

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

FOR AID USE ONLY

1. SUBJECT CLASSIFICATION	A. PRIMARY Agriculture	AE10-0000-G136
	B. SECONDARY Agricultural economics--Ethiopia	

2. TITLE AND SUBTITLE

Proposed five year evaluation of the socio-economic impact of the Ada District Development Project in Ethiopia, consultant's report

3. AUTHOR(S)

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4. DOCUMENT DATE

1973

5. NUMBER OF PAGES

23p.

6. ARC NUMBER

ARC

7. REFERENCE ORGANIZATION NAME AND ADDRESS

Mich. State

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

9. ABSTRACT

10. CONTROL NUMBER

PN-RAA-526

11. PRICE OF DOCUMENT

12. DESCRIPTORS

Assessments
Ethiopia
Research
Rural areas

13. PROJECT NUMBER

14. CONTRACT NUMBER
CSD-3625 Res.

15. TYPE OF DOCUMENT

CONSULTANTS REPORT

PROPOSED FIVE YEAR EVALUATION OF THE SOCIO-ECONOMIC IMPACT
OF THE ADA DISTRICT DEVELOPMENT PROJECT (ADDP) IN ETHIOPIA*

by

Dunstan S. C. Spencer**

May 1, 1973

PREFACE

The writer was engaged as a consultant for a three week period by the Department of Agricultural Economics of Michigan State University (M.S.U.) to help determine how best to organize and carry out an evaluation of the impact of the Ada District Development Project on agricultural output, employment incomes and income distribution in the Ada area of Ethiopia. The major terms of reference, contained in a letter from Professor Carl K. Eicher dated March 23, 1973, were as follows:

- "(1) Meet with the Ada Project Staff and determine how they propose to carry out their action programme over the five years, with special emphasis on the activities in the first two years of the project.
- (2) Review present and proposed benchmark studies which have been undertaken or are proposed by the Institute of Development Research (IDR) of Haile Selassie I University (HSIU).
- (3) Determine gaps and needed modifications in present and proposed benchmark studies being carried out by the IDR researchers.

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(4) Make yourself available for informal discussions with the Director of the IDR and his staff on a possible division of labour between the M.S.U. team and the IDR team in carrying out the required benchmark studies.

(5) Make tentative recommendations on how the M.S.U. research team should organize their long-term research with special emphasis on methodology based on your first hand experience in Sierra Leone and the experience of other micro researchers such as Dr. David Norman of Nigeria, etc.

(6) Make tentative recommendations on how the researchers in the Ministry of Agriculture can contribute to the execution of the M.S.U. research and how the research of the M.S.U. team can contribute to the training of Ethiopians."

The consultant spent the period March 29, to April 17, 1973 in Ethiopia during which the project area was visited and discussions were held with various people concerned with general agricultural development in Ethiopia and the Ada project in particular.^{1/}

THE ADDU PLAN OF OPERATIONS:

In order to achieve the project objectives^{2/} the Ada District Development Unit (ADDU) plans to develop 10 multi-purpose farm centres over the next five years and to recruit about 3,300 small-scale farmers who will be provided with credit supplies and marketing services. In addition, it is hoped to develop an equitable system of landlord-tenant relationships and to construct or improve roads and water sources. The master plan of operations calls for a phased development of market centres and other activities of ADDU along the following lines.

^{1/}A list of people with whom discussions were held is contained in Appendix A of this report.

^{2/}Project objectives are spelled out in "Ada Agricultural Development Project, Ethiopia," Mimeograph from the Ada District.

