

AFRICAN RURAL EMPLOYMENT RESEARCH NETWORK

WORKING PAPER

ANNUAL REPORT
for Period
July 1, 1974 - June 30, 1975

"Rural Employment in Tropical Africa:
A Network Approach"

Working Paper No. 8

1975

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I. SUMMARY

A. Statistical Information

1. Project Title: "Rural Employment in Tropical Africa: A Network Approach"
2. Contract Number: AID/csd 3625
3. Project Director: Dr. Carl K. Eicher, Department of Agricultural Economics, Michigan State University, East Lansing, Michigan 48824.
4. Contract Period: July 1, 1972 - June 30, 1976.
5. Reporting Period: July 1, 1974 - June 30, 1975.
6. Total AID funding to date: \$847,471.
7. Total expenditure and obligation through June 30, 1975: \$701,805.
8. Total expenditure for the reporting period: \$316,786.

B. Accomplishments

Work continued during the report period as outlined in African Rural Employment Working Paper No. 1, "African Rural Employment Study: Progress Report and Plan of Work, 1972-76," May 1974.

1. Field Operations

In Sierra Leone the research team under the direction of Dr. Dunstan S. C. Spencer concentrated on primary data collection by a research team of seventy junior staff as enumerators, coders, drivers, stationed in forty locations throughout the country. The components of the integrated research program included:

- a. Farm level study of five-hundred farmers,
- b. Consumption study,
- c. Small-scale industry study,
- d. Rural-urban migration study,
- e. Processing,
- f. Marketing,
- g. Choice of technique in fish processing.

In Ethiopia major attention was directed to the development of a plan of work and inauguration of primary data collection in the Ada District under a cooperative research agreement between the Institute of Development Research, Haile Sellassie I University and Michigan State University.

The plan of work was refined in October 1974 following a conference of Network researchers which was held in Debre Zeit, Ethiopia. In February 1975 a sample of baseline study respondents was drawn from five service centers in the Ada District. In March and April of 1975 a stock questionnaire was filled out on 119 households in four service centers. The collection of weekly input/output data began during the week of April 21, 1975. However, it took until the week of June 9th before all farmers were being interviewed on a systematic basis.

In Nigeria the research program under the direction of Professor S. O. Olayide, Department of Agricultural Economics, University of Ibadan, completed field work in the Kwara State of Nigeria. The data will be processed and the results of the Kwara study will be available for incorporation into the final report for AID/csd 3625.

2. Annual Conference

An annual conference of Network researchers was held in Debre Zeit, Ethiopia, in October of 1974. An agenda and list of participants are included in Appendix A.

3. Related Research

The major research activity not financed under AID/csd 3625 which will contribute to its contract objectives is a two-and-one-half year study of the costs and returns of rice production in northern Ghana. This study is being undertaken by Fred Winch and will be completed in December of 1975.

4. African Rural Employment Library

The African Rural Employment Library continued to serve a large number of researchers in the United States and Africa. The monthly acquisition list is sent without charge to approximately 60 off-campus and 70 campus scholars, researchers, graduate students and institutions.

II. OBJECTIVES AND BACKGROUND

The background and objectives of AID/csd 3625 have been spelled out in detail in the May 1974 Working Paper, "African Rural Employment Study: Progress Report and Plan of Work, 1972-76".

The primary emphasis in 1974/75 was to complete field research in Sierra Leone and Nigeria and to initiate research in Ethiopia. Since RAC has approved an extension of AID/csd 3625 until June 30, 1976, the field research team in Sierra Leone was able to collect data for a full production year and to develop concrete plans to spend a full year (July 1975 through June 1976) processing data and completing reports and monographs.

III. ACCOMPLISHMENTS

A. Primary Data Collection in Sierra Leone

Rural Employment Research Project, Department of Agricultural Economics, Njala University College, University of Sierra Leone, Njala, Sierra Leone

General

During the period July 1, 1974 to June 30, 1975 the research program at Njala University College has built up to its peak. Two senior staff members joined the project early in the period. Mr. Joseph Tommy arrived in July to take charge of the migration study. Mr. Dean Linsenmeyer also arrived in July to carry out a study of the fishing industry. While largely financed from other sources, the study of the fish industry has received substantial logistical support and is considered an integral part of the total project. In particular, it will provide a case study of the effects of varying capital intensive technologies on output and employment in an industry which displays a wide continuum of technologies from very small one-man canoes to large, modern trawler production. In addition, the project has recruited one additional research assistant--Mr. Tom Roberts--who worked with the processing and marketing components of the study.

The project has also employed over 70 junior staff as enumerators, coders, drivers, etc. stationed in 40 locations around the country for periods up to 18 months. A major problem has been the difficulty in recruiting intermediate level staff to help supervise this number of widely dispersed enumerators. As a result, senior staff have assumed the burden of field supervision which although increasing the quality (but not quantity)

of supervision has delayed office duties, particularly data processing.

In all, some fifty survey forms have been administered in the separate components of the study. These are summarized in the Appendix.

The Farm Level Study

The farm level survey is based on a sample of approximately 500 farmers drawn by first randomly selecting three enumeration areas in each of 8 resource regions around the country. In each area, 20 to 24 farm and nonfarm households were selected. Collection of daily input-output information from farmers continued at twice weekly intervals throughout the year until May 1975.

During the year fields were measured with compass and tape and yield plots laid. A major problem was experienced in obtaining suitable scales for weighing sample plots. Consequently yield plot data is incomplete. Preliminary analysis of farm capital investment and characteristics is obtained in Spencer [1974].

Consumption Study

The consumption survey continued to May 1975 using a sample of half of the selected farm households to give one year's expenditure data and provide seasonal expenditure patterns. Some preliminary results disaggregating expenditures by origin are contained in Byerlee [1974]. Approximately 10 percent of rural cash expenditures are for commodities from rural small scale industries.

Small Scale Industries

See Chuta and Liedholm [1975].

Rural-Urban Migration

The migration survey was launched in September 1974. In the first phase a census was taken of all households in each enumeration area selected for the farm level study (approximately 20,000 persons total). Basic data was obtained to estimate demographic parameters such as age/sex, specific birth and death rates and rates of in and out migration. At the same time, names and addresses of all migrants who have moved to urban areas were collected where possible. Approximately 1,600 urban migrants were identified by this process with about two-thirds providing addresses. In the second phase about 800 migrants were traced into urban areas for an indepth interview. In a third phase return migrants and non-migrants were interviewed in the same rural enumeration areas. The first and third phase are complete, although the second phase and some special studies on attitudinal characteristics and unemployment are continuing. A description of the methodology is contained in Byerlee and Tommy [1975].

Processing

The major emphasis of the processing study has been on alternative techniques of rice milling, i.e., hand pounding versus various types of small rice mills. Input-output information has been collected for rice mills and hand processing over a ten month period. In addition, some special time and motion studies have been conducted to determine the relative efficiency

of hand pounding. A preliminary report by May-Parker [1974] details the distribution of processing facilities in the country.

Marketing

Sample prices and weighings were recorded for local food commodities and imported commodities from fourteen urban locations around the country. Some indepth interviews with marketing agents have also been conducted to determine costs and margins for various marketing functions.

Data Processing

Data coding using an average of twelve coders began in June 1974 and will continue up to August 1975. As far as possible, daily data particularly on labor use have been preserved to provide maximum flexibility in data analysis and retain as much information as possible on daily and seasonal labor utilization. Some preliminary analysis such as area and yield estimates is being undertaken before placing data on cards. Approximately 500,000 cards will result from this processing.

Policy Model

During 1974/75 the structure of an aggregate model for detailed policy analysis was formulated in consultation with Dr. Hartwig de Haen. The model consists of a detailed aggregate model of the rural economy including farm processing and nonfarm sectors, alternative technologies and disaggregated by resource region. A second component of the model is a macro-model based on an input-output framework to analyse interactions between

the urban and rural economy. Finally a labor allocation component enables movement of labor between sectors and regions.

The model is described in detail in de Haen, Byerlee and Spencer [1974]. Much of the secondary data on non-rural sectors for the model has already been collected.

