of time the team spent in-country, e.g., changes in processing techniques, increasing and/or upgrading staff.

Phase 2. - Development and Testing of Alternative Data Collection and Processing Methods: Three or four countries will be selected out of this initial review for more in-depth analyses to explore the potential for, and costs of more extensive use of the b/e/c data. Selection of countries will be a mutual decision involving the contractor, DS/N, USAID

and country personnel. It is expected that fewer countries will be willing to participate in Phase 2 since these efforts are clearly more experimental.

Budget/expenditure/consumption survey data sets generally fall into one of the following categories:

(1) b/e/c data for urban areas only -

a. with quantity information gathered but only cash expenditure information coded and tabulated;

b. with only cash expenditure information gathered, coded, tabulated but where price/quantity information are available;

(2) b/e/c data for rural areas as well as urban areas -

a. with quantity information gathered but not systematically coded -- rural imputed expenditure converted and coded and not thereafter identified as imputed;

b. with quantity information gathered and systematically coded for both urban and rural areas but not extensively tabulated;

(3) b/e/c data of types (1) or (2) further identified as covering all seasons or only some selected months;

(4) theoretically national data sets of type (1) or (2) as qualified in (3), but with huge holes or inaccuracies.

An attempt will be made to select countries with data sets of different types. The objective in each case will be to determine what steps would have to be taken to bring the existing data up to the level needed for CEAP-type analyses. Each step will be identified and costed out. If reprocessing is needed, coding or recoding systems and computer routines will be designed. If questions would have to be added to the survey instrument, the necessary questions will be developed, instructions written for training interviewers and changes made in the coding manual, and the cost of the additional time to train interviewers, their time in the field, and the coders' additional time calculated.

Because Phase 2 activities cannot be determined in detail in advance of the initial survey review, the survey review team will be responsible for the design of Phase 2 activities. The tasks to be undertaken and number and timing of consultants will be reviewed with, and approved by, DS/N, USAID, and LDC government personnel before any Phase 2 activities are undertaken. Because the tasks which might be required are likely to be varried--developing a computer program for reprocessing quantity or household data, aggregating commodities into nutritionally relevant groupings, designing additions to questionnaires--the contractor will have to provide a wide range of technical expertise. The majority of activities undertaken in Phase 2 will be done in-country; therefore, availability of resources (computer facilities and time, coders, etc.) will influence country selection. The funds for computer time, programmers, etc., included in this sub-project budget for Phase 2 are

limited. This is consistent with the limited objectives which are to explore the potential for and costs of more extensive use of b/e/c data. It will be left up to the countries, perhaps with Mission assistance, to implement whatever alternative data collection and processing systems are outlined.

Phase 3 - Development of Analytical Techniques: The first task under Phase 3 will be to write a state-of-the-art paper. This paper will include, among other things, a critical review of the methodologies for constructing price elasticity matrices (focusing in particular on the Frisch method) and alternative techniques for constructing such matrices using empirical cross-sectional data. The advantages of elasticity matrices versus alternative adaptations and extensions of other methods for predicting the consumption impacts of economic policies or events will also be reviewed. The paper will also include a review and evaluation of the standard forms used to compute consumption functions and the computer hardware and software needed for various levels of mathematical sophistication.

The analysts employed on this Phase will then work with one or more b/e/c data sets obtained during Phases 1 and 2 to develop and/or adapt and test the utility of various techniques, functional forms, and computer software for analyzing consumption patterns of consumers at different income levels.

Two different criteria of "utility" will be applied:

1. Can the techniques be readily understood and implemented by the available LDC planning staff and with the computer services readily available?

2. Are the techniques accurate enough and reliable enough to be useful to planners? At reasonable cost?

The cost effectiveness and staff/software issues will, of course, be somewhat country-specific. Every attempt will be made, however, to draw from each case study the elements needed to permit more general lessons to be learned. While the solutions for the analytical problems suggested and tried may be relatively sophisticated in conception, their applications will always be examined for utility.

Phase 4 - Consultations/Conferences: To facilitate utilization of this sub-project's outputs, consultants will be made available after country reviews and completed to assist USAIDs and LDC governments in identifying and developing opportunities for implementing the recommendations resulting from the Phase 1 reviews and Phase 2 case studies. TDY consultants will also be made available to demonstrate the analytical techniques and computer software developed during Phase 3 and consult with USAIDs and LDC governments about how best to integrate these techniques into their existing planning framework. Reports will be prepared after each consultance.

Two conferences will also be held. One conference will focus on the potential for modifying b/e/c data collection and processing procedures and the alternative techniques identified and costed out. The other conference will focus on the analytical techniques adapted and tested. Conference participants will be drawn from a wide spectrum of developing country and donor analysts and data specialists. Conference reports, plus

other relevant reports and publications generated by this sub-project will also be made widely available through the CEAP information network.

▲ START

▼ COMPLETION

△ EVALUATION

□ CONFERENCE

IMPLEMENTATION SCHEDULE

DEVELOPMENT OF TECHNIQUES AND DATA BASIC TO THE ANALYSIS OF HOUSEHOLD CONSUMPTION

ACTIVITY	LIFE OF PROJECT - MONTHS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	REPORTS
1. Review and Evaluation of Household Surveys (12-16 countries - 4 trips X 10 weeks)	▲ - - - - - - - - - ▼△	Report to be completed on each country visited.
2. Development and Testing of Alternative Data Collection and Processing Methods (4 countries - 24 mos. consultant time)	▲ - ▼ △ □	Report to be completed on each consultant visit. One summary report will also be prepared for each country.
3. Development of Analytical Techniques (24 mos. Demand Analyst - 12 mos. Programmer)	▲ - ▼ △ □	Quarterly reports will be submitted.
4. Consultancies (6 mos.)	▲ - ▼ △	A summary report will be prepared for the final evaluation.

ANNEX D

SUB-PROJECT 2

AND

SUB-PROJECT 3

FARM HOUSEHOLD ANALYSIS AND DATA DEVELOPMENT

ANNEX D

FARM HOUSEHOLD ANALYSIS AND DATA DEVELOPMENT

Background

Small farmers' consumption choices are conditioned by their decisions regarding home production of food as well as sale of their output and labor. Security and risk are part of the calculations leading to their decisions. Standard income/price demand analyses may be inadequate in such cases; small farmers' perceptions of incomes and prices have to be taken into account. Understanding the behavior of this group of consumers is important because of AID's focus on rural areas and because the largest amount of poverty and malnutrition is projected to be in rural areas.

The impact of government policies on the food intake of the small subsistence farmer is complex. For example, a decrease in retail food prices will increase the purchasing power and improve the nutritional intake of the urban poor who purchase most of their food. The effect upon the small producer is indeterminate. For the producer, lower market prices may lower profitability, act as a disincentive to production, and thereby reduce farm income and purchasing power. The price effect, however, will increase that portion of real income available to spend on purchasing foods, thus presenting the analyst with an ambiguous set of possible responses whose ultimate impact on the small rural household's nutritional intake cannot be easily predicted. Lower prices may increase or decrease farm income depending upon the elasticities of the markets, the type of output produced, and the dependence of the production unit on commercial market sales and consumption of on-farm production.

Insufficient data are also a major constraint to improving our understanding of how agricultural and other policies affect the food consumption patterns of those who produce some of their food. The data necessary generally cannot be isolated from data collected from the market as a whole, but must be obtained by the time consuming and expensive method of collecting data from individual households. Because most rural households produce as well as buy food, one must have detailed production as well as consumption information for the same household to understand the relationship among decisions what to produce, what to consume, what to buy and what to sell, and how these decisions are affected by government policies and/or economic events.

Such data are seldom available, however, One such data set was identified at the 1976 AID Nutrition Conference[1/] as being suitable because it contained detailed production and consumption information from the same households throughout an entire year. Because the data were not collected for the purposes of analyzing the consumption/nutrition impacts of agricultural policies, it would have to be regrouped into food and household categories more relevant to nutrition problems and reprocessed. Still the data seemed comprehensive enough and reliable enough to warrant its use as a basis

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[1/] Since then a similar data set, although more limited in geographic scope, was identified in Nigeria.

for experimenting with different analytical techniques. Financing the use of this data also seemed to be a good way to get some methodological development work off to a quick start, especially since the idea was presented in the form of an un-solicited proposal from Michigan State University.