Approximate Number of New Farmers to be Recruited for the ADDU Project^{1/}

Market Centres	Year 1 1973/74	Year 2 1974/75	Year 3 1975/76	Year 4 1976/77	Total
1 & 2	250	250	250	250	1000
3 & 4		250	250	250	750
5,6,7			500	500	1000
8,9,10				1000	1000
Total	250	500	1000	2000	3750

Although the overall plan of operation calls for work, including road construction and water source development to be phased as described above, discussions with project staff have revealed that this sequence of activities is likely to be altered, partly because of practical considerations such as the late arrival of engineering equipment which will delay construction work, and partly because of a deliberate policy to push ahead of schedule in certain areas. Thus it is likely that water source development will be completed ahead of schedule while more than two market centres may be developed and more than the projected number of farmers recruited in the second year of the project (1974/75). It appears that emphasis in the first two years of the project is likely to be on

- (a) providing credit in the form of inputs (fertilizers, seeds, insecticides and hand tools) to farmers in at least four market centres (Dukem and Denkaka in 1973/74, and Dere and Godino in 1974/75).
- (b) Well surveys and construction in as many centres as possible.

^{1/}Development Office, Addis Ababa, 5/12/72, p. 4.

- (c) Feeder road and market centre construction (office and storage space) in four market centres.

Since one of the major impacts of the project is likely to be the improvements resulting from such activities as well and feeder road construction, it is important that the M.S.U. research be planned so as to capture and measure these effects. It is therefore proposed later that data collection start in all 10 proposed market centres at the onset of the research project rather than attempting to institute a phased data collection process which might be caught on the wrong foot if, as is likely to happen, unanticipated changes are made in the action programme of ADDU.

Benchmark Studies:

Toward the end of March, 1973, a contract was signed between ADDU and IDR for the conduct of a baseline socio-economic survey of the ADA District by IDR. ADDU is providing about Eth. \$ 47,000 out of a total estimated cost by IDR of about Eth. \$ 80,000-90,000. The first draft of the questionnaire was developed by Dr. Wisdom under a USAID contract. The questionnaire has recently been substantially revised by IDR staff.^{1/} Further revisions of the questionnaire are currently being made by Mr. Charles Humphreys of the Fletcher School of Law and Diplomacy who is in charge of the survey and is currently in Ethiopia to supervise data collection and prepare the report. Revision of the questionnaire is expected to be in two directions, namely, shortening of the questionnaire which is currently estimated to take 2-2 1/2 hours to administer and precoding of some of the questions.

^{1/} See R. Disney and H. Mullenback, "Phase I Report on Ada Project," IDR Mimeograph, April 1973.

The baseline survey is a one-contact survey. Farmers will be interviewed between May and July 1973 and a report prepared by December 1973.

The current questionnaire makes some attempt to collect information on resource flows, e.g., there is an attempt to collect information on food purchases by households. It is my belief that one-contact surveys of this nature, unless accompanied by in-depth interviews using highly skilled interviewers, are a very ineffective way of collecting such information. Their comparative advantage is in collecting a mass of stock type information from a large sample of farmers. In discussions with IDR staff I, therefore, suggested that attempts to collect information on resource flows should be minimized in addition to suggesting the elimination of some questions which, in my opinion, serve only to lengthen the questionnaire unnecessarily.

Basically, I believe that as it now stands the questionnaire contains all the socio-economic stock type information that the M.S.U. research team needs. The fact that the survey will be conducted before much of the ADDU programme is operational and the sample will be drawn to cover the whole district will add to its usefulness. Perhaps one of the most useful results of the baseline survey exercise, as far as M.S.U. is concerned, is the development of what under the circumstances must be an excellent sampling frame for Ada District. The sampling frame developed using the maps of the malaria eradication programme in the Debre Zeit and Mojo areas, as well as other sources for the northwest and southeast of the district, which are not covered by the malaria eradication programme maps, should be very useful to the M.S.U. team in sample selection.

The baseline survey should therefore give a good idea of the pre-project socio-economic and structural characteristics of the Ada district. Changes in these structural characteristics, as well as the flow of resource use and output overtime, can then be monitored by the M.S.U. team using a multi-visit or cost-route technique as discussed later.