Completion of Njala Fieldwork and Data Processing, July through August 1975

During July field work is continuing to complete the field work for the migration survey and the fish industry survey. In the migration survey efforts are continuing to trace as many migrants as possible to increase the total sample size. At the same time a case study of attitudinal characteristics is being conducted for three contrasting streams. Also, unemployed migrants identified by tracing are being interviewed to determine the nature and causes of unemployment. This combined with the coding of labor exchange information will provide more understanding of urban unemployment.

Major attention is being given to completion of data coding. Also coded data is being prepared and shipped to Freetown Central Office of Statistics for keypunching. On completion of keypunching, data will be transcribed onto tapes for further analysis at MSU.

Farm Level Study

Questionnaire Number	Name of Questionnaire	Sampling Procedure	Total Sample Size	Frequency of Interviews	Contents of Questionnaire	Major Variables Derived from Questionnaire
F-1	Household listing questionnaire	<ol style="list-style-type: none"> Country divided into 8 resource regions Three census enumeration areas chosen randomly from each region All households in each enumeration area listed 	24 enumeration areas (about 2,400 households)	Once only	Name of household head Major crops and nonfarm enterprises	Sampling frame for F-2, F-3, etc.
F-2	Household stocks questionnaire	20 farm and 4 non-farm households in each enumeration area chosen randomly	600 households	Once only	Number and characteristics of household members Stocks of: equipment, farm produce, livestock and tree crops	Value of farm and nonfarm capital and labor stocks
F-3	Input-output questionnaire	20 farm and 4 non-farm households in each enumeration area chosen randomly	600 households	Twice weekly for one year	Daily records of: Hours worked per member per enterprise per day Inputs purchased Hired labor and labor sold out Farm and nonfarm output Farm and nonfarm sales Loans given and received Gifts given and received	Household income and its distribution Labor utilization and returns to labor Seasonal labor profiles of farm and non-farm enterprises
F-4	Field questionnaire	All fields of households selected for F-3	About 1,500 fields	Once only	Field measurements Land tenure Land improvements Cultivation practices	Areas of field, tenancy status and cost of land improvement
F-5	Yield plot questionnaire	1-4 plots per field depending on crop--plots randomly laid	About 1,500	Twice--harvest time threshing time	Seed rates Variety Weight of crop in plot	Crop yields
F-6	Supplementary output questionnaire	All selected households	600 households	Once after harvest	Output of all crops Size and weight of local units of measure	Crop yields--alternative measure
F-7	Distance questionnaire	All fields of selected households	About 1,500	Enumerator observation	Distance and time to walk to field	Distances of fields by crop
F-8	Changes, information and constraints	All selected households	600 households	Once only	Investments past cropping season	

Consumption Study

Question-naire Number	Name of Question-naire	Sample Procedure	Sample Size	Frequency of Interview	Contents of Questionnaire	Major Variables
C-1	Daily consumption purchases	Half of farm level households chosen randomly	250	Twice weekly, One week a month	Daily purchases by item, quantity, origin, place of purchase	Expenditure elasticities by commodity, place of origin and income
C-2	Monthly consumption purchases (excluding food and drinks)			Monthly	Purchase as above (excluding food and drinks) for each month	

Small Scale Industry Study

Questionnaire Number	Name of Questionnaire	Sample Size	Frequency of Interview	Sampling Procedure	Questionnaire Content	Major Variables Derived
	Phase I small industry survey	39 towns above 2,000 persons; 24 enumeration areas	Once only	Towns 5,000+ - all towns Towns 2,000 - 5,000, sampled half Rural enumeration areas in farm level survey	Enterprise Employment Number and kind of machine	Total employment in small industry Sample frame
SSI-1	Inventory of buildings	180 firms randomly selected and 90 purposively selected in 14 towns	Beginning and end of survey	1. <u>Towns</u> Chosen on condition that service at least on rural enumeration area of farm level study 2. <u>Firms</u> Firms in enumeration area chosen 14 towns both randomly and purposively	Floor space Age, values, rental	Total capital equipment stock
SSI-2	Inventory of equipment				Stock of tools, source, age, value	
SSI-3	Inventory of output and inputs				Value of inputs and outputs in stock	
SSI-4	Labor input				Labor input by type, work done by day	
SSI-5	Output				Output by day Disposal of output	
SSI-6	Miscellaneous input		Twice a week		Raw materials inputs per week Electricity, water, etc. per month	Variable costs Total returns Returns to labor and labor allocation
SSI-7	Financial			Loans		
SSI-8	Entrepreneur characteristics				Socio-economic characteristics of entrepreneurs and their problems	
SSI-9	Investment and other information				Purchases of tools, equipment, etc. during year. Output expectations. Apprenticeship	Net investment Total sales
SSI	Case study of bakery	12	Once	All modern bakeries as possible	Costs, turnover, marketing and distribution, competition, technical factors	
	Case study of gara technology	16	Once	As many as possible with emphasis on progressive producers and Phase II sample	Development of gara in Sierra Leone, in depth study of gara technology; quality control	Technological and related problems of the industry
	Case study of gara cooperatives	5	Once	All identified	Organization and structure Costs and returns Management	Organizational and marketing problems

Migration Study

Questionnaire Number	Title of Questionnaire	Sampling Procedure	Sample Size	Frequency of Interview	Contents of Questionnaire	Major Variable Derived
MG-1	Origin questionnaire	All households in 24 enumeration areas of farm level study	About 25,000 persons	Once	Age, sex, education, fertility. Last place lived, mortality. Names and addresses of out-migrants	Basic demographic parameters. Population of enumeration areas. Population change. Rates of rural-urban migration
MG-2	Urban migrants	All migrants traced into towns 2,000 above	800 persons	Once	Detailed information on occupation. Incomes, job search, support. Property, social participation, the migration decision, transport. Contacts with home, education, etc.	Urban incomes, unemployment. Rural-urban remittances, etc.
MG-3	Characteristics of rural Villages	All villages in each of 24 enumeration areas	100 persons	Once	Government, communications, social amenities, schools, leadership in each village	Description of rural environment
MG-4	Return migrants	Ten persons in each enumeration area who have lived in town and returned home	200 persons	Once	Migration history, life in town, reasons for returning home	Determinants of return migration
MG-5	Outmigrant households	Heads of households with household members away in town	200 persons	Once	Decision making, exchange of gifts	Decision making for migration. Use of remittances
MG-6	Nonmigrants	Males in each enumeration area, 15-30 years who have not left that enumeration area	200 persons	Once	Migration intentions and perception of urban areas	Determinants of decision to migrate or not migrate
MG-7	Attitudinal characteristics	Three migration streams purposely chosen. Both urban migrants and rural nonmigrants interviewed	150 persons	Once	Attitudes to rural and urban life style, family ties, etc. Occupational prestige	Effects of migration on attitudes
MG-8	Unemployment	All unemployed migrants identified in MG-2	50 persons	Once	Details of job-search, support, expectations	Nature and causes of unemployment

Processing Study

Questionnaire Number	Name of Questionnaire	Sampling Procedure	Total Same Size	Frequency of Interview	Contents of Questionnaire	Major Variables Derived from Questionnaire
ML-1	Input-output questionnaire	14 localities selected as for SSI. All rice mills selected unless above 10 then randomly selected	40 rice mills	Twice weekly	Daily record of: hours work, labor input, number of customers, quantity of husk rice input, hired labor input and returns, time mill under repairs, income and expenditure	Labor utilization and returns to labor. Actual hours worked and total mandays. Milling charges (income). Energy consumption--diesel, electricity (daily consumption). Expenditure on spares, fuel, wages, rent, repairs, etc.
ML-2	Record of activities	14 localities selected as for SSI. All rice mills selected unless above 10 then randomly selected	40 rice mills	Once monthly	Record of customers of time of visit and quantity and type of rice owned by each customer. Sample measurements	Type of rice usually brought into mills and variety. Origin and disposal of rice. % out-turn of each mill in sample every month
ML-3	Characteristics of rice mill entrepreneurs	14 localities selected as for SSI. All rice mills selected unless above 10 then randomly selected	40 rice mills	Once only	General information--education, ethnic group, training and business interest. Sources of capital to finance inventories, cost of equipment, changes, changes and constraints, records, storage. Choice and location of mills. Milling and marketing activities. Spare parts, sources and problems. General information	Sources of capital to finance inventories, cost of equipment and expansion. Criteria for choice of mills and location. Storage facilities and practices. Record keeping--ability and type of records. Information on facilities and operating practices. Spare parts--sources, problems and methods of purchase. Milling and marketing activities
F-9	Observation on hand pounding (work study form)	4 households in each randomly selected enumeration area (farm level) includes non-selected households	64 households	Once only	Type and variety of rice (local names). Age-group of people pounding. Weight of rice--before and after pounding. Time distribution per activity via--loading, pounding, unloading and winnowing	Type of rice--parboiled or raw. Varieties. Age range of participants of hand pounding. Time--total time spent per activity and overall total time for the enterprise. Percentage out-turn of hand pounding.