To speed its implementation, the MSU project (known as the Consumption Effects of Economic Policy) was financed by DS/N as a separate project in spring 1978. Its purposes are primarily methodological: (1) to develop methods for predicting the food consumption patterns of rural households that produce a significant portion of their own food, and (2) to develop procedures which utilize such predictions of food consumption behavior to analyze the impacts of changes in incomes, prices and/or employment on nutrient intakes. Questions of data development or institutionalizing the methods developed are given little emphasis. Victor Smith, the principal investigator, plans to explore the use of regression techniques as a means for measuring rural household demand and the determinants of demand. Specifying additional variables to explain consumption (production capacity, for example), specifying foods consumed in enough detail to enable them to be translated into nutrient equivalents, and testing alternative estimating equations are part of his planned approach. A model which describes the production and consumption decisions made by subsistence oriented farm households will be another output.

Others have also begun work on farm household models. Andrews, Singh and Squire, and Benito have developed linear programming models which explore the production and consumption behavior of farm households, for example. Andrew's model was tested using data from the Dominican Republic, Singh and Squire's with data from the Muda River project in Malaysia, and Benito's with data from the Puebla project in Mexico. All three data sets are significantly more limited in geographical scope and coverage than the Sierra Leone data, however. The advantages and limitations of these farm household models, their possible adaptations and extensions, their data requirements, how they can/should be used, and their potential utility to decision-makers need to be fully explored.

Other households may also exist whose observed behavior differs from urban households. If so, these households should be identified and more learned about why and how they respond to price and income changes. Three types of decisions made by households were used to identify types of households of interest:

Consumption decisions - All households make decisions about what types and quantities of food to consume. These decisions influence their intake of food and nutrition and in the aggregate help determine total demand.

Production decisions - Many households also make decisions about what foods and other commodities to produce and how much. These decisions affect their income and in the aggregate help determine the level and composition of total food supply.

Market decisions - Some households sell food and/or market services and thus make decisions about what food to sell, when, where, and for how much. These decisions affect their income and, in the aggregate, the quantity and quality of foods available. Depending on how they set their marketing margins, the price level is also influenced.

Some households normally make only one type of decision; others make all three. Most households fit into one of four categories. Households within each category share certain characteristic responses to price and real income changes.

1. Households which obtain their income from wages and consume only purchased foods respond to changes in real wages and retail prices directly. Agricultural policies and programs will affect the consumption patterns of this group through changes in the availability and/or the prices of food. The behavior of these households can be predicted fairly accurately using the income and price elasticity matrices developed in the previous sub-project.
2. Households which produce as well as consume food have several choices -- produce for the market (cash income) or consume from their own stocks (in-kind income). These households will respond directly to changes in the prices of items which they cannot grow themselves.

Their responses to changes in prices of foods which they produce will depend on their production possibilities as well as on their preferences. These reflect not only these price changes but also the opportunity costs or shadow prices for other items they produce and consume and what impact these price changes will have on their incomes. The Smith, Andrews, Singh and Squire, and Benito models deal with these households.

3. Some households which both produce and consume food may also function as entrepreneurs in the market. For these households, the income and price effects are even more complex. The market provides these households with employment and income. They influence price levels by varying their marketing margins and the amount of goods and services they offer. Thus, a policy to decrease prices by shortening the marketing chain may have a negative effect on their incomes by decreasing employment in the marketing sector as well as a positive price effect (lowering prices) for households purchasing these commodities. No work is known to be underway which deals with these households. Yet, limited evidence indicates that substantial numbers of households fall into this category.

4. Households which produce no food, but do participate in the marketing process for food, represent yet another combination. No work is known to be underway which deals with these households.

This household classification system appears conceptually useful and avoids the pitfalls of the more common urban-rural dichotomy. Poor, landless laborer households and poor, urban, wage-earning households belong to the first category of households. Both groups are likely to be nutritionally at risk and both are likely to respond in similar ways to many economic stimuli -- especially wage and price changes. Poor, landless laborer households are less likely to respond as their equally poor but land-owning neighbors might to events which have a direct influence on crop production decisions.

Progress in understanding the consumption behavior, especially of households in the second, third and fourth categories, should come more quickly now that the traditional dichotomy between the theory of the firm and consumer theory has finally been bridged. The household farm-firm theory which is now being developed reflects the view that production and consumption decisions of agricultural households are interdependent. Prior to these new modeling efforts, the agricultural household's decision to maximize profits was assumed to independent of that same household's decision to maximize

utility. Chayanov, Mellor, Sen, Berry, Soligo, Nakajima, Jorgenson, Lau, Lin, Yotopoulos, Barnum, Squire, and Singh are among those economists who have worked on the development of this theory and its applications to empirical data. Some of the initial models incorporated the assumption that production decisions precede consumption decisions. Andrews, Singh and Squire and Benito made a major advance forward by assuming that production and consumption decisions are made simultaneously.

Household models are essential but should be seen only as building blocks for more complex planning models. Household analysis is necessary to improve understanding of household consumption and production behavior and how they interact to influence patterns of food and nutrient intakes. The outputs of household models are not sufficient in themselves, however, to produce results which can readily be used by policy-makers. Some further level of aggregation is needed. For this, procedures, techniques, or other models which group households into classes meaningful for planning purposes--community, region, nation--must be developed. Using price and income elasticity matrices together with household models, planners should be able to translate the impacts of agricultural policies and programs or economic events on all types of households (whether their income comes from wages, farming, or providing marketing services) which are nutritionally at

risk (whether defined by income level, region, or socio-cultural traits). Procedures to accomplish this also need to be developed and tested during the course of this project. The majority of work in this area will be undertaken during the course of the collaborative sub-projects, which will be undertaken as another part of the CEAP project.

To improve our understanding of and ability to predict the consumption/nutrition impacts of agricultural policies on farm households, two separate sub-projects were designed. The first is designed to review techinques for analyzing/predicting farm behavior, and the second to develop improved consumption/nutrition data on farm households.

SUB-PROJECT 1: Techniques for Analyzing/Predicting Farm Household Behavior

The purpose of this sub-project is to review analytical techniques which will enable agricultural planners to determine how the income and price effects of agricultural and other economic policies will affect the consumption/nutrition intakes of rural households. The development of models which treat farm households as units which make simultaneous decisions about production and consumption choices is a promising area for (1) improving our understanding of farm family behavior given changes in agricultural policies, and (2) predicting their behavior. In developing countries, households which produce and/or sell as well as consume food, predominate. Income and price elasticity matrices are not as useful for predicting the consumption behavior of these households, however. Thus, models of various household types need to be developed and used to (1) supplement aggregate projections made using income and price elasticity matrices,

for example, to make adjustments for more accuracy, and (2) enable projections of the aggregate consumption/nutrition impacts of an income or price change to be translated into their impacts on individual households. Household models, in other words, are another core analytical technique.

A somewhat exploratory strategy will be followed in this area of methodological development. The first step taken will be to finance a thorough review of what is happening in the field--who is working there, what research they have underway, what model specifications and statistical and mathematical techniques they are using, and what areas and techniques have been neglected. The reasons for this startegy are several: a variety of household models is possible; AID is already financing some work on model development and other work is also underway; there is no consensus on the preferred model type or technique or the needed research agenda.

Gathering the major analysts working in the field for a workshop to discuss their research, its problems and potentials, plus needed areas of analysis, was selected as the quickest and most effective way to determine where we are now and where we should go next. Issues to be discussed at the workshop will include: (1) uses of household models in various planning and policy frameworks; (2) the relationship between data and models--the dependence of models on data readily available vs. the need for data systems to be designed with policy and analytical needs in mind; (3) types of models needed, given the issues which predominate and policy alternatives available; and (4) the advantages and disadvantages of alternative model specifications and statistical and methodological techniques.

Two major outputs are expected from this workshop: (1) a paper describing the state-of-the-art; and (2) a detailed research agenda. Participants, of course, will be expected to present papers on their research which will also become a part of the record of the workshop. The state-of-the-art paper, research agenda, plus the research papers presented at the workshop, will be distributed through the CEAP information network.