Field work for the baseline survey will probably be completed before the M.S.U. team is in the field. The IDR will welcome any help the M.S.U. team can give in data analysis and, of course, the raw data will be stored at IDR, and M.S.U. as well as other scholars, will have access to the data for further analysis. Since the M.S.U. team is likely to be very busy organizing its own research, once it gets in the field, I think the above arrangement for the baseline survey is satisfactory.

Organization of the M.S.U. Long-Term Research Effort:

In spite of the fact that I have had almost four years of research experience in Africa, the ecological, social and economic difference between West Africa, where I work and Ethiopia are enough to make me approach this section of my assignment with some trepidation. Given that there is a shortage of Ethiopians who could have been given the assignment, the next best thing would have been that an African consultant with the necessary experience would have visited Ethiopia and had discussions with an already installed research team which would have had time to study the local situation and so be in a position to discuss their proposed research methodology with the consultant. This, of course, was the original plan of Professor Carl Eicher, but the delay in negotiating the contract prevented the early recruitment of the research team. As a consultant working in Ethiopia before the arrival of the research team, I am reviewing the local situation and making tentative recommendations which may serve as a guide to the M.S.U.

research team. My recommendations, presented below, must therefore be regarded as highly tentative and the field research team must be given the necessary freedom to modify and alter the suggested plan as they see fit.

Objectives of the M.S.U. Research Programme in Ada: The objectives of the M.S.U. five-year research programme are spelled out in detail in the fourth draft of the research outline prepared by Professor Carl Eicher and dated November 4, 1972. The proposal states (pp. 4 and 5) that in carrying out the objectives of the research programme

" . . . particular attention will be devoted to exploring the opportunities for efficient labour intensive production technologies on highland farms through an analysis of the following production systems, including the institutional delivery systems for inputs:

1. Traditional system using only oxen power, traditional implements, labour and indigenous seeds as inputs.
2. Traditional system plus extension services, fertilizer and improved seed.
3. A system using oxen power combined with improved plow and harrow plus inputs in 2 above.
4. The use of a 45 hp to 60 hp tractor with seedbed preparation equipment and inputs in 2 above.
5. Same as 4 but with 25-30 hp tractor.
6. Same as 4 but with a 10-15 hp tractor."

Discussions with Ato Hailulu Getahun, General Manager of ADDU; Mr. Lane Holdcroft and Mr. Clyde Adams of USAID, Addis Ababa revealed quite clearly that this was the central core of the M.S.U. research programme in which the administration of ADDU and USAID are immediately interested. Both parties apparently want the "most suitable system" identified by the end of the first year of the project, so that a decision could be made as to what production system farmers should be encouraged to adopt starting

in the second year of the project (1974/75). This desire for the M.S.U. project to deliver policy conclusions on this section of the research was not made clear to this consultant at the start of the assignment. The M.S.U. team is apparently expected to organize and perform controlled experiments using hired equipment and land, if necessary, in order to answer the question as to which production system is appropriate for achieving the goals of ADDU.

My suggested research plan for the M.S.U. team will allow some policy conclusions to be arrived at by the end of the second year of the research programme, i.e., by March of 1975. The reasons why I do not feel that meaningful policy conclusions could be arrived at before mid-1975 are as follows:

(1) The M.S.U. research team will probably not be in Ethiopia before the start of the current crop season (early June 1973). Even if they do arrive by June 1973, the lead time needed for them to settle down, select farmers, design questionnaires, select and train enumerators would mean that the crop season would be well under way (probably half over!) before research activities could commence.

(2) The equipment needed, particularly for systems 4, 5 and 6 are not owned by the project. To obtain the equipment (particularly the 10-15 hp tractors, since the larger equipment could possibly be hired locally) would take 6-12 months.