Fish Study

Questionnaire Form Number	Name of Questionnaire	Sampling Procedure	Total Sample Size	Frequency of Interview	Contents of Questionnaire	Major Variables Derived from Questionnaire
FS-1	Fish household listing questionnaire	<ol style="list-style-type: none"> Country divided into 3 coastal supply regions 2 landing sites selected from each region on probability proportional to size based on the 1974 National Fisheries Survey All boat owners listed which are based at that site 	5 landing sites	Once only	Name of boat owners based at the site—major fish and non-fish enterprises	Sample frame for FS-2, FS-3, etc.
FS-2	Household and stock questionnaire	25 boat owners selected at each landing site	110 households	Once only	Name of boat owners based at the site—major fish and non-fish enterprises	Fishing and non-fishing capital and labor stocks
FS-3	Input output	25 boat owners selected at each landing site	110 households	Twice weekly for 9-12 months	Name of boat owners based at the site—major fish and non-fish enterprises	Household income and its distribution; Seasonal labor profits of fishing and non-fishing enterprise; Labor utilization and returns to labor; Returns to alternative production technologies
FS-4	Twice monthly fish catch weighings	One household selected randomly from households being interviewed for FS-2	5 households	Twice monthly	Fresh weight of of catch by type; Dry weights of catch by type; Amount of fuel used for drying; Hours dried	Conversion ratio fresh-dry species; Technical efficiency of drying fish on traditional Banda
FS-5	Questionnaire for transfer of information and change	50% of households selected for FS-2 in each area	55 households	Once only	Sociological characteristics of householder; Sources of transfer of information; Capital investments in last 10 years	Pattern for transfer of information; Long run growth patterns for individual enterprises; Extent of indebtedness and source of borrowing
FS-6	Fish marketing questionnaire	As many wholesale fish traders purchasing on day of interview at that locality as possible		Once only	Sociological characteristics of trader; purchasing practices and costs involved	Costs and returns to wholesale fish trader; Major constraints in wholesale smoked fish trading
FS-7	Fish tracing questionnaire	Selecting traders from the most frequent area of demand as revealed by FS-3	10	Only once	Detailed costs, time, spoilage and problems; Fish wholesaling by actually traveling with the trader and monitoring continually	Major constraints in wholesale fish trading; Returns to labor and capital in wholesale fish trading
FS-8	Fish retail marketing	As many fish retailers as possible who purchase fish from respondent in FS-7		Once only	Costs and revenue in fish retailing	Returns to labor and capital in retail fish trading
	Large scale fish production firms	Interview all the firms currently having trawlers licensed to operate in Sierra Leone waters	5	Once only	Capital investments; Output records; Operating costs and revenues	Returns to labor and capital in large scale trawling technologies

B. Primary Data Collection in Ethiopia

The cooperative research in the Ada District of Ethiopia was carried out during the reporting period according to a Memorandum of Agreement between the Institute of Development Research, Haile Sellassie I University and Michigan State University. The Memorandum of Agreement was signed in June of 1974. The Memorandum of Agreement was reproduced in the May 1974 Working Paper, "African Rural Employment Study: Progress Report and Plan of Work, 1972-76".

The objectives of the research in the Ada District of Ethiopia are spelled out in Working Paper No. 5, "Plan of Work for the IDR/MSU Research Program in the Ada District of Ethiopia," dated November 1974.

The project leader, Professor Trimble R. Hedges, arrived in Ethiopia in August 1974. The period from August through October 1974 was spent in developing a plan of work and in preparing for the annual conference of the African Rural Employment Research Network and in attempting to recruit a research team.

Two consultants, Professor Warren Vincent and Dr. Dunstan Spencer, spent September/October in Ethiopia in an attempt to draw on the Sierra Leone research experience in designing pre-coded questionnaires, and in revising the plan of work immediately following the Debre Zeit Conference (October 1974).

The political changes in Ethiopia delayed the recruitment of a research team. Since Haile Sellassie I University was closed and all students and faculty members posted to rural areas, it was not until December of 1974 that Dr. Tesfai Tecele was able to devote full time to the Ada research. In January 1975 Ato Yacob Fisseha was transferred from Alemaya to the project in Debre Zeit. Shortly thereafter three Ethiopian university students were permitted to join the IDR research team in lieu of serving in rural areas as members of the Zemetcha campaign.

Two Ethiopian doctoral candidates in the United States--Ato Gebremicael Menghistu (University of Wisconsin) and Woizerit Salome Gebregziabher (Michigan State University)--decided in early 1975 not to return to the Ada project to collect data for their Ph.D. dissertations because of the uncertain political climate.

The IDR research team which was finally assembled for the Ada research was as follows for the 1974/75 reporting period:

1. Dr. Trimble R. Hedges, MSU faculty and Project Coordinator;
2. Dr. Tesfai Tecele, Research Fellow, Institute of Development Research;
3. Ato Kifle Negash;
4. Ato Argaw Kebede, M.S. Candidate from the University of Nairobi;
5. Mr. Russell Parker, MSU graduate agricultural engineer under USAID contract to the Ada District Development Unit but on detachment to the IDR project in Debre Zeit. He is conducting the small-scale industry study in the project;

6. Three university students excused from the Zemetcha campaign to serve as field supervisors on the project;
7. An IDR junior staff member supervising the data coding;
8. Two persons working as data coders;
9. Five enumerators on the small-scale industry study and eight enumerators on the farm level study;
10. Two secretaries;
11. One jeep driver;
12. One cleaning woman.

Review of the Methodology

In October 1974 the research objectives were written to focus on farm level consumption and production activities in households that were studied in any earlier baseline study with the hypothesis that impacts of development projects on families in the Ada District could be measured.

In February 1975 as a sample of the baseline study respondents were drawn to represent three service centers that were under USAID projects' influence (Denkaka - 01, Dire - 02 and Godino - 03) and two service centers that were not (Gongo - 04 and Yilmo - 05). Yilmo and all its records were lost during the civil disturbance.

In March and April a stock questionnaire was filled out on 119 households in the four active service centers. This questionnaire established the resource base for each household and repeated some questions asked on the original baseline study.

The household identification in the current study with the corresponding baseline study (BL) identification is shown on the following page by service centers:

Service Center

<u>01</u>	<u>02</u>	<u>03</u>	<u>04</u>
<u>Current - BL</u>	<u>Current - BL</u>	<u>Current - BL</u>	<u>Current - BL</u>
01 - 263	01 - 118	01 - 605	01 - 300
02 - 241	02 - 117**	02 - 627	02 - 419
03 - 275	03 - 131	03 - 626**	03 - 493
04 - 283	04 - 497	04 - 636	04 - 494
05 - 281	05 - 137	05 - 647	05 - 108
06 - 245	06 - 143	06 - 517	06 - 423
07 - 284	07 - 142	07 - 618	07 - 380
08 - 258	08 - 130	08 - 524	08 - 383
09 - 274	09 - 164	09 - 639	09 - 310
10 - 254	10 - 176	10 - 526	10 - 367
11 - 257	11 - 120	11 - 602	11 - 307**
12 - 288	12 - 201	12 - 642	12 - 309
13 - 242	13 - 501	13 - 539	13 - 369
14 - 247	14 - 129	14 - 527	14 - 302
15 - 253	15 - 208	15 - 537	15 - 297
16 - 273	16 - 166	16 - 612	16 - 365
17 - 262	17 - 114	17 - 525	17 - 371
18 - 259	18 - 116	18 - 611	18 - 312
19 - 243	19 - 202	19 - 540	19 - 364
20 - 234	20 - 152	20 - 619	20 - 377*
21 - 237	21 - 151	21 - 646	21 - 381
22 - 238*	22 - 162	22 - 515	22 - 424
23 - 251	23 - 503	23 - 635	23 - 370
24 - 228	24 - 154	24 - 516*	24 - 110
25 - 249	25 - 158	25 - 604	25 - 099
26 - 239	26 - 115	26 - 536	26 - 301
27 - 227	27 - 144	27 - 637	27 - 382
28 - 248	28 - 204	28 - 624	28 - 101
29 - 282	29 - 133	29 - 601	29 - 107
30 - ***	30 - 150	30 - 513*	30 - 374*

* Current dropout

** No stock questionnaire, but flow questionnaire is available

*** No stock questionnaire; No flow questionnaire

The collection of "flow data" on the basis of a weekly interview began during the week of April 21. However, it was the week of June 9 before all service center work was operational, as shown below.