Additional methodological development activities are expected to be financed as a part of several collaborative activities. Ideas for specific methodological development activities are expected to be generated from (1) the workshop research agenda, (2) the farm household data development activities referred to in the next sub-project, and (3) country analysts themselves. No further details can be provided in this project paper, since neither the number nor type of activities can be foreseen with any accuracy now. Any activities financed in this way would be described in mini-project papers which will be reviewed by the projects Inter-Bureau Advisory Committee.

Financial Plan - This sub-project will cost an estimated $52,500. A tentative budget is given in Table 1. The Conference will be held in the Spring of 1979; therefore, funds for the sub-project will be obligated in FY 79.

Administrative Arrangements - To insure that proper preparations are made, the workshop is well organized, and the maximum is learned from the interchange, the individual and/or

Table 1

ESTIMATED SUB-PROJECT BUDGET

Conference on Household Models

SALARIES:		
Organizer/Director/Rapporteur (3 mos. at $30,000/yr.).	7,500	
Secretary/Admin. Asst. (2 mos. at $15,000/yr.).....	2,500	
Fringes (at 15%)	1,500	
Overhead (at 70%)	8,000	
	19,500	19,500
DIRECT CONFERENCE COSTS: - 5 days		
International Travel (10 round trips at $1,500).....	15,000	
Local Travel (10 round trips at $200)	2,000	
Per Diem (120 days at $50/day) (10 X 7 days + 10 X 5 days)	6,000	
Refreshments (at $100/day)	500	
Facilities (at $300/day)	1,500	
	25,000	25,000
OTHER COSTS:		
Supplies, Equipment, Copying	2,000	
Publications	6,000	
	8,000	8,000
		52,500

institution responsible for organizing and running the workshop will also be responsible for preparing the final outputs. This activity will be contracted through the USDA RSSA or through DS/N's indefinite quantity contracting arrangement. Using one of these mechanisms is preferred in this case because of the need to get the activity underway as soon as possible after project approval. If the workshop is to be held in late spring of 1979, preparations should begin no later than January 1979 since several months' lead time is needed to insure that the desired participants will be available, have time to prepare papers, etc.

This workshop could also be put on under the auspices of DA/AGR's Research and Training Network (RTN) project with the Agricultural Development Council (A/D/C). Under this administrative arrangement, ADC would invite all participants and the RTN contract would pay the travel and per diem costs of all non-government personnel. However, arrangements would still have to be made for an individual or individuals to organize the workshop (plan the agenda, help identify the participants, write any discussion or issue papers, help orchestrate the sessions) and write the state-of-the-art paper and research agenda. This reduced task could also be contracted through the USDA RSSA or through a DS/N IQC.

Implementation Plan - The workshop is scheduled to be held in late spring of 1979. This is early enough so that workshop outputs will be available as a reference for other CEAP

activities (especially the collaborative activities). Holding it at the beginning of the CEAP project should also leave sufficient time for a limited number of priority research activities identified to be funded under CEAP auspices. The workshop will run for five days. Approximately 20 participants will be invited--10 from developed countries and 10 from developing countries. Developed country participants will include those analysts already identified as undertaking research in the area. Developing country participants will be selected from countries where CEAP activities are underway or likely to get underway.

SUB-PROJECT 2: Development of Consumption/Production/Nutrition Data on Farm Households

This sub-project is designed to help develop and improve the data needed to analyze the effects of agricultural and other policies on the consumption/nutrition of farm families. Lack of production and consumption data for the same households has been a major constraint to the development and use of appropriate analytical techniques. Analytical methods can only be useful if adequate data are available for analysis. However, what data are needed? How should the variables be specified? What compromises between quality, quantity (sample size), and costs are likely to be necessary? How can the negative effects of compromise be minimized? The simultaneous collection of information regarding both nutritional and agricultural variables is, for example, critical to project success. The implications of following an "add-on" approach also need to

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countries are already collecting information on agricultural production, farm management, household expenditures, and market flows and prices. Improved methods for designing and implementing micro-level data collection systems are now available and should make it easier to add a consumption/nutrition dimension to existing surveys. And, perhaps most important, the marginal cost of adding consumption/nutrition information should be minimal.

Outputs expected include (1) a state-of-the-art paper reviewing farm production/farm management, household budget/expenditure/consumption, and nutritional status surveys--their purposes, conceptual bases, field techniques, and data commonly produced--to determine the potential for adding consumption/nutrition concerns to agricultural surveys or agricultural data variables to the other two, (2) reports reviewing and evaluating examples of surveys where efforts are planned to add consumption/nutrition concerns to other surveys which gather basic economic data on rural farm households, (3) guidelines for adding consumption/nutrition concerns to these surveys, (4) a workshop during which practitioners can review the guidelines, exchange information, and compare field experiences, and (5) consultancies designed to assist missions and governments to undertake these type data collection activities.

Financial Plan - This sub-project will cost an estimated $350,000. A tentative budget is given in Table 2. The project would cost considerably more if the data collection activities to be reviewed were to be financed under this sub-project rather than by missions and/or countries.

TABLE 2. ESTIMATED SUB-PROJECT BUDGET

Development of Consumption/Production/Nutrition Data on Farm Households

SALARIES:		
Project Director - (24 mos. at $30,000)	60.000	
Secretary/dmin. Asst. (12 mos. at $15,000)		
Consultants Agriculture/Consumption/Nutrition Surveys (18 mos. at $30,000)	45,000	
Fringe Benefits (at 15%)	18,000	
Overhead (at 70%)	96,600	
	234,600	234,600
TRAVEL:		
Round Trips (15 at $1,500)	22,500	
Per Diem (450 days at $50/day)	22,500	
	45,000	45,000
CONFERENCE - 5 days		
International Travel (10 round trips at $1,500)	15,000	
Local Travel (10 round trips at $200)	2,000	
Per Diem (120 days at $50/day) (10 X 7 days + 10 X 5 days)	6,000	
Refreshments (at $100/day)	500	
Facilities (at $300/day)	1,500	
	25,000	25,000
OTHER COSTS		
Supplies, equipment, copying, phone	8,000	
Publications	6,000	
	14,000	14,000
CONTINGENCY (at 10%)	31,900	31,900
		350,500

Administrative Arrangements - This applied research/technical assistance sub-activity will be contracted to a single institution or agency. This institution or agency will be selected through the competitive bidding process. DS/N will be responsible for the management of this contract. The RSSA will assist with drafting the scope of work for the RFP, arranging for its review, orchestrating and participating in the technical review of the proposals and the selection of a contractor, day-to-day technical supervision of the cont actor, and arranging for (and participating in) all evaluations of contract performance. The contractor will be responsible for all day-to-day administrative tasks, making regular progress reports, and meeting all project objectives.

Implementation Plan - Five activities will be financed under this sub-project:

1. A review of farm production/farm management, budget/expenditure/consumption, and nutrition status survey techniques to determine the potential for adding a consumption/nutrition dimension to agricultural surveys.
2. A review and evaluation of existing and planned efforts to add consumption/nutrition concerns to surveys which gather basic economic data on rural farm households.
3. Development of guidelines for adding consumption/nutrition concerns to agricultural surveys.

4. A workshop during which practitioners review the guidelines, exchange information, and compare field experience.
5. Assistance to missions and governments through TDYs to add consumption/nutrition concerns to production, farm management surveys, and monitor, evaluate, and report on the results.

The first task will be to review the purposes of, conceptual bases, and field techniques used in agricultural, consumption/expenditure, and nutritional status surveys. One reason little interdisciplinary data gathering occurs is that the field techniques and data gathered by one discipline are incompletely understood, misunderstood, or simply rejected by other disciplines. Other reasons are more complex and basic to the purposes and/or conceptual bases of the surveys. A nutritional status survey cannot be piggy-backed on a farm survey, for example, if the purpose of the nutritional status survey is to provide a statistically significant description of the prevalence and distribution of malnutrition by geographical area, age and/or sex, and the purpose of the agricultural survey is to be able to compare the costs of production of different size farms. The samples required would be significantly different.