(3) Before investigating the economic feasibility of engineering equipment it will be necessary to obtain input/output data on this equipment. Large tractors are being used in the area already so they obviously are functional. But small 10-15 hp tractors have not been tested. Do they have sufficient power for adequate seed bed preparation on Ada soils? Of the many models available, which ones are suitable from the engineering point of view? What type of implements should be used with these tractors

in the Ada area (e.g., rotavators or moldboard plows?). All these questions will need the input of agricultural economists if they are to be satisfactorily answered but a very strong input is also required from agricultural engineers, soil scientists and crop specialists. I believe that it would take more than one year and more than the efforts of the M.S.U. team of agricultural economists to answer these questions in Ada. The resources of the engineering as well as the soils and crops departments will also need to be committed to the study. In this regard it would be necessary to add an agricultural engineer to the staff of the Engineering Department of ADDU or to obtain the services of an agricultural engineer attached to some other body in Ethiopia.

(4) Before new production methods and innovations are introduced to farmers change agents must ensure that farmers have the capacity to adopt the new practices and that this process will lead to an improvement in the welfare of the farmers, however defined. In order to make such judgements in traditional farming societies we need to know what the current farming practices are. For instance it is useless attempting to introduce a new crop into an area if the peak labour demand season of the new crop coincides with the peak labour demand for a traditional crop on which farmers for subsistence or other reasons place a high priority, unless it has been established that farmers have surplus family labour which they are willing to apply to the new crop, or the farmer has the means to purchase labour from an existing labour market or the new crop can be planted late without much effect on its profitability. The IDR baseline survey will, as already pointed out, provide mainly stock information. We need to collect information on flows of resource use particularly labour use. The M.S.U. research programme will provide such information but the process will take at least one year, and such flow information is needed before judgements can be made on the six production systems to be investigated.

For the above reasons it is my opinion that the investigations of different new production technologies can best be carried out starting in the second year of the M.S.U. research programme (1974/75 crop season). Some information on the profitability of systems 1 and 2 will probably be available by the end of the first year.

There is a burning social question lurking in the minds of many people, local as well as foreign, with regards to the potential impact of tractorization on the Ethiopian economy. In Ada district about 70 percent of the farmers are tenants farming less than 5 hectares. There is a land reform bill in Parliament which would apparently give the tenants security of tenure. But even if passed, landlords still have a lot of scope to get rid of tenants if they want to farm the land themselves (they will need to give the tenants a year's notice and compensate him for any improvements he has made). Let us suppose that we find that production system 4 is the most profitable in certain areas of Ada district (maybe deep plowing improves drainage, brings up minerals, while drilling allows easier weed control so resulting in higher yields, etc.). What then? ADDU might then think it worthwhile to provide tractor rental services to tenants—well and good. But, it is also likely that landlords will evict their tenants (after giving them the necessary notice and compensating them) and farm the land themselves. This process is, of course, going on even now but it is likely to be accelerated by positive research findings. Cadu is reported to have experienced similar experiences in the northern areas of Chilalo.^{1/} Is ADDU willing to take the risk that that research might provide fuel for the fire? If the answer is no, then there is probably no point in even

^{1/}A study of the process has been made by Cadu, but the report (Cadu Report No. 74) has not been released by the Ethiopian Government.

investigating systems 4 and 5 and maybe even system 6! It is not my duty to make any recommendations on this difficult point. The research methodology I propose will enable the M.S.U. team to evaluate systems 4, 5 and 6 or to leave them out, if it is so desired.

Suggested Methodology for the M.S.U. Research Programme: There is no universally accepted methodology for evaluation of development projects. Johanne Holmburg has recently laid out an evaluation programme for Cadu^{1/} which relies mainly on "special" one contact surveys, but is supplemented by detailed "case studies" using the cost route or multiple visit technique for the generation of data that would allow the evaluation of the overall project goals.^{2/} Four case studies have been conducted by Cadu to date. Two reports have already been published^{3/} and the two others are under preparation. These studies have utilized small samples (e.g., the study in Asella was originally meant to have 12 farmers but ended up with nine).

^{1/}Johanne Holmburg, "Master Plan for the Evaluation of Cadu," Cadu Publication No. 81, October, 1972.