<u>Week No.</u>	<u>Beginning</u>	<u>Service Center</u>				<u>Total</u>
		<u>01</u>	<u>02</u>	<u>03</u>	<u>04</u>	
16 -	April 21	28	0	0	0	28
17 -	April 28	28	15	0	0	43
18 -	May 5	28	15	0	0	43
19 -	May 12	28	30	12	0	70
20 -	May 19	28	30	12	28	98
21 -	May 26	28	30	12	28	98
22 -	June 2	28	30	12	28	98
23 -	June 9	28	30	28	28	114
24 -	June 16	28	30	28	28	114
25 -	June 23	28	30	28	28	114

There has been one "dropout" in each service center except Dire: No. 22 in Denkaka (No. 30 was a non-response not replaced in Stock Survey) Number 24 and 30 in Godino and Number 20 and 30 in Gongo. This is a very good response. It would seem to assure at least 100 completions at time of survey termination.

In August 1975 a reconnaissance survey was conducted in six villages to identify number and kind of small scale industries there. This work has been under the direction of Mr. Russell Parker. The findings (over-generalized) are as follows:

Location

<u>Industry</u>	<u>D.Z.</u>	<u>Mojo</u>	<u>Dukem</u>	<u>Godino</u>	<u>Dire</u>	<u>Gongo</u>	<u>Total</u>
Oil Mill	3	1	0	0	0	0	4
House Vehicle Repair	3	0	0	0	0	0	3
Welding/metal work	3	0	0	0	0	0	3
Blacksmith	3	3	1	4	0	0	11
Wood Working	12	2	1	2	0	0	17
Weavers	97	43	23	6	0	0	149
Flour mill	14	7	8	3	1	1	34
Leather work	22	4	2	0	0	0	28
Thread maker	0	5	0	0	0	0	5
Retail & Service	296	159	68	27	8	5	563
Other Small Scale	<u>493</u>	<u>620</u>	<u>315</u>	<u>109</u>	<u>56</u>	<u>36</u>	<u>1629</u>
Total	926	844	418	151	65	42	2446

Nine different industry types were identified for further study. There were 142 stock questionnaires administered for these industry type. subsequently, a sample of 78 firms representing 7 industry types were drawn for study by interview at least twice weekly. See below:

Stock and Flow Survey Samples

<u>Industry</u>	<u>D.Z.</u>		<u>Mojo</u>		<u>Dukem</u>		<u>Godino</u>		<u>Dire</u>		<u>Gongo</u>		<u>Total</u>	
	<u>S</u>	<u>F</u>	<u>S</u>	<u>F</u>	<u>S</u>	<u>F</u>	<u>S</u>	<u>F</u>	<u>S</u>	<u>F</u>	<u>S</u>	<u>F</u>	<u>S</u>	<u>F</u>
Oil Mill	3	0	1	0	0	0	0	0	0	0	0	0	4	0
House Veh. Repair	3	3	0	0	0	0	0	0	0	0	0	0	3	3
Welding/metal work	3	3	0	0	0	0	0	0	0	0	0	0	3	3
Blacksmith	3	3	3	2	1	1	0	4	0	0	0	0	11	5
Wood working	12	7	2	2	1	1	2	0	0	0	0	0	17	10
Weavers	20	8	14	4	8	3	6	0	0	0	0	0	48	15
Flour mill*	14	14	7	7	8	8	3	1	1	1	1	1	34	32
Leather work	11	6	4	2	2	2	0	0	0	0	0	0	17	10
Thread maker	<u>0</u>	<u>0</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>5</u>	<u>0</u>
Total	69	44	36	17	20	14	15	1	1	1	1	1	142	78

*includes both firms supplying complete and partial flow data

4. Data Processing: A 96 column card punch/verifier was rented from the IBM outlet in Addis Ababa. It is positioned in Debre Zeit and the punch operator has been working since August of 1975.

The farm level stock questionnaire has been punched and verified. Flow data for the period April 21 through May 24 had been punched but not verified.

Magnetic tape has been ordered but not delivered. Arrangements were made through IDR for tape processing at the Central Statistical Office. The total expected card production is as follows:

a. Farm Level Card Punching & Verifying

(1) Number of cards

- (a) Stock Questionnaire cards: 5208
 (b) Flow estimate by week

<u>Week</u>	<u>Households</u>	<u>Cards</u>
16	28	515
17-18	43	1883
19	70	1932
20, 21, 22	98	7309
23 - 52	114	80712
53 - 65	114	<u>32286</u>
	Total	124637
		129,845

This assumes 50 weeks of data collection.

b. Small Scale Industry card punching & verifying

(1) Number of cards (estimate)

Recon. study	4892
Stock Questionnaire	3763
Flow questionnaire	<u>57798</u>
Total	66,453

This assumes 19 weeks of data collection.

Tapes will be prepared in Addis Ababa and duplicated for use at MSU. The USAID office has agreed to send processed tapes using the diplomatic pouch.

The CSO tape drives are characterized as 9 track, odd parity written in 8-bit EBCDIC code without labels. With a choice of either 800 or 1600 BPI density, the 800 BPI has been recommended. Full explanation of blocking technique to be used has been requested.

The plan is to complete input/output data collection in April of 1976 and to process the data and prepare a final report on the Ada research by December of 1976. There are no current plans to continue the Ada research beyond December of 1976.

C. Primary Data Collection and Processing in Nigeria

The research in Nigeria has been conducted by a Nigerian research team under the direction of Professor S. O. Olayide, Chairman, Department of Agricultural Economics, University of Ibadan.

The research has focused on collection of input/output data in the Kwara State of Nigeria. The research has been mainly financed through Rockefeller Foundation Grants to the University of Ibadan and a \$24,038 sub-contract under the general terms of AID/csd 3625.

IV. DISSEMINATION AND UTILIZATION OF RESEARCH RESULTS

Research results continue to be released as quickly as they become available in the form of Working Papers and African Rural Employment Papers. Four-hundred copies of each Working Paper are published and released to a mailing list of 140 key researchers and decision makers interested in employment problems.

African Rural Employment Papers are automatically distributed to a mailing list of 1,600 in over 70 countries. Between 2,000 and 2,500 copies of each African Rural Employment Paper are published.

The publications for the 1974/75 reporting year are as follows.