To make possible the analysis of the relationship between consumption and/or nutritional status and family income, one could add economic questions to nutritional status surveys, or consumption and/or nutritional questions to economic surveys. For example, a question asking family income could be

added to a nutritional status survey. In the United States, or even in urban areas in developing countries, this might be a relatively easy addition to make. But in rural areas, especially in developing countries, to get accurate information on family income--in-kind as well as cash income--might double or even triple the amount of time required for the basic interview. Getting accurate information might also require interviewing a different person--an adult male in the household instead of a female, for example. Adding nutrition questions--arm circumference measurements or height and weight measurements--to a farm production or farm management survey might be easier. Adding these measurements to a farm production or farm management survey might add only 10 to 15 minutes to an interview, for example. Depending on the culture, however, a different interviewer--a female rather than a male--might be required to get the data for the children and/or the women in the family, or the location of the interview might have to be changed. These and other possible modifications and problems they create have to be explored in greater detail. Widely used agricultural surveys, like FAO's farm management survey format, will also be reviewed to determine whether and how consumption/nutrition concerns might be added.

To avoid having the evaluation remain at a theoretical level, existing or planned efforts to add consumption and/or nutrition concerns to other surveys designed to get basic economic data on rural farm households will be reviewed and evaluated. This is the second task. Several opportunities have

already been identified. In Bolivia, for example, the arm circumference of children one to five years of age is being measured as part of the National Farm Socio-Economic Survey. A survey of food consumption patterns of a sub-sample of the Socio-Economic Survey sample is also being planned. In Thailand, the Department of Agricultural Economics of the Ministry of Agriculture and the National Nutritional Institute are talking about collaborating by undertaking a nutritional survey on a sub-sample of families interviewed during the biannual farm survey. In Syria, plans are underway to take anthropometric measurements on, and ask nutrition-related questions of, the same families interviewed in a farm management survey to be undertaken as part of an agricultural sector assessment. Indications are that sufficient relevant surveys will be underway, enabling the contractor to review pertinent surveys and not have to initiate them.

Guidelines for adding consumption/nutrition concerns to agricultural surveys will be developed based on these two reviews. This is the third task. A workshop will be organized to give practitioners a chance to review the guidelines, exchange information, and compare field experience.

Consultants will also be made available to assist missions and countries add consumption/nutrition concerns to surveys which collect economic information on farm households. This assistance is expected to be limited primarily to helping design the survey, construct the questionnaire, and monitor its

implementation. Detailed advice and assistance with designing the sample, training interviewers, supervising interviewers, if needed, are expected to be available from other sources. Each consultant experience will be described and evaluated in a separate report.

▲ START

▼ COMPLETION

△ EVALUATION

IMPLEMENTATION SCHEDULE

CONFERENCE ON HOUSEHOLD MODELS

ACTIVITY	LIFE OF PROJECT - MONTHS 1 2 3 4 5 6	REPORTS
1. Conference Organization:		
Administrative	▲ – – – – – – – – ▼	
Content	▲ – – – – – ▼	
2. Conference - 5 days	▲▼△	
3. Preparation of State-of-the-Art Paper and Research Agenda	▲ – – – – – – – – – – – ▼	State-of-the-Art paper; research agenda.
	△	

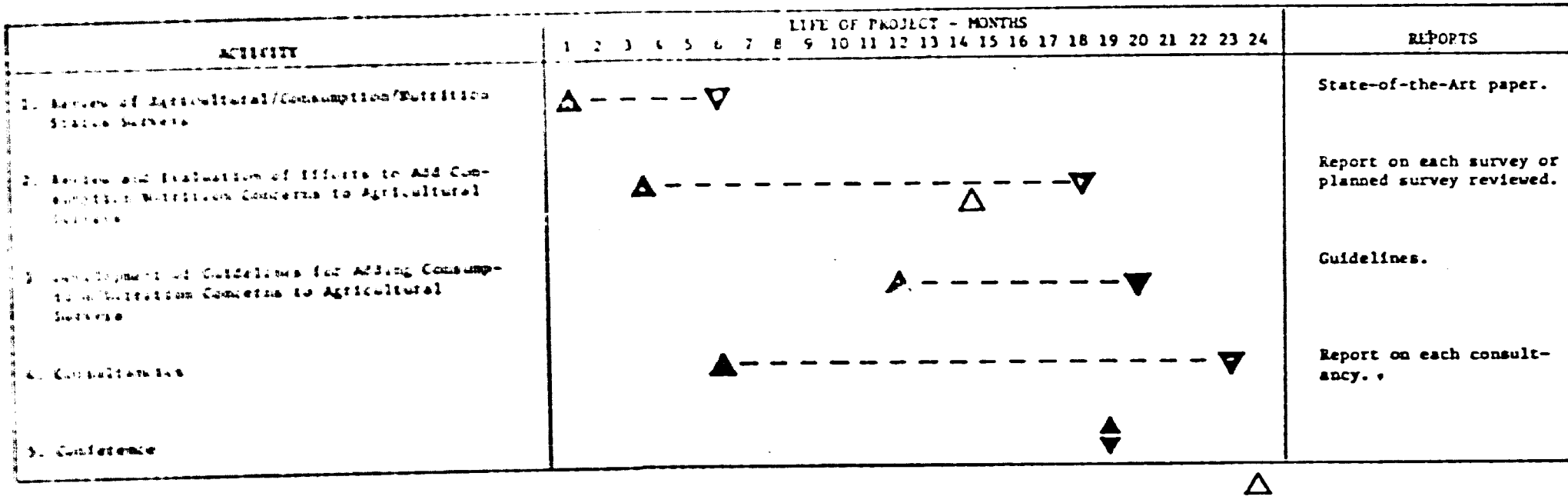
▲ START

▼ COMPLETIO

△ EVALUATIO

IMPLEMENTATION SCHEDULE

DEVELOPMENT OF CONSUMPTION/PRODUCTION/NUTRITION DATA ON FARM HOUSEHOLDS



ANNEX E

SUB-PROJECT 4

SHORT-TERM POLICY IMPACT STUDIES

ANNEX F

SHORT-TERM POLICY IMPACT STUDIES

Background

The first three sub-projects will focus on developing techniques for analyzing the impacts of income and price changes on urban and rural households. The activities financed under this sub-project will focus on the broader set of relationships between policies and programs, how they affect incomes and prices, as well as what happens to consumption patterns and nutrient intakes when incomes and prices change. Figure B, p. illustrates the number of variables which might be involved and suggeste the complexity of the relationships possible. What is needed is a better understanding of which are the more important relationships and what are their likely affects on consumption and nutrition.

The large number of variables which may have to be analyzed to determine what impact a particular policy might have on consumption patterns and the complexity of their relationships has probably been a major deterrent to such analyses. The greater the number of variables and the longer the chain, the easier it is to get embroiled in a costly cumbersome and time consuming analytical process. Policies which directly affect product prices, are probably easier to analyze. A policy which results in a rise in the retail price of the staple grain will affect consumers' nutrient intakes in a readily measurable way. Which price analysis

technique should be used may be debated, but a great deal of theory and experience are available for consultation and guidance. Once a technique is formulated and adopted and the data available, the analysis is straightforward.

Policy changes which affect factor prices are more difficult to analyze. For example, to predict the impact of a change in the price of fertilizer--an important agricultural input--on consumers' diets, one has to trace through a sequence of intermediate impacts:

1. the impact of the fertilizer price change on production--using translation equations for fertilizer purchase, use, and production response;

2. the impact of the production change on supply--using translation equations for additions to home stores, marketable surplus, and effects of competition from imports or substitute commodities;

3. the impact of the supply changes on price; and

4. finally, the effect of price on expenditure and consumption--using own- and cross-price elasticity matrices.

It is their lack of knowledge about and understanding of these complex relationships which prevents planners from predicting whether and to what extent the food consumption

patterns of various groups will benefit or suffer from a given policy or program change.

Project Description

This activity is meant to be exploratory, in recognition of the complexities involved. It is expected to help identify more clearly the technical problems involved in undertaking such analyses at the same time it provides some preliminary analytical and policy guidelines. The policy guidelines are expected to have relevance primarily to those countries involved whereas the analytical guidelines should have broader applicability. Both outputs are needed given the growing interest in the consumption/nutrition effects of development policies. Clear need also exists for developing relatively simple analytical techniques and/or demonstrating how techniques already used by agricultural economists, rural sociologists and anthropologists can be used to shed light on the relationships between policies and programs and food consumption and nutrient intakes. This sub-project is designed to achieve this purpose as well. Finding an appropriate mechanism for developing such techniques was difficult, however.