^{2/}The evaluation programme laid out by Mr. Holmburg, also makes provision for evaluation measurements at the department or division level and the activity or production target levels using bi-monthly and semi-annual departmental reports. These are meant to satisfy the managerial objective within the Cadu organization. Similar internal control and evaluatory devices are planned for ADDU. They will be handled by the Evaluation and Planning Division of ADDU. The M.S.U. research effort will no doubt contribute to this internal control or evaluation process, but the major objectives of the M.S.U. research relate to an evaluation of the overall or final project goals. This report is concerned with the M.S.U. research effort and is therefore not a "master plan" for the evaluation of ADDU.

^{3/}"A Case Study of Peasant Farming in Dighelu and Yeloma Areas," Cadu Report No. 22, January, 1969 and "Case Study of Farm Households in Asella Area," Cadu Publication No. 78, April, 1972.

As mentioned earlier these

"Case studies are meant to supplement information gained from general surveys on the macro-level, by providing data on family net incomes and its composition, on expenditure and revenue, on labour consumption, on investment, on financing, etc. with the individual farm household."^{1/}

The above mentioned are the crucial variables in evaluating the overall impact of development projects such as Cadu or ADDU, but the sample sizes in the Cadu Case Studies are, in my opinion, too small to allow meaningful generalizations. I therefore suggest that the order of priority should be reversed in the M.S.U. research programme for Ada, i.e., major emphasis should be placed on detailed studies using the cost-route method supplemented by a few general surveys.

A representative panel of households should be selected at the onset of the research project. This panel should be interviewed continuously (once or twice a week in the first two years and maybe less frequently later) over the five years of the project. This technique will provide reliable time series data on farm production activities, household consumption, off-farm activities, household income and expenditure, etc. and will therefore allow us to trace the impact of ADDU on its target population, through time and allow the differential effects to be separated out.

(a) The Size of the Panel: In order to yield statistically meaningful data it is necessary that the panel be large enough as well as representative of the households in the district. In this respect the small size of the ADDU project area (a wareda) compared to similar projects in Ethiopia (Cadu covers an awaraja) is an advantage. I believe a 1-2 percent sample of the 10 year target population of the project (i.e., 100-200 farm households)

^{1/} Cadu Report No. 78, p. 1,

would be adequate. The actual size would depend on the funds available for research.

(b) Representatives of the Panel: Since the panel will be the major source of data for drawing inferences on the impact of the project it is important that it be representative of the target population throughout the duration of the study. Selecting an initial sample which is representative of the target population will be relatively easy compared to the problems of ensuring that the panel stays representative throughout the duration of the study.^{1/}

In order to select an initially representative sample we can adopt one of two approaches, both of which use the sampling frame already developed by IDR for the baseline study.

- (i) A stratified proportionate sample could be drawn using the same technique and frame as the baseline survey.
- (ii) A stratified sub-sample of the baseline survey sample could be drawn.

I believe that the second approach would be more desirable because it would allow stratification of the sub-sample using the data collected from the baseline survey with proportionate sampling from each stratum. Possible lines of stratification would include (1) land tenure relationships (land owners versus tenants) since this is such an important factor in the agriculture of the area, (2) some postulated income correlated variables, e.g., type of housing or consumer durables owned and (3) soil type (light or dark soils).

^{1/}If the panel approach is used in this study it will be the first time to my knowledge that an attempt has been made to use a panel in evaluating the effects of a development programme in Africa. Some writers (e.g., Johanne Holmburg) have realized the advantage of such an approach but have shied away from its use mainly because of cost factors, but also because of anticipated difficulties in maintaining the representatives of the sample over time.

Difficulties that can be expected in maintaining the representativeness of the panel over time include the following:

(1) There would be some attrition of the panel as some members drop out. Reasons for members dropping off the panel would include death, migration out of Ada and loss of interest. Not much can be done about the death and out-migration of panel members, but researchers should try to ensure that the level of motivation of panel members is high at all times in order to reduce the number drop-outs because of loss of interest to a minimum. In this connection it is worth relating the experience of Mr. Getachew T. Mehdin, the agricultural economist on the staff of the Debre Zeit Experiment Station. In 1970, 19 farmers were selected for intensive weekly interviewing in the Ada district. Seven of the initial sample were dropped in the first year because of lack of cooperation on the part of the farmers. Ten of the farmers were interviewed during 1972 and Ato Getachew reported that the ten were willing to continue with the scheme for a third year if it had been necessary. This experience would indicate that a high drop-out rate could be expected in the first year of the operation of the panel, but once rapport had been established between the researchers and respondents the drop-out rate would be low.