Publications, 1974/75

- Byerlee, Derek. 1974. "Employment Impacts of Rural Consumption Patterns: Progress Report," paper presented to Conference of Rural Employment Research Project, Ethiopia.
- Byerlee, Derek and Joseph Tommy. 1975. "An Integrated Methodology for Research on Migration: The Sierra Leone Rural-Urban Migration Survey," paper for Conference on Migration, Ife, Nigeria.
- Chuta, Enyinna and Carl Liedholm. 1974. "A Progress Report on Research on Rural Small Scale Industry in Sierra Leone," African Rural Employment Working Paper No. 4, Department of Agricultural Economics, Michigan State University, East Lansing, Michigan, November.
- Chuta, Enyinna and Carl Liedholm. 1975. "The Role of Small Scale Industry in Employment Generation and Rural Development: Initial Research Results from Sierra Leone," African Rural Employment Paper No. 11, Department of Agricultural Economics, Michigan State University, East Lansing, Michigan.
- de Haen, Hartwig; Derek Byerlee and Dunstan S. C. Spencer. 1974. "Preliminary Formulations of Policy Models of the Sierra Leone Economy Emphasizing the Rural Sector," African Rural Employment Working Paper No. 3, Department of Agricultural Economics, Michigan State University, East Lansing, Michigan, November.
- Linsemeyer, Dean. 1975. "Economic Analysis of Sierra Leone Marine Fisheries Industry: Some Preliminary Findings," paper presented to Conference of Sierra Leone Agricultural Surveys.
- May-Parker, Ibi. 1974. "The Distribution of Small Rice Mills in Sierra Leone," paper presented at the Conference of the Rural Employment Research Project, Ethiopia.
- "Plan of Work for the IDR/MSU Research Program in the Ada District of Ethiopia," African Rural Employment Working Paper No. 5, Department of Agricultural Economics, Michigan State University, East Lansing, Michigan, November.
- Spencer, Dunstan S. C. 1974. "Collecting Primary Socio-Economic Data in Africa: Some Experiences from Sierra Leone," paper prepared for the ADC/CIMMYT/Ford Foundation Seminar on Field Collection of Socio-Economic Data in Developing Countries, Beirut, Lebanon, December.
- Spencer, Dunstan S. C. 1974. "The Impact of Large Tractor Mechanization on Rice Production and Employment in Sierra Leone: Some Preliminary Findings," paper presented at the Fourth Annual Conference of the Sierra Leone Agricultural Society, Port Loko, Sierra Leone.
- Spencer, Dunstan S. C. 1974. "Some Characteristics of Sample Households on the Farm Level Study of the Rural Employment Research Project--Sierra Leone," paper presented at the Rural Employment Research Network Conference, Ethiopia.

- Spencer, Dunstan S. C. 1975. "The Economics of Rice Production in Sierra Leone; I. Upland Rice," Bulletin No. 1, Department of Agricultural Economics and Extension, Njala University College, Njala, Sierra Leone, March.
- Spencer, Dunstan S. C. 1975. "The Economics of Rice Production in Sierra Leone; II. Mangrove Swamp Rice," Bulletin No. 2, Department of Agricultural Economics and Extension, Njala University College, Njala, Sierra Leone, June.
- Tollens, Eric F. 1975. "Problems of Micro-Economic Data Collection on Farms in Northern Zaire," African Rural Employment Working Paper No. 7, Department of Agricultural Economics, Michigan State University, East Lansing, Michigan, June.
- Ward, William A. 1975. "Incorporating Employment into Agricultural Project Appraisal: A Preliminary Report," African Rural Employment Working Paper No. 6, Department of Agricultural Economics, Michigan State University, East Lansing, Michigan, February.

V. WORK PLAN

- A. OUTLINE OF FINAL REPORT: Rural Employment in Tropical Africa: A Network Approach (AID/csd 3625)

Authors: Byerlee, Eicher and Spencer

I. Introduction

A. Definition of the Problem

Historical Background

- Dimensions of the Problem - efficiency
 - equity
 - socio-political

B. Research Objectives

C. Overall Framework for the Research

- Essential micro and macro interrelationships
- Importance of micro-data collection
- Labour in relation to other factors of product
- Employment in relation to other development goals
- The comparative approach

D. Sources of Data

Outline of surveys in Sierra Leone, Ethiopia, Nigeria, and Ghana

II. Rural Labour Utilization and the Rural Labor Market

A. Aggregate labour utilization

B. Sex and age roles in rural labour utilization

C. Seasonal patterns of labour use

D. Farm vs. nonfarm allocation of labour

E. Extent of hired labour use--reciprocal and commercial hiring of labor

F. Wage rates--variation by region, sex and season

III. Analysis of Employment and Output in Farm Production: The Effect of Choice of Technique

A. Choice of Technique

1. Competition between food and export crops

- Tree crop production in Sierra Leone
- Cotton and groundnut production in Northern Nigeria

2. The Mechanization Issue

- Large tractors and power tillers in Sierra Leone
- Large tractors and combine harvesters in Ghana
- Trawlers and small boats in Sierra Leone marine fisheries
- Research in progress--animal traction in Ethiopia

3. The package of improved practices

- Fertilizers, improved seed and water control in Sierra Leone inland swamps
- Minimum package and intensive projects in Ethiopia

B. Policy issues in promoting development of the agricultural sector.

- IV. Efficiency, Employment and Income Distribution in Agricultural Processing Industries
 - A. Techniques of rice milling
 - B. Direct and indirect effects of the choice of technique
 - Output effects
 - Employment effects
 - Income distribution effects
 - C. The effect of factor price distortions in the choice of technique
 - The Sierra Leone case
 - The Ghanaian case
 - D. Policy issues in development of agricultural processing industries
- V. The Role of Small Scale Industries in Employment and Rural Development
 - Descriptive profile
 - Demand for small scale industrial output
 - Choice of technique and the demand for labour
 - Constraints on the supply side
 - Policy implications
- VI. Rural-Urban Migration: Determinants and Policy Implications
 - A. Description of migrants' characteristics and migration process
 - B. Comparison of rural-urban, rural-rural, urban-rural and non-migrants
 - C. Analysis of the decision to migrate
 - D. Determinants of rates of migration
 - E. Magnitude and uses of rural-urban remittances
 - F. Evaluation of policies toward rural-urban migration
- VII. Employment and Locational Impacts of Rural Consumption Patterns
 - A. Rural consumption by income and rural, urban, imported origin
 - B. Estimation of income elasticities
 - C. Estimation of capital intensities of rural consumption patterns
- VIII. Macro-Economic Analysis of Output, Income and Employment in the Rural Economy
 - A. Intra-rural and rural-urban linkages
 - B. Review of agricultural and rural sector modeling procedures
 - C. Overview of the Sierra Leone and Nigerian models
 - D. Results of policy runs
 - E. Policy recommendations
- IX. Summary of Policy Recommendations
 - A. Specific policy recommendations for each sector: agriculture, small-scale industries, processing
 - B. National policy recommendations, e.g., wages, import duties, price strategies

- X. Toward Improved Methodology for Analysing Employment in Project and Sector Analysis
 - A. Methodology for micro-level data collection in rural areas
 - B. Guidelines for improving project appraisal techniques
 - C. Methodologies for evaluating employment as a goal of rural sector planning

B. OUTLINES OF SIERRA LEONE MONOGRAPHSFarm Level Study
African Rural Employment Paper

Title: "Micro-Analysis of Output, Incomes and Resource Use in Agricultural Production in a West African Economy with Particular Emphasis on Employment"

Authors: Dunstan S. C. Spencer and Derek Byerlee

Contents:

1. Introduction
 - The importance of the rural economy
 - Rural development and the employment problem
 - The policy issues--choice of technology and its effect on output, employment, income and its distribution
2. Source of data
 - The need for collection of primary micro data
 - Constructing rural resource regions in Sierra Leone
 - Selecting the sample of rural households
 - Collecting primary data from rural households
3. Constructing representative farm budgets using labor/output, capital/output and labor/capital ratios
4. Labor use
 - a. The stock of different types of family labor by resource region
 - Adult male labor
 - Adult female labor
 - Child labor
 - b. Seasonal differences in quantity and type of family and hired labor utilization in farm and nonfarm activities
 - Intra and inter-regional differences
 - Food and export crop competition
 - c. Seasonal differences in rural wage rates
 - Inter and intra-regional differences

- d. Direct effects of technology on labor utilization
 - The use of the package of fertilizer, improved seed and water control in swamp rice farming
 - The use of partial mechanization
 - i. Tractor hire services
 - ii. Power tillers
 - e. Cost of hired labor
5. Land use
- a. Size of farm and enterprise combinations
 - Intra and inter-regional differences
 - b. Land costs
 - c. Factors affecting farm size
 - Regression analysis to determine
 - i. Effect of household size
 - ii. Effect of composition of household
 - iii. Effect of technology
6. Capital use
- a. Investment in farm and non-farm tools and equipment
 - Inter and intra-regional differences
 - Effect of technology
 - b. Use of working capital
 - Cost of working capital
 - Effect of technology on working capital needs
7. Use of other inputs and their costs
- Fertilizer
 - Seed
8. Output
- a. Type, quantity and value of farm and nonfarm output
 - Inter and intra-regional differences
 - Seasonal differences
 - Effect of technology
 - Disposal of output
 - i. Home consumption
 - ii. Sales and gifts by destination