A number of possible ways to structure this activity were considered. The first, commissioning a paper on the state of the art, was rejected. The problem is that there is still too little "art" to review. The Consultative Group on

Food Production and Investment (CGFPI) reviews of food policy and investment strategies in selected developing countries illustrate the paucity of techniques available or at least used for such policy analyses. All the CGFPI reports relied solely on description or the subjective judgment of their team members, for example. The second alternative, financing an individual or group of consultants to work solely on the development of simplified analytical techniques, was also rejected. The techniques developed might not be relevant to developing country planners and decision-makers if the consultant(s) worked in the United States. Analytical techniques, to be useful need to be related to a specific economic and political environment. They cannot be developed in a void. Locating an analyst in an agricultural planning institution for a year or more did not appear to be a viable solution either. A single analyst, especially if he or she were placed in a weak planning institution, would likely face continued pressure to work on analyses other than those focused on nutrition. A small group of analysts located in a weak institution would have to deal with the same important but extraneous demands on their time. The chances of an individual or a group being able to retain a consumption/nutrition focus are greater if they are placed in a more well developed planning institution. However, if the planning institution is well enough developed to provide a good working

environment, it is also likely to want to shape as well as be fully involved in the analysis. Collaborative projects are the preferable alternative in these cases.

Financing several short-term, in-depth analyses of important agricultural policies or projects in selected countries--the third alternative--appears more feasible. These will be referred to as "policy impact" or "case" studies, because their purpose is to analyze and develop techniques for analysis, but not to institutionalize these analytical techniques or develop planning systems.

To insure that the analytical techniques developed will be relatively simple, the time analysts have in-country will be limited and they will have to rely primarily on data already collected, supplemented by their own observations and personal interviews. To ensure that a range of analytical techniques are used and also to ensure that some comparability of case study results is possible, case studies will be limited to two broad topical areas: (1) a comaprison and evaluation of the consumption/nutrition impacts of policies and programs which emphasize food, feed, cash, or export crop production; and (2) a comparison and evaluation of the consumption/nutrition impacts of integrated versus single focus agricultural projects. The relative importance to attach to food/feed/cash/export crops and integrated versus single focus agricultural projects are both important policy/program questions in most developing countries and as such are currently under debate. Both raise fundamental questions about trade-offs among

the goals of the agricultural sector--food supplies/exports/foreign exchange/employment--and about alternative ways to allocate scarce governmental resources for agricultural development.

The first topical area concerns the relative importance governments attach to different crops. Three distinct, but related questions are involved in the debate. The relevant questions, if one's objective is to maximize the consumption/nutrition benefits of policies, are:

1. Should food crops receive higher priority (because of their apparently direct impacts on food supplies and consumption) or should cash crops (which yield income which can be used for food but can also supply other basic human needs) be encouraged?

2. Should a country strive to achieve food self-sufficiency, which may mean a short run decrease in total productivity if it is achieved at the expense of other production activities, or should it rely on trade as a source of cheap food and as a market for the commodity which best exploits its comparative advantages?

3. Should a country explicitly focus on food crop production (directly consumable by humans) or diversify and emphasize feed crop (and consequently animal) production as well?

Alternative agricultural/rural development project approaches are also being hotly debated. Here the relevant questions are whether the relatively costly package approach (now being referred to as integrated rural development) results in significantly better consumption/nutrition levels as well as in increased production? Or whether the single-focus approach, where investment is concentrated largely in one factor (e.g., deep tubewells), elicits similar production and consumption levels at lower costs?

Package projects are generally planned for a specific area. Substantial production increases are usually among their objectives, and some projects have achieved spectacular results. However, evidence has begun to appear to indicate that the lowest income classes may be made worse off, both in consumption and income terms by some of these projects. The linkages which traditionally worked to provide food and employment for such groups may be broken down as a result of the project. In Ethiopia, for example, tenant farmers suddenly became landless emigrants as a result of a project, with no employment alternative. The period of transition which one could expect to be fairly long, in the case of a single focus project, is considerably shortened by the package approach. Although planned for specific areas, project impacts cannot be adequately determined unless what is happening elsewhere in the economy is also evaluated. This is particularly important

when the crop being emphasized is a non-food crop. Income increases, in this case, may not be translated into improved nutrition for project farmers and/or others in the economy if farmers with their increased purchasing power drive up food prices because increases in food production are not forthcoming from elsewhere.

Outputs expected include (1) an analytical framework for evaluating the consumption/nutrition impacts of agricultural and other development policies, (2) reports on six case studies--four focusing on the consumption/nutrition impacts of food, feed, cash, or export crops and two focusing on the consumption/nutrition impacts of package vs. single focus projects, (3) six in-country seminars and one U.S. conference to communicate findings to government decision-makers, donor personnel, and concerned scholars, (4) several relatively simple techniques for analyzing the consumption/nutrition affects of agricultural and other development policies, and (5) a final report which integrates the individual cast studies and sets forth a set of analytical guidelines and a set of more preliminary policy guidelines.

Financial Plan - This sub-project will cost an estimated $529,000. A tentative budget is given in Table 1. Final budget estimates, of course, will be developed by the proposing contractors. The sub-project is expected to run for only 18 months. Funds could be obligated in two installments, although one installment may be preferable given the 18-month

TABLE 1. ESTIMATED SUB-PROJECT BUDGET

Policy Impact Studies

SALARIES:

Project Director (9 mos. @ $30,000/yr.) (one-half time for 18 mos.)	$ 22,500	
Secretary/Admin. Asst. (18 mos. @ $15,000/yr.)	22,500	
Research Associates (48 mos. @ $30,000/yr.)	120,000	
Research Assistants (24 mos. @ $11,000/yr.)	22,000	
Fringe Benefits (at 15%)	28,000	
Overhead (at 70%)	150,500	
	$365,500	$365,500

TRAVEL:

Round Trips (6 @ $1,500)	$ 9,000	
Per Diem (720 days @ $50/day)	36,000	
	$ 45,000	45,000

OTHER COSTS:

Supplies, equipment, telephone	$ 8,000	
Publications	10,000	
Computer Services	5,000	
	$ 23,000	23,000

IN-COUNTRY SEMINARS: (2 international and 20 local participants)

Per Diem, Local (40 days @ $35/day)	$1,400		
Per Diem, Int'l (7 days @ $50/day)	350		
Travel (1 Round Trip @ $1,500)	1,500		
Facilities (at $100/day)	200		
Refreshments (@ $100/day)	200		
Supplies and Equipment	50		
	$3,700		
6 Seminars (@ $3,700)		$ 22,200	22,200

FINAL CONFERENCE:

International Travel (10 Round Trips @ $1,500)	$ 15,000	
Local Travel (10 Round Trips @ $200)	2,000	
Per Diem (120 days @ $50/day) (10 X 7 Days + 10 X 5 Days)	6,000	
Refreshments (@ $100/day)	500	
Facilities (@ $300/day)	1,500	
	$ 25,000	25,000
CONTINGENCY (at 10%)	$ 48,000	48,000
		$529,000

time frame. Two contractors could be selected, one to focus on food/feed/cash/export crop issues and one to focus on package versus single focus projects. This might cost more than the estimated budget, however, if there are economies of scale in project management.

Administrative Arrangements - This applied research sub-activity will be contracted to one (or at the most two) institutions or agencies. Limiting the number of contractors will facilitate management of the sub-project as well as ensure comparability of the resulting studies. The contractor(s) will be selected through the competitive bidding process.

DS/N will be responsible for the management of this contract. The USDA RSSA in Nutrition Economics will assist with drafting the scope of work for the RFP, arranging for its review, orchestrating and participating in the technical review of the proposals and the selection of a contractor, day-to-day technical supervision of the contractor, and arranging for (and participating in) all evaluations of contract performance. DS/N will review all research designs and will maintain close liaison with the studies as they are carried out. Approval by DS/N will be required before analyses are initiated. DS/N will also assist in identifying and making the necessary arrangements with missions and governments for undertaking each study.

The contractor(s) will be responsible for all day-to-day administrative tasks, making regular progress reports, and meeting all project objectives.

Implementation Plan - To insure that what is learned from this project becomes available while other CEAP activities (especially the collaborative activities) are still underway, this sub-project should be finished within two years. Six case studies will be undertaken--four focusing on some aspect of the food/feed/cash/export crop controversy and two focusing on the relative merits of package versus single focus projects.