(2) Maintaining a control group of nonparticipants (production system 1) is probably going to be the most difficult problem. This is because of the interviewer effect on such people. In the first place continuous contact with the group would make the members prime candidates for the adoption of the improved practices being encouraged by ADDU. This means that the attrition rate among the control group of nonparticipants is likely to be very high.

The problem of a high drop-out rate in the initial phase of the operation of the panel could be handled by drawing a large number of replacements at the initial sampling stage. These replacements could then be used as required, to replace drop-outs.

The problem of maintaining a representative sample of nonparticipants in the ADDU programme is going to be more difficult to handle. Two possibilities come to my mind.

- (a) replace drop-outs from the group of nonparticipants^{1/} (control group) by drawing a sample from nonparticipants not in the original panel and
- (b) keep the panel intact (with the hope that the control group would not have completely disappeared before the end of the research project!) and draw a small random sample of nonparticipants for study each year. This small group would serve as a check on the representativeness of the control group in the panel.

I believe that the second alternative would be easier to handle from the statistical point of view.^{2/}

At this point it is relevant to ask why the procedure of drawing a new sample of nonparticipants each year should not be extended to the group of ADDU participants in the panel, or for that matter why a new random sample should not be drawn every year instead of attempting to maintain a panel. The reasons why I do not think this would be desirable are as follows:

^{1/}Drop-outs from the control group do not necessarily drop completely off the panel. They may move to another sub-group by adopting the ADDU improved package.

^{2/}Carl Liedholm, statistician at M.S.U., should be consulted on the statistical implications of this alternative and other suggested procedures.

- (a) I expect the drop-out rate among the sub-groups of participating farmers to be much lower than among the control group because "shifts" to other sub-groups should be much reduced and easier to control.
- (b) Completely replacing the panel every year will, of course, remove the big advantage of the panel, i.e. the possibility of tracing time effects on individual respondents as well as on the group as a whole. Also the new panel would not ever become "stable" and the process of winning farmers' confidence has to be repeated every year.^{1/}
- (c) Use of the Panel: The panel should have two main uses (1) to provide time series data that will enable the impact of the ADDU programme to be evaluated and (2) to provide a target population that could be used for evaluating the impact of pilot projects within the ADDU programme. The first use is the major use but in the first two centres (Dukem and Denkaka) which, following the IDR baseline survey sampling procedure, would have the largest number of farmers on the panel, a proportion of the panel should be used for evaluating the six production systems described on page 7 of this report. The procedure would be as follows, assuming that the panel is selected as a sub-sample of the baseline survey sample. The portion of the panel which is a sub-sample of the wareda wide baseline survey sample,

^{1/}The possibility that data collected from Ethiopian farmers becomes more accurate with the passage of time and establishment of rapport after repeated interviewing of farmers is demonstrated by Johanne Holmburg ("The Reliability of Estimates from Surveys of Ethiopian Peasant Farmers," Mimeograph, 1973.) were, for example, the proportion of farmers admitting to being land owners rose per round of interview, apparently as the farmers became confident that no harm would befall them!

would be used as the panel for tracing the long run efforts of the production system or systems that ADDU is recommending to farmers. The portion of the panel which is the sub-sample of the Dukem and Denkaka baseline survey sample would be used as the, shall we say, "guinea pigs," in evaluating the six production systems. Thus this sub-panel will be divided into six major groups (assuming it is decided that all six systems should be evaluated) with some groups further divided into sub-groups.^{1/} The impact of each experimental system on the total farm household could then be evaluated.^{2/}