9. Returns

a. Returns to family labor

Inter and intra-regional differences

b. Household income and its distribution

Farm income

Non-farm income

c. Relative importance of factors affecting household income

Prices received

Crops and livestock produced and technology used

Non-farm activities

Source of Data: Questionnaires F-2, F-3,...F-8

Analytical Techniques: Budgets
Regression analysis

Consumption
African Rural Employment Paper

Title: "Employment and Locational Impacts of Rural Consumption Patterns"

Authors: Derek Byerlee and Dunstan S. C. Spencer

Contents:

- I. Basic hypotheses
Higher income households consume more capital intensive and urban/import oriented consumption goods
- II. Survey methodology
Sample
Interview procedure
Estimation of subsistence consumption
- III. Descriptive profile of rural consumer demands
Disaggregation by location of origin--subsistence, rural, urban, imported
Disaggregation by relative capital intensity
- IV. Estimation of income elasticities
Effect of income on demand for labour intensive and rurally produced goods and services
Direct and indirect employment effects of rural consumption patterns
- V. Conclusions

Rice Processing
African Rural Employment Paper

- A. Title: Efficiency, Employment and Income Distribution in the Rice Milling Industry of a West African Economy
- B. Authors: Ibi May-Parker and Dunstan S. C. Spencer
- C. Contents:
1. Introduction
 - The importance of rice in West Africa
 - The importance of rice in the economy of Sierra Leone
 - The importance of the rice milling industry
 - The policy issues
 2. Description of the different rice processing techniques
 - Hand pounding
 - Small rice mills: steel cylinder and rubber roller
 - Large rice mills
 3. Present regional dispersion of the different techniques and relative importance of each technique in Sierra Leone
 4. Input/output relationships for the different techniques and factors affecting the efficiency of each technique
 - a. Labor utilization
 - Total quantity
 - Sex and age differentiation of labor utilization
 - Cost of labor
 - Labor-output relationship for each technique
 - b. Capital investment
 - Total quantity by type of technique
 - Source of capital
 - Cost of capital
 - Capital-output relationships
 - c. Technical efficiency of each system
 - Milling-out percentages
 - Percentage broken

5. Direct and indirect effects of the choice of technique on the economy
 - a. Description of the analytical model
 - The advantages of using mixed integer programming
 - Specification of regional demand and supply constraints
 - b. The derivation of shadow prices
 - c. Financial analysis using the programming model
 - Output effects
 - Employment effects
 - Income distribution effects
 - d. Economic analysis using the programming model
 - Output effects
 - Employment effects
 - Income distribution effects
6. Conclusion: The implications for policy in West Africa

D. Source of Data:

For hand pounding: Questionnaires F.3 and F.9

For small mills: Questionnaires ML-1, ML-2 and ML-3

For large mills: Published secondary information

E. Analytical tools

Budgeting

Regression analysis

Mixed inter linear programming

Migration
African Rural Employment Paper

Title: "Rural-Urban Migration in Sierra Leone: Determinants and Policy Implications:

Authors: Derek Byerlee and Joseph L. Tommy

Contents:

- I. Introduction
 - A. Nature of the problem--rates of migration, concentration in large cities, selection of young and educated
 - B. Review of previous research--deficiencies with respect to research methodology and economic variables
 - C. Theoretical framework of the decision to migrate

- II. An integrated methodology for migration research
 - Integration with farm management surveys
 - Advantages of both rural and urban surveys
 - Tracing of migrants
 - Interdisciplinary

- III. Description of migrant characteristics and the migration process
 - Characteristics of rural-urban, urban-rural, rural-rural migrants and nonmigrants
 - Comparative rates of migration
 - Migration process--moving to town
 - Settling in town and obtaining a job
 - Migration and unemployment
 - Return migration--who, why and of what consequence

- IV. Determinants of rates of migration
 - Discriminant analysis of the decision to migrate
 - Regression analysis of migration streams with respect to incomes, distance, etc.
 - Estimation of the elasticity of migration with respect to rural urban incomes

V. Rural-urban remittances and capital transfers

Magnitude and implications of remittances

Determinants of remittances

Economic consequences

The decision to educate

Measurement of net capital transfers

VI. Analysis of migrants and nonmigrants attitudes and expectations

Attitudes to town life, education, occupations, etc.

Expectations with respect to employment and income

VII. Policy recommendations

Rural incomes policy

Urban wage policy

Investment strategy (e.g., location)

Educational policy

Social amenities

Small Scale Industry
Outline for African Rural Employment Paper

Title: "Economic Analysis of the Small Scale Industrial Subsector of Sierra Leone"

Authors: Chuta, E. J. and Leidholm, Carl

Contents:

I. Introduction

Purpose: To describe and analyse urban and rural small scale industry in Sierra Leone

II. Descriptive profile of small scale industry in Sierra Leone

- A. Relative importance of small scale industry within the Sierra Leone economy based on value-added figures computed from survey data
- B. Seasonal nature of small scale industry--index of monthly variation of output by industry and location
- C. Comparison of the composition of capital by type (inventories, tools and equipment and building), by industry and location
- D. Comparison of initial capital requirements by industry, size of firm, location, across sectors and developing countries
- E. Comparison of excess capacity by industry and location, size of firm, and across other sectors and countries
- F. Comparison of the rate of return to capital by industry, size of firm, location and across sectors and countries
- G. Comparison of capital productivity by industry, size of firm and location, and across sectors and countries--estimates of capital-output ratios of various firms.
- H. Comparison of labor productivity by industry, size of firm and location, across sectors and countries--estimates of labor-output ratios based on survey data
- I. Comparison of capital-labor ratios by industry, size of firm and location, across sectors and countries
- J. Comparison of entrepreneurial characteristics such as age, education, experience, training etc. by industry and location--comparison between Sierra Leone and other developing countries

III. Analysis of major determinants of the demand for and supply of labor and output in small scale industry

- A. Demand for products of small scale industry
 - 1. Demand by rural households--estimates of income elasticity of demand based on the analysis of the consumption study data
 - 2. Intermediate demand--estimates derived from the input-output table
 - 3. Urban and export demand--information obtained from secondary data and survey data
 - B. Estimates of demand for labor in small scale industry
 - 1. Estimates using activity/linear programming analysis by industry and location
 - 2. Estimates using various neoclassical production functions by industry and location
 - C. Estimates of supply of labor in small scale industry
 - 1. Estimates of supply of different categories of labor using linear programming analysis by industry and location
 - 2. Estimates of rural labor supply derived from neoclassical and linear programming models of farms-nonfarm interaction
 - 3. Estimates of major determinants of the supply of entrepreneurs using X^2 tests and regression analysis
- IV. Policy implicationf of research
- A. Evaluation of policies specifically directed as small scale industry
 - 1. Credit schemes for small scale industry
 - 2. Training schemes (management and vocational)
 - B. Evaluation of policies indirectly influencing small scale industry
 - 1. Wage policy
 - 2. Monetary policy
 - 3. Fiscal policy
 - 4. Agricultural policies
 - 5. Industrial policies relating to large-scale firms
 - C. Policy recommendations

Marine Fisheries Study
African Rural Employment Paper

Title: "Economic Analysis of Alternative Technologies in Sierra Leone Marine Fisheries"

Author: Dean Linsenmeyer

Contents:

- I. Introduction
 - A. Role of fisheries in the Sierra Leone economy
 - B. Policy issues facing fisheries development
 - C. Objectives of the study
- II. Micro-economic analysis of marine fisheries production and processing
 - A. Description of representative firms
 - B. Labour utilization: statistics computed and hypothesis tested
 - C. Capital utilization: statistics computed and hypothesis tested
 - D. Output
 - E. Income derived from alternative sources
 - F. Capital-labour substitution among alternative technologies
- III. An aggregate model of fisheries subsector
 - A. Smoked and frozen fish marketing channels
 - B. Description of aggregate model
 - C. Implications of comparative investment strategies
- IV. Policy implications
 - A. Credit policy and the role of financial institutions
 - B. Fisheries extension policy
 - C. Foreign trade policy
- V. Summary and conclusions