The main focus of each case study will vary, but an effort will be made to insure that the analyses are comprehensive and comparable. To ensure comparability, potential contractors will be required to provide an analytical framework in their proposal. This framework would indicate what variables and relationships the contractor intended to analyze and how each case study will relate to all others. Potential contractors will also be required to suggest suitable country sites for each case study, criteria for selecting countries, and how the particular policy issue could be addressed in each. A potential contractor, for example, might propose looking at the food crop/cash crop policy issue in Senegal and the Sudan. In Senegal, the cash crop happens to also be a food crop, while in Sudan the cash crop is not edible. Undertaking a case study in each country will thus involve slightly different analytical techniques. In Senegal, for example, the portion of the cash crop that acts as a food crop must be identified, while in Sudan this problem can be ignored.

A list of potential countries and topics will be given in the RFP. Potential contractors will be expected to recommend countries and suitable policies/projects for analysis, based on their prior knowledge and experience. DS/N will make final selection of countries and case studies in conjunction with the contractor(s), regional bureaus, missions, and country governments. Once countries and cases have been selected, contractor(s) will prepare more detailed research designs which take into account the special characteristics of the country and cases selected. These will be approved by DS/N before any analyses begin.

Each case study is expected to require a minimum of six months' professional time. The amount of time per country will vary depending on the previous relationships of the researchers with the countries concerned, the amount and quality of data readily available, etc. It is possible that more intensive short-term efforts will be possible in some countries, while in others it will take a longer time to establish contacts and perhaps a research survey or two, to gather essential information.

Contractor(s) will be expected to hold in-country seminars when preliminary reports are ready. Final case study reports will be sent back to the participants in the in-country seminar. A case study review conference will be held by the contractor(s) in the United States when all case studies are completed. DS/N will participate in as many in-country

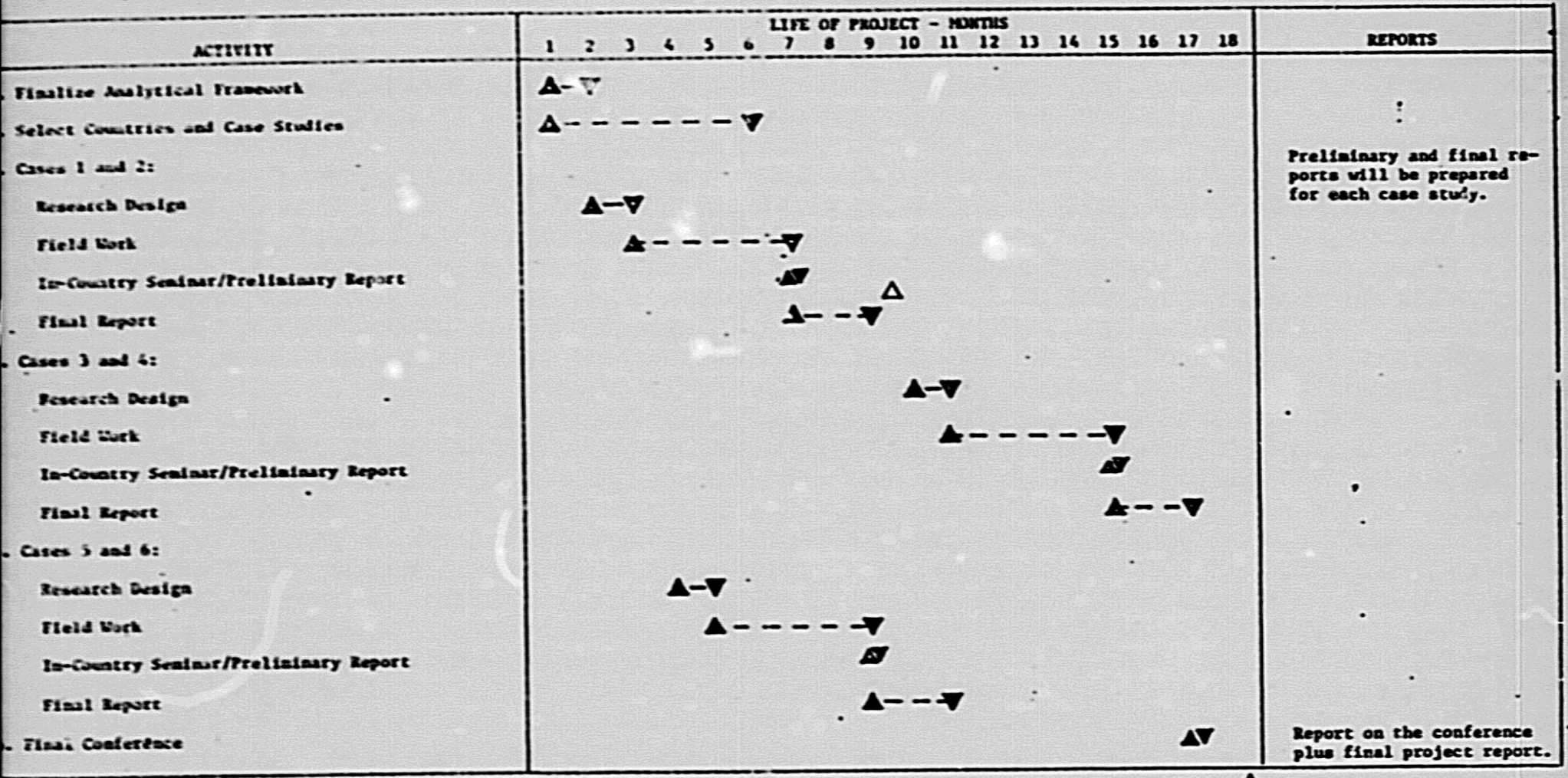
seminars as possible and will participate in, and help select, other participants for the final conference.

A tentative implementation schedule is included here as Figure 1. Evaluations are also indicated. This assumes that one contractor will be selected. Since the objective is to produce quick results, the target date of completion is only 18 months from the starting date (selection of contractor).

IMPLEMENTATION SCHEDULE

POLICY IMPACT STUDIES

▲ START
▼ COMPLETION
△ EVALUATION



ANNEX F

POTENTIAL COLLABORATIVE SUB-PROJECT

PROPOSED CIAP INVOLVEMENT IN THE DOMINICAN REPUBLIC

II. DOMINICAN SITUATION

A. Nutrition Problems

Although the Dominican Republic is not one of the lowest income LDC's, malnutrition appears to be a serious problem. AID's 1975 Health Sector Assessment found that the poor majority of Dominicans suffer from a disproportionally high rate of serious health problems, especially from malnutrition. Malnutrition, the report concluded, is more severe than in any Central American country and worse than in many countries with lower per capita incomes. The most serious nutrition problem, according to the 1969 national nutrition survey, is protein calorie deficiency. This was found to be most critical in children five years and under. Further, over three forths of the school children examined in one study of middle and lower income children suffered from some degree of malnutrition. The nutrition problem also varies by region, with the most serious problems found in the rural areas.

B. Government Committment

All available evidence indicates that the government is committed to improving the nutritional well-being of its people and is sensitive to the major impact that agricultural policies can have on nutrition. Official agricultural policy statements for the Dominican Republic, such as those in the Secretariat of Agriculture's Plan Operativo 1977 and their Diagnostico y Estrategia de Desarollo Agropecuario 1976-1986, list improved nutrition as a major official goal of the agricultural sector for the next ten year period. One specific objective, for example, is to raise the calorie level of the lowest 40 percent of the population to a minimum of 1906 calories per day.

The Plan Operativo recognizes that the income levels of the lowest income groups (mainly rural) will have to be raised to achieve its nutrition target. Land reform and increasing the productivity of small farmers are viewed as major ways to increase incomes. Policies expected to increase productivity include providing more credit and purchased inputs (e.g. fertilizer), guaranteeing prices for basic commodities such as rice, and expanding or improving irrigation.

C. Complementarity to Mission Programs

CEAP project objectives and activities complement the efforts of the USAID Rural Development Office to improve planning in the agricultural sector and the efforts of the USAID Nutrition Office to improve nutrition planning and more specifically to add nutrition concerns to the planning processes of other sectors. The USAID, for example, has devoted considerable resources over the last several years to develop an agricultural planning capability within the planning office of the Secretariat of Agriculture. A grant provides technical assistance and short-term participant training to collect and analyze farm production and management data. A price endogenous agricultural planning model is also being developed which when complete should enable government planners to "compare the potential impact of alternative policies to maximize the effectiveness of future expenditures in the agricultural sector." Adding more detailed consumption and nutrition data to this system would help Dominican planners and policy makers determine which policies would better enable them to achieve their nutritional objectives.