(d) Data to be Collected From the Panel: A brief outline of the type of data that needs to be collected from the panel is presented below. Detailed questionnaire design is in my opinion best left to the researchers directly responsible for collecting the information. Since the researchers will probably have a minimum of time for this exercise, I am attaching a sample of questionnaires to this report that have been used in micro-level type surveys in Ethiopia. These are: (1) the questionnaire used by Ato Getachew Mehdir in his case farm studies in Ada; (2) the daily record keeping book designed for use by Dr. Karl Freidrich and his group at IAR and (3) the questionnaires used by Cadu in their case farm studies in Asella area (Appendix to Cadu Report No. 78).

In addition questionnaires used by Dr. David Norman in Nigeria^{3/} and this writer in Sierra Leone^{4/} (both sets available at M.S.U.) may serve as

^{1/}E.g., production system 1 should be divided into (1.a) strictly traditional system and (1.b) traditional system with improved nutritional plane for the oxen.

^{2/} Since this experimental process would not start until the second year of the project for reasons enumerated earlier, some detailed "before project" resource use and output data would have been collected on these farms in the first year of the research project.

^{3/} Norman, D. W., "Economic Analysis of the Agricultural Production and Labour Utilization Among the Hausa in the North of Nigeria," African Rural Employment Paper, No. 4, January 1973.

^{4/} Spencer, Dunstan, "Micro-Level Farm Management and Production Economics Research Among Traditional African Farmers: Lessons From Sierra Leone, African Rural Employment Paper No. 3, September, 1972.

a useful guide. Again, because of time limitation, it would probably be advisable for the questionnaire designed for use at the start of field work to be more of the open-ended type than of the highly structured type used by Dr. Norman in Nigeria. As the first returns come in from the field and are analyzed, the researchers should be able to design much more structured questionnaires.

Data to be collected can be grouped as follows:

- (a) Inventory of farm labour, total farm land, perennial crops, buildings and equipment and livestock.
- (b) Quantity of labour used^{1/} (family and hired) by sex and age group for agricultural production and nonagricultural activities.
- (c) Quantity of bullock labour inputs used for (1) home production (2) hire to others and (3) hired from others.
- (d) Expenditure and income as related to (1) agricultural production, (2) nonagricultural production, (3) gifts and taxes, (4) food purchases and sales and (5) purchase and sales of consumer durables.
- (e) Estimation of acreage and yields using objective field measurement and sampling techniques.^{2/}

^{1/}The question of the units of measurement (man-days or man-hours) to be used in measuring the labor input is a real problem. Ideally, data on man-hours should be collected and all farm management type studies conducted in Ethiopia have reported labour use in man-hours, usually with no explanation of how the figures were obtained. Some researchers hold the view that farm management studies that report labour use in man-days rather than man-hours are useless. Discussion with researchers in Ethiopia have strengthened my belief that asking farmers for "hours" spent on different operations results in highly suspect data. I think that the M.S.U. team in attempting to record accurate labour use data in Ada should consider adopting the following technique: a) record the labour use by farmers in "quarter days" and b) record "hours" for a sub-sample of the panel using the work-study approach or teach a sub-sample of the farmers to use watches or stop-clocks that may be rotated among sample farmers (technique used with some success by Ato Getachew Mehdin of Debre Zeit Experiment Station).

^{2/}For a description of possible methods to be used see Spencer, op. cit. and Cadu Report No. 64.

With regards to household consumption data it would probably be unnecessary to interview panel member twice-weekly after completion of the first year of record keeping. One representative month in each quarter could be selected after the first year of record keeping and data collected during the representative months, i.e., 4 months a year.

To collect data needed, enumerators could be stationed in each of the ten market centres. They will then be operating within a radius of about 6 kms.^{1/}

(f) Other Sources of Information: The panel described above should provide most of the data needed for analyses of the output, income distribution and consumption effects of ADDU, as well as providing some information on population growth, migration attitudes of farmers, etc. But it will be necessary to collect additional information from sources outside the panel. Additional information will be needed on (1) market institutions and marketing of major crops and livestock, (2) migration into and out of Ada district and (3) structural changes in the district.