Analytical Techniques: Regression analysis
Linear programming

Overall Policy Analysis
African Rural Employment Paper

Title: "Macro-Economic Analysis of Output, Employment and Incomes in the Rural Economy"

Authors:

Contents:

- I. The policy issues
 - Agricultural priority
 - Location and design of integrated agricultural projects
 - Food self sufficiency
 - Urban unemployment, rural-urban migration and rural employment
 - Income distribution
 - Mechanization

- II. Role of intersectoral linkages in analysing employment, output and incomes in the rural income
 - Backward and forward linkages of agriculture to small scale industry and agricultural processing
 - Role of food and export prices in supply and demand for agriculture and in income distribution
 - Labour transfers between farm and nonfarm in the rural sector, between rural sectors and rural-urban sectors

- III. Choice and structure of policy models
 - Choice of model type--consistency, equilibrium, simulation
 - General structure of policy models
 - Aggregate micro-model
 - Multisectoral macro-model
 - Demographic migration model
 - Relationships between models

- IV. The aggregate micro-model of the rural economy
 - A. The activities
 - Region specific agricultural production activities
 - Region specific agricultural processing activities
 - Region specific fish production activities
 - Region specific rural small scale industries
 - Region specific small urban scale industries
 - Region specific large urban scale industries

Inter-regional transportation of intermediate goods
 Inter-regional transportation of final goods
 Inter-regional transfer of labor (migration)
 Agricultural export activities
 Food import activities
 Input import activities
 Financing activities

B. The constraints

Farm specific regional and non-regional resources
 Processing specific regional and non-regional resources
 Fishing specific regional and non-regional resources
 Small scale industries specific regional and non-regional
 resources
 Common regional rural resources
 Common regional urban rural resources
 Common national resources
 Regional balances of unprocessed food
 Regional balances of processed food
 Regional food demand (rural + urban)
 Regional balances for S.S.I. goods
 Regional demand for S.S.I. goods
 Agricultural export constraints
 Import constraints
 Migration constraints

V. Demographic-migration model

A. Demographic model

Structure of model
 Estimation of parameters

B. Migration model

Rural-urban migration
 Rural-rural migration
 Estimation of parameters

C. Integration of demographic and migration components

D. Projections of population and migration under alternative assumptions

VI. Multisectoral macro-model

A. Sectoral disaggregation

By rural, small urban, large urban
By size of firm, e.g., small-scale industries vs.
large manufacturing

B. Structure of the model

Input-output table
Savings and consumption functions
Investment
Import and export balance
Foreign exchange constraints
Urban employment and unemployment equations
National and sectoral accounting

C. Source of data

Primary sources
Secondary sources

D. Model application

Linkages with other models
Policy experiments
Investment allocation
Import and export policy
Wage policy
Pricing policies

VII. Summary of policy recommendations

Methodology
African Rural Employment Paper

Title: "Collecting Meaningful Socio-Economic Data in Rural Areas of Less Developed Countries: Lessons from the African Rural Employment Research Project"

Authors: Dunstan Spencer and Field Research Team

Contents:

1. Introduction
Objectives
The need for collecting primary data
2. A brief review of alternative techniques for collecting primary data
3. The African Rural Employment Research Project

The objectives and data needs
The studies conducted
An integrated approach
4. Sampling procedures

The need for area sampling
The sample frame
The sample size
5. Collecting labor input data

Factors determining choice of procedure
Availability of written records
Tests of memory lapse of respondents
Complexity of farming systems
Labor input units required
6. Collecting land use data

Direct measurement vs. interview
Direct measurement techniques
7. Collecting capital input data

Estimating the stock of capital
Converting stocks to flows

8. Collecting output data
 - Yield plot techniques
 - End of year estimates
 - Bi-weekly questionnaires
 - The problem of work in progress
 - Tests of the relative accuracy of each method
9. Recruiting, training and supervising enumerators
 - Source of enumerators
 - Training of enumerators
 - Keeping enumerators effective and on the job
10. Ensuring respondent cooperation
11. Coding and data management
 - The coders
 - Checking data
12. Special problems of tracer studies
 - Locating migrants
 - Ensuring representativeness of sample
13. Summary and conclusions

C. ETHIOPIA

Since the research in Ethiopia is funded by USAID/Addis from July 1975 through December 1976 the following plan of work covers the above eighteen-month period. Research in Ethiopia was carried out from June 1974 through July 1975 under AID/csd 3625. Michigan State University was the primary contractor and the IDR was a sub-contractor. On July 1, 1975, the USAID Mission to Ethiopia assumed the responsibility for financing the Ada research under a direct contract with the IDR while MSU became a sub-contractor with the IDR for the July 1975 through December 1976 period.

The collection of micro-level data will be continued on a weekly basis from farmers in the four service centers. The collection of these data will be terminated at the end of the harvest season--e.g., late February or early March of 1976. At this time a wrap-up questionnaire will be administered to repeat some questions asked on the stock questionnaire and to obtain needed supplementary information.

The small scale industry study will be continued until December 1975. Beginning in early 1976 supplementary studies will be initiated to examine some specific engineering and economic problems identified in the initial flow data period.

Professor Vincent will spend October 1975 and two weeks in February 1976 in Ethiopia on the project.

The research program will be modified to take into account the formation of farmer associations. Three lines of inquiry will be pursued: (a) a special questionnaire will be administered to the 47 farmer associations represented by the 114 respondents in the Ada District; (b) a special questionnaire will be administered to the 114 respondents in order to

determine their relationships with the farmer associations and (c) a special questionnaire will be administered for the ADDU project. ADDU is the agency responsible for channelling tractor services, seed, fertilizer and agricultural credit to the farmer associations. The study of farmer associations will be carried out by Kifle Negash prior to his arrival as a graduate student at MSU.

An African Rural Employment Paper by Tesfai Teclé, "The Evolution of Alternative Rural Development Strategies in Ethiopia: Implications for Employment and Income Distribution," will be prepared in late 1975.

The data processing time table is as follows:

1. It is recommended that IDR contract with CSO for card verification. Given the late start, there is inadequate time to do all necessary data processing before Dr. Hedges leaves at the end of April without supplemental assistance. Outside verification should continue until punching is not more than two weeks from data collection.
2. The stock data should be loaded on tape with a duplicate copy sent to MSU by the end of 1975.
3. The IDR will prepare a working tape for MSU which draws together all available information on the 114 families from the baseline survey.
4. Collating baseline and stock data should be underway by January 1976.
5. The first three months of flow data should likewise be ready for editing and preliminary processing in early 1976.
6. Field data processing will be completed by the end of April 1976.
7. The contract calls for the completion of a final report by the end of 1976. The original work plan provided for Dr. Tesfai coming to MSU, working with the data here and providing leadership for the report preparation. Since Dr. Tesfai is no longer with the project, the responsibility for preparing the final report will be assumed by Professor Vincent and four Ethiopian graduate students in MSU's Department of Agricultural Economics: Yacob Fisseha, Girma Begashaw, Kifle Negash and possibly Kassahun Abebe. Supplementary funding will have to be secured to pay for the salary of Professor Vincent and the Ethiopian graduate students.

D. NIGERIA

The research results of the University of Ibadan team will be incorporated into the final report for AID/csd 3625.

E. GENERAL

A graduate research assistant who is fluent in French--Rob King-- has joined the project in order to review the recent literature on employment in Africa in order that the final report will cover tropical Africa. Although the main emphasis in the final report will be devoted to reporting the primary data collected in Sierra Leone, Ghana, Nigeria and Ethiopia, there is considerable research in Kenya, Tanzania, Zaire, etc. which will be incorporated in the final report.