The Comprehensive Resource Inventory and Evaluation System (CRIES)--funded through DS/AGR--is also underway in the Dominican Republic. The CRIES project objective is to develop an analytical system which can be used to explore systematically the economic supply options of the country's resources and estimate the resource use impact of policies and programs. Data on soils, water, climate, plant adaptability, technologies and resource development opportunities have been collected and will be fed into this system. The CRIES system will eventually be linked to the sector analysis system and the statistical program to create one of the most comprehensive agricultural planning systems available in a developing country.

D. Data Availability

The Dominican Republic has a fairly well developed system of agricultural statistics. Farm management data is available from a 1976 survey of 1800 farms. A survey to up-date this data is planned for March 1979. A sub-sample of these farms is also interviewed quarterly to get information on plantings, production, etc. Information on material resources--land, soils, climate, etc. - should also be available soon from the CRIES project.

Data on household consumption and expenditures has been more limited. The 1969 Household Consumption Survey is of limited usefulness due to its age and the fact that it was confined to Santo Domingo. The Central Bank has just completed a country-wide household consumption/expenditure survey. Data will soon be available from 4000 families on quantities of specific foods consumed, expenditures on these foods, amount and sources of family income, family composition, type of housing, availability of water and sanitary facilities. Planners from a number of government agencies -- the Oficina Coordinacion Nutritional in the Ministry of Health and the Price Stabilization Agency as well as those in the Secretariat of Agriculture -- are extremely interested in using this data, but will need help in analyzing it.

II. RATIONALE FOR CRAP INVOLVEMENT

A. The Dominican Republic has severe nutritional problems -- problems which have been documented in the 1974 Agricultural Sector Assessment, the 1975 Health Sector Assessment, and the Diagnostico recently prepared by the Oficina Coordinacion Nutritional (a nutrition planning cell created in the Ministry of Health by the recent USAID

Nutrition Project).

B. The Government recognizes that the nutritional well-being of its people needs to be improved. What's more, the Secretariat of Agriculture has made improved nutrition a major official goal of the agricultural sector for the next ten years.

C. The Secretariat of Agriculture has requested CEAP assistance to help analyze the household consumption data soon to become available from the Central Bank and add a demand component to the agricultural planning model now being developed to be used as a tool for policy analysis.

D. CEAP objectives and activities complement the efforts of the USAID Rural Development Office to improve planning in the agricultural sector and the efforts of the AID Nutrition Office to improve nutrition planning and more specifically to add nutrition concerns to the planning processes of other sectors.

E. CEAP objectives to develop/adapt and test methodologies for analyzing the consumption effects of agricultural policies and prove their usefulness to decision makers and the feasibility of integrating these methodologies into an on-going agricultural planning system should be achievable

in the Dominican Republic. The technical assistance and training which is programmed should also help insure that these improvements in planning are institutionalized within the agricultural planning system.

F. The chances are good that the CEAP project can have a positive impact on agricultural policy making in the Dominican Republic. Officials of the Secretariat of Agriculture and the Price Stabilization Agency are sensitive to the nutritional problems which exist, recognize the need for more and better information on what happens to consumption patterns when incomes and prices change, and seem willing to listen to the advice given by planners.

III. SUB-PROJECT DESCRIPTION

The CEAP sub-project activity contemplated for the Dominican Republic has a technical assistance focus. The major emphasis, in other words, will be to help the Dominican Republic staff engaged in agricultural planning and policy analysis to improve their knowledge of and ability to analyze for policy making purposes the consumption impacts of agricultural policies. Better methodologies for analyzing house-

hold consumption data--calculating price elasticity matrices from cross-sectional household data, for example, -- and for incorporating this information into agricultural planning models are also expected.

A. Purposes

The purposes of this sub-project activity are the same as those of the overall CEAP project with only those modifications necessary to make the activity more compatible with Dominican conditions and expectations.

1. To help analyze and make available to Dominican planners (nutrition as well as agricultural planners) up-to-date information on the food consumption patterns of the Dominican people.
2. To develop/adapt methodologies for determining the consumption/nutrition impacts of alternative agricultural policies within the Dominican Republic planning system.
3. To test these methodologies using Dominican Republic data and demonstrate (a) their analytical capabilities and (b) their usefulness to decision makers.
4. To integrate these planning methodologies into the agricultural planning system of the Dominican Republic.

5. To help develop within the Sector Planning Unit of the Secretariat of Agriculture the capability for continued research and policy analysis in this area.

B. Activities to be Undertaken

The activities to be undertaken include (1) those specifically identified in the CEAP project, the calculation of income and price elasticity matrices by commodity, by income group, etc. (2) those necessary preludes to methodological development - descriptive analyses of the Central Bank's household consumption data and (3) those identified by the Mission and/or the Dominicans as being important to the success of the sub-project--the review of household surveys and potential policy instruments in the Dominican Republic, for example, and the provision for in-service training.

1. Review household survey information (existing and proposed) to determine what is and could become available for use in CEAP analyses.
2. Review potential policy instruments (giving special attention to those with obvious potential to affect nutrition) and identify

issues of importance to decision makers, information needed to analyze these issues, and types of presentations needed/desired.

3. Update nutrient conversion table and computerize it for use with the agricultural planning model.
4. Analyze household consumption data collected by the Central Bank, describing the dietary patterns by regions, income level, socio-economic status, etc.
5. Calculate demand functions by commodity, by income level for use in the agricultural planning model now being developed as a planning tool within the Sector Planning Unit of the Secretariat of Agriculture.
6. Calculate income and price elasticity matrices by commodity, by income group, urban/rural location, agricultural zone, etc.
7. Analyze alternative policies using the Secretariat of Agriculture's model in conjunction with the income and price elasticity matrices.
8. Provide in-service training and access to short-courses and workshops to strengthen the capabilities of the Dominicans to adapt and

apply these methodologies.

C. Outputs Expected

Like in the overall CEAP project, the outputs expected include the institutionalization of improved planning methods as well as the methods themselves. Several outputs can be expected at relatively early stage of the sub-project the inventory of household data available in the Dominican Republic, for example, and the descriptive analysis of household consumption patterns. Others cannot be expected until the middle of the second year--analyses of alternative development policies using the methodologies developed.

1. An inventory of the household data available in the Dominican Republic which identifies (a) what information is available, (b) what information is needed, (c) what are the gaps and (d) what can be done to close them.
2. A descriptive analysis of the consumption patterns of Dominican Republic households by commodity, by income level, by geographical region, etc.
3. An updated matrix for converting quantity outputs into their nutrient equivalents

computerized and available for use with the planning model.

4. Demand functions by commodity, by income level to incorporate into the agricultural sector model being developed within the Secretariat of Agriculture.
5. Income and price elasticity matrices by commodity, by income level to use in conjunction with the agricultural model.
6. Analyses of alternative development policies using the methodologies developed.
7. An institution--the Sector Analysis Group within the Secretariat of Agriculture--capable of adapting and utilizing the data and methodologies to analyze the impacts of alternative development policies and make recommendations to Dominican Republic policy makers.

D. Inputs

The technical assistance strategy which seems most suitable given the Dominican situation is to provide the Dominicans with a resident agricultural economist to work with the agricultural planning Group in the Secretariat of Agriculture. This Group has just hired a young woman to take over

responsibility for the demand side of their agricultural planning activities. She is well-trained, having just received her master's degree in agricultural economics, but has little experience. The advisor provided under CEAP would be expected to work with this individual, providing her with continuous professional guidance and assistance over the two year period--long enough to accomplish all the objectives contemplated under this project. Secondary activities would include providing guidance and assistance on other aspects of the Group's agricultural planning activities, providing in-service training and short courses on CEAP type methodologies and their applications to other members of the Group and other interested parties, etc.

Provision is also made for twenty-four person months of additional consultant time over the two year period. Consultants with expertise in demand theory, econometrics, etc., may be required to provide additional specialized assistance during the calculations of the demand functions for the sector model, for example, or during the calculations of the income and price elasticity matrices.