(1) Marketing Study: The structure and performance of the agricultural marketing system within Ada needs to be evaluated. Weekly price data should be collected from the village markets within the district. Since the Ada markets are probably closely linked to markets outside Ada it will be necessary to study the marketing system of the major Ada commodities within the district as well as in the surrounding areas (probably limited to Shoa Province). Marketing research should be conducted in close cooperation with the marketing division of ADDU and will also serve as a means of cooperation with other research institutions in Ethiopia.

^{1/}Each enumerator should be able to handle about 15 farm households provided they are provided with a mule, horse or bicycle for transportation.

(2) Migration Study: Farmers will migrate in and out of Ada district during the course of the project. Participant farmers who migrate from Ada might take ADDU improved practices with them to other areas of Ethiopia, while farmers migrating into the district might remit part of their increased income to less fortunate family members in their home town. These effects of ADDU need to be quantified. It will therefore be necessary to conduct one-contact surveys of people who have migrated from Ada as well as the families of migrants left in the areas of origin of migrants. Such surveys will allow the "spill-over" effects of the project to be estimated.

(3) Structural Study: An "after" benchmark survey using the same questionnaire of the IDR baseline survey will need to be conducted at the end of the M.S.U. research project. This will allow structural changes (e.g., housing conditions) in the interim period to be determined.

Research Outside Ada District and Cooperation With Other Research Organizations:

In the fourth draft of the M.S.U. research proposal it is stated that at the end of the first year of the contract the research team will consider the feasibility of carrying out comparable research outside Ada. I have already described two areas of research in which field work needs to be conducted outside Ada, i.e., the marketing and migration studies.

Farm management studies using the cost-route methods may also be conducted outside Ada if funds are available. Initially the research should be limited to Shoa Province and should concentrate on crops of importance in Ada, i.e., teff, wheat, etc. This will allow comparisons to be made with conditions in Ada.

Such research should be jointly planned, executed and financed by M.S.U., IDR and IAR.

Training of Ethiopian Agricultural Economists:

The training of Ethiopian agricultural economists is an important aspect of the M.S.U. programme. Because of the shortage of available agricultural economists at the M.S. level the M.S.U. team will have to train Ethiopians from the B.A. level. Bachelors level graduates in agriculture or economics should be recruited to act as research assistants to the team for a period of one or two years before being sponsored for overseas training. In addition, other institutions with which the team is associated, e.g., IDR should be encouraged to recruit B.S. level research assistants who will work with the team before proceeding for further studies.

APPENDIX

LIST OF PERSONS WITH WHOM DISCUSSIONS WERE HELD IN ETHIOPIA

ADDU STAFF

Ato Hailulu Getahun	Managing Director
Mr. Rafael Grant	Assistant Managing Director
Dr. Muhr	Crops and Soils Department
Ato Getachew Jembere	Crops and Soils Department
Mr. E. Hernandez	Credit and Extension Department
Ato Getane Yemene	Credit and Extension Department
Ato Haila Getu	Marketing Department
Mr. Dwight Michener	Engineering Department
Ato Kifle Lemma	Legal Adviser

CLAPHAM MAYNE CO.

Mr. Arvin Mayne

USAID, ADDIS ABABA

Mr. Lane Holdcroft	Director, Food Division
Mr. Clyde Adams	USAID and Ada Project

HSIU

Dr. Asefa Meheretu	Director, IDR
Mr. Charles Humphreys	IDR
Ato Getachew Mehdin	Debre Zeit Experiment Station

IAR

Dr. Karl Freidrich

Mr. A. V. E. Slangen

Ato Solomon Bellete

E.F.I.D.

Mr. Johanne Holmburg

OTHERS

Dr. Selashe Kebede

Ethiopian Spice Extraction Company