F. PROPOSED BUDGET

BUDGET

M.S.U. African Rural Employment Network
Contract AID/csd 3625

Period June 30, 1972, through June 30, 1976

Line Items	Summary 6-30-72 to 3-31-75	4-1-75 to 6-30-75	Summary Total 6-30-72 to 6-30-75	7-1-75 to 6-30-76	4-1-75 to 6-30-76	Summary Grand Total 6-30-72 to 6-30-76
Salaries	\$190,406	\$ 32,200	\$222,606	\$ 63,650	\$ 95,850	\$286,256
Consultants	7,050	---	7,050	500	500	7,550
Fringe Benefits	22,145	4,830	26,975	9,547	14,377	36,522
Overhead	100,209	15,067	115,276	40,100	55,167	155,376
Travel/ Transportation	71,271	21,541	92,812	9,739	31,280	102,551
Conferences	20,500	---	20,500	---	---	20,500
Allowances	12,049	4,381	16,430	---	4,381	16,430
Other Direct Costs	41,446	11,850	53,296	22,130	33,980	75,426
Equipment	2,295	---	2,295	---	---	2,295
Sub-Contracts	115,018	29,547	144,565	---	29,547	144,565
TOTAL	\$582,389	\$119,416	\$701,805	\$145,666	\$265,082	\$847,471

APPENDIX A

AFRICAN RURAL EMPLOYMENT RESEARCH NETWORK

1974 ANNUAL CONFERENCE

Debre Zeit, Ethiopia

September 29 - October 4, 1974

REVISED PROGRAMSeptember 28 and 29
(Saturday and Sunday)

Participants arrive in Addis Ababa

September 29
(Sunday)Depart Ethiopia Hotel (Addis Ababa) at 3:00 PM
for bus trip to Debre Zeit.September 30
(Monday)Sierra Leone (9:00 - 12:30 and 2:30 - 5:30 PM)Dr. Dunstan S. C. Spencer - "Progress Report on
Integrated Research"

Preliminary Finding and Future Plans

Dr. Dunstan S. C. Spencer - "Farm Level Study"

Dr. Derek Byerlee - "Consumption Study"

Dr. Carl Liedholm and Mr. Enyinna Chuta -
"Small-Scale Industry"Mr. Ibi May-Parker - "Processing and Marketing
Study"Dr. Dunstan Spencer, Dr. Derek Byerlee and
Dr. Hartwig de Haen - "Rural Economy
Model"

Program

October 1
(Tuesday)

Field Trip to Visit Farmers in the Ada District

<u>Time</u>	<u>Place</u>	<u>Activity</u>
8:00 AM	Debre Zeit	Conference participants arrive at the Ada Project Headquarters
8:00-8:30 AM	Debre Zeit	Project Manager or his designee briefs the participants about the Project
8:30-9:00 AM	Debre Zeit Dire Dawa	Trip to Dire Dawa, one of the Development Centers
9:00-10:00 AM	Dire Dawa	(a) Briefing by extension, credit and home economics agents, and (b) visit deep water well, warehouse and Center Office
10:00-11:00 AM	Dire Dawa Bekejo	Trip to the Bekejo Market Place
11:00-12:00 NOON	Bekejo	Visit the market and interview some farmers
12:00-1:30 PM	Bekejo Debre Zeit	Return to Debre Zeit
1:30-2:30 PM	Debre Zeit	Lunch in Debre Zeit
2:30-3:00 PM	Debre Zeit Denkaka	Trip to Denkaka, another Development Center
3:00-4:00 PM	Denkaka	Visit of research and demonstration plots, talk to a model farmer
4:00-4:30 PM	Denkaka	Meeting with leaders of the cooperative
4:30-5:00 PM	Denkaka Debre Zeit	Return to Debre Zeit

Program

October 1 - Continued
(Tuesday)

Ethiopia

(7:30 PM - Evening)

Chairman: Dr. Assefa Mehretu, Institute of Development Research, Haile Sellassie I University, Addis Ababa, Ethiopia

Dr. Solomon Bekure, Vice Minister, Ministry of Agriculture, Addis Ababa, Ethiopia -
"A Perspective in Ethiopia's Approaches to Rural Development: Implications for Socio-Economic Researchers"

October 2
(Wednesday)

Nigeria

Dr. Olabisi Ogunfowora, Dr. Sunday Essang and Dr. Samson Olayide - "Resource Productivity and Return to Scale in Kwara State Agriculture"

Dr. Sunday Essang and Dr. Olabisi Ogunfowora - "Plantation Agriculture and Labour Use in Southern Nigeria"

Dr. David Norman - "An Assessment of the Cotton Growing Recommendations as Applied by Nigerian Farmers" and "Factors Affecting Cotton Yields Obtained by Nigerian Farmers"

Thailand

Dr. Manu Seetisarn - "Report on Socio-Economic Research on Small Farmers in Northern Thailand Being Undertaken by the Faculty of Agriculture at Chiang Mai University"

Program

October 3
(Thursday)

Ethiopia

Dr. Tesfai Teclé, Research Fellow, Institute of Development Research, Haile Sellassie I University, Addis Ababa, Ethiopia - "Rural Development in Ethiopia: Past, Present and Future"

Ato Solomon Bellette, Agricultural Economics Division, Institute of Agricultural Research, Addis Ababa, Ethiopia - "The Farm Management Research Program of the Institute of Agricultural Research: Objectives, Preliminary Findings and Future Plans"

Dr. Tesfai Teclé and Dr. Assefa Mehretu - "Report on Ada Baseline Survey Carried out by the Institute of Development Research (IDR) in 1973"

Discussion of the IDR/MSU Plan of Work for a Five-Year Study of the Ada District Development Project

Ato Getahun Teckle Medhin
Dr. Trimble R. Hedges
Ato Kifle Negash
Dr. Dunstan Spencer (Consultant)
Dr. Tesfai Teclé
Ato Teweleberan Zerom
Dr. Warren Vincent (Consultant)
Ato Yacob Fisseha

Program

October 3 - Continued
(Thursday)

4:00 PM

Conference Adjourns. Participants depart Debre Zeit by bus for Addis Ababa. Participants will spend Thursday evening at the Ethiopia Hotel in Addis Ababa.

7:30 PM

Traditional Ethiopian Dinner at the Maru Dembia National Dish Restaurant, Addis Ababa

AFRICAN RURAL EMPLOYMENT RESEARCH NETWORK

1974 ANNUAL CONFERENCE

Debre Zeit, Ethiopia
September 29 - October 4, 1974

List of Participants

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Appendix B

BUDGET

M.S.U. African Rural Employment Network
Contract AID/csd 3625

Period June 30, 1972, through June 30, 1976

Line Items	<u>Summary</u> 6-30-72 to 3-31-75	4-1-75 to 6-30-75	<u>Summary</u> <u>Total</u> 6-30-72 to 6-30-75	7-1-75 to 6-30-76	4-1-75 to 6-30-76	<u>Summary</u> <u>Grand</u> <u>Total</u> 6-30-72 to 6-30-76
Salaries	\$190,406	\$ 32,200	\$222,606	\$ 63,650	\$ 95,850	\$286,256
Consultants	7,050	---	7,050	500	500	7,550
Fringe Benefits	22,145	4,830	26,975	9,547	14,377	36,522
Overhead	100,209	15,067	115,276	40,100	55,167	155,376
Travel/ Transportation	71,271	21,541	92,812	9,739	31,280	102,551
Conferences	20,500	---	20,500	---	---	20,500
Allowances	12,049	4,381	16,430	---	4,381	16,430
Other Direct Costs	41,446	11,850	53,296	22,130	33,980	75,426
Equipment	2,295	---	2,295	---	---	2,295
Sub-Contracts	115,018	29,547	144,565	---	29,547	144,565
TOTAL	\$582,389	\$119,416	\$701,805	\$145,666	\$265,082	\$847,471

APPENDIX C

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- _____ Alao, J. A., "Research and Extension Policy for West African Agricultural Development in the 1970s," West African Journal of Agricultural Economics, Bol. II. No. 1, Proceedings 1973, pp. 98-109.
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NAME _____

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- *WP No. 2 Dean Linsenmeyer, "An Economic Analysis of Maize Production in the Kasai Oriental Region of Zaire: A Research Proposal, May 1974.
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