Substantial amounts of systems analyst or programming assistance will also be required.

Because of the strong complementarities between this activity and the sector analysis and resource inventory projects already underway in country, the responsibilities of the CEAP sub-project, the Mission, and the Government of the Dominican Republic can be spelled out in an amendment to the Project Agreement which already covers the two on-going projects. Both on-going projects are being undertaken by the U.S. Department of Agriculture under RSSA's with AID. Including the CEAP sub-project activity under a USDA RSSA should facilitate the necessary coordination among these activities.

IV. BUDGET

Salaries		$177,960
Benefits 1/		61,796
International Travel 2/		9,520
International per diem 2/		27,328
Books/Documents		10,000
Software/Computer Time		10,000
	Subtotal	236,604
Overhead 25%		59,151
	TOTAL	$295,755

ANNEX G

POTENTIAL COLLABORATIVE SUB-PROJECT

PROPOSED CEAP INVOLVEMENT IN BOLIVIA

PROPOSED CEAP INVOLVEMENT IN BOLIVIA FOR FY 78-79

I. PURPOSE

A. To support the Mission Farm Policy and National Nutrition Improvement projects by providing technical assistance to help (1) design a household consumption study, (2) analyze the data, and (3) incorporate the conclusions and recommendations resulting from the policy analysis into the planned agricultural sector assessment. The sub-goal of the Farm Policy Study is "to improve GOB sectoral planning capacity through the collection and analysis of reliable rural level information." The objective of the National Nutritional Improvement Project is "to increase the capability of the Ministry of Planning and other Bolivian implementing agencies to plan, implement, monitor and evaluate multi-sectoral National Food and Nutrition Plans at the national, department and local levels." CEAP project objectives and activities complement both USAID projects.

B. To create a basis for a longer-term applied research and technical assistance effort to help the Bolivians develop and institutionalize within their agricultural and nutritional planning systems techniques for evaluating the consumption/nutrition effects of agricultural and other development policies. Helping to provide the necessary data base for CEAP analyses and undertaking preliminary analyses of their data should provide CEAP with the contacts and experience needed to expand CEAP involvement in Bolivia if and when the conditions become right--the data base is in place and the Mission and Bolivians are ready to initiate more comprehensive policy analyses.

II. RATIONALE

A. Bolivia is an AID priority country.

B. Bolivia has severe nutritional problems according to the National Nutrition Improvement Project.

C. The Mission has requested CEAP assistance in collecting and analyzing household consumption data from rural Bolivia. Costs of data collection and some of the cost of analysis will be funded under the Mission financed Farm Policy Study project, but the Mission needs assistance in designing the questionnaire and analyzing the data. (The Missions' need for technical assistance on the Household Study--five other data collection activities will be financed under this project--was specifically noted during the DAEC review in Washington.) This data is essential to any in-depth analysis of the consumption effects of agricultural policies. Any expanded involvement in Bolivia, therefore, depends on the successful completion of this step.

D. The technical assistance provided will be used to help collect and analyze data which will be used as a basis for the next USAID agricultural sector assessment and be included in the next Bolivian Five Year Plan.

E. The possibility exists for expanding CEAP assistance in Bolivia--developing and utilizing more in-depth techniques for policy analysis--and converting CEAP assistance from mission support to technical assistance to Bolivian planning institutions, helping them to institutionalize within their planning systems techniques for evaluating the consumption and nutrition effects of agricultural and other development policies.

III. SCOPE OF WORK - FY 78 - FY 79

DATE TO BEGIN	TIME REQUIRED	ACTIVITIES
July 10	2 weeks	1. To help develop table specifications for the National Socio-Economic Survey (develop crosses of nutrition status with socio-economic variables) 2. To review and make final changes in the Household (consumption) Study questionnaire.
August 21 - Sept 4.	2 weeks	1. To help develop table specifications for the Household Study.
September 18	2 weeks	1. To review the Ministry of Agriculture's agricultrual sector model and CONIPLAN's macro model and evaluate their potential for consumption/nutrition analysis. 2. To discuss the RSSA scope of work for Bolivia for FY 80.
March 15	1 month	1. To analyze the consumption/nutrition data from the first quarter Household interviews.
May 15	1 month	1. To analyze the consumption/nutrition data from the second quarter Household interviews. 2. To develop a scope of work for integrating consumption/nutrition concerns into the Bolivian agricultural planning system (including adding consumption/nutrition concerns to the planning models already in existence.)

		3. To finalize the FY 80 RSSA scope of work for Bolivia.
August 15	1 month	1. To analyze the consumption/nutrition data from the third quarter Household interviews. 2. To begin work on integrating consumption/nutrition analyses in the Bolivian agricultural planning systems.

IV. INPUTS - TO BE PROVIDED UNDER THE RSSA

FY 78

Personnel Costs*	
7 weeks at $630.00/week	$4,410.00
Travel	
2 roundtrips, Washington/Bolivia/Washington $900.00/trip	1,800.00
1 roundtrip Washington/Utah/Washington at $340.00/trip	340.00
Per Diem	
42 days in La Paz at $45.00/day	1,890.00
3 days in Utah at $35.00/day	105.00
TOTAL	$8,545.00

* Figured at GS 13/5

FY 79

Personnel Costs*		
3 months at $2760.00/month		$8,280.00
Travel		
3 roundtrips Washington/ Bolivia/Washington at $900.00/trip		2,700.00
Per Diem		
90 days in La Paz at $45.00/day		4,050.00
	TOTAL	$15,030.00

*Figured at GS 13/5

Revised Scope of Work FY 78 - FY 79

Date to Begin	Time Required	Activities
August 1, 1978	2 weeks	See separate scope of work (attached)
September - November 1978	3 weeks (Intermittent)	1. To review analysis objectives and Household Survey tabulations suggested by GOB agencies involved 2. To develop analysis objectives for CEAP involvement 3. To help SEU/ISPC-RSSA develop system table specifications for the Household Study
September 18	2 weeks	1. To review the Ministry of Agriculture agricultural sector model and CONIPLAN's macro model and evaluate their potential for consumption/ nutrition analysis
April, 1979	1.5 months	1. To help analyze the consumption/ nutrition data from the pre-test results of the Household Survey 2. To advise in development of larger Household Survey objectives and methods
May 30, 1979	2 weeks	1. To develop a long term scope of work for integrating consumption/ nutrition concerns into the Bolivian agricultural planning system (including adding consumption/ nutrition concerns to the planning models already in existence). 2. To develop the FY 80 RSSA scope of work for Bolivia.

Initial Budget Estimates for FY 78

Personnel Costs (at GS 13/5):	
5 weeks at $630.00 per week	$3,150.00
Travel: 2 round-trips, Washington/La Paz/ Washington @ $900	1,800.00
Per Diem:	
35 days in La Paz @ $45.00/day	1,575.00
Total:	$6,525.00

Scope of Work for Consultancy o/a August 1 - 15, 1978

1. Consult with various GOB groups interested in the Household Survey, checking particularly on:

   a. institutional commitments (persons involved, what phases or outputs are of particular interest, what inputs are they willing to make)
   b. progress in thinking about the issues raised with Harry Wing in June
   c. what contributions these agencies are likely to make with regard to field work, data processing, and analysis phases of the survey;

2. Consult with persons involved in conducting the National Socio-Economic Survey, considering specifically

   a. any particular field problems being encountered in any of the 250 segments done so far
   b. any problems of questionnaire design -- including conceptual and communication problems as well as recording ease, coding and editing ease, etc.
   c. progress in finalizing processing and analysis systems for the NSES
   d. potential for initiating or improving upon nutrition-information tabulations or analysis with the NSES data;

3. Make a field visit with the Community Development Service people and observe field conditions with respect to:

   a. ease of carrying out daily visits with relevant household members
   b. factors needed to determine the size of enumerator work loads
   c. desirability of enumerator residence/ feasibility of off-sample-site residence
   d. timing of interviews/observations in daily household work schedules of relevant household members
   e. household members' roles with respect to consumption, expenditure, and income-earning activities;

4. Advise on:
   a. sample selection for the NHS pre-test (segments and households)
   b. methodology-test approaches and organization
   c. questionnaire design
   d. processing procedures
      (1) people available- qualifications
      (2) location of work activities
      (3) manual/machine editing-coding balance
      (4) tentative tabulation plan (in broad terms).