

Baseline Data on the Food Security and Household Income for Smallholder Farmers Research Projects

Volume Three

Research Project Specific Technical Baseline Data

The Food Security and Household Income for Smallholder Farmers
Applied Research with Emphasis on Women
TARP II – SUA Project

June 2002

Prepared by

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PREFACE

This report contains baseline information from the survey that was undertaken at the commencement of activities by all the research projects under the project Food Security and Household Income for Smallholder Farmers in Tanzania (TARP II-SUA Project). As will be elaborated further in the report, the information has been organized in three volumes – the current one (volume one) containing a description of the methodology and a summary of the main findings and their implications, the second one (volume two) containing the complete data set from the survey, and the third one (volume three) containing the sub-project specific technical baseline data.

The baseline survey was undertaken as part of implementation of the TARP II-SUA project. The immediate objective of the project is to develop and put to use “Gender-sensitive and appropriate on-farm technologies for improving food security and household income for smallholder farmers in the Eastern and Southern Highlands zones”. To achieve this objective, the project set out a number of outputs which have to be attained during project implementation, one of which being to assess the impact of the research undertaken by the project. The collection of baseline information was done in order to establish benchmark indicators to be used during impact monitoring and during impact assessment at the end of the project period.

In recognition of the enormity and specialized nature of the activities under this component, the Project Implementation Team (PIT) assigned the tasks under the component to the Impact Assessment Team (IAT) consisting of members from Sokoine University of Agriculture (SUA), Ministry of Agriculture and Food Security (MAFS) and the Agricultural University of Norway (NLH) drawn from the different research subject areas covered by the researches being undertaken.

To equip IAT and PIT with the requisite knowledge to undertake these tasks, a training workshop on Impact Assessment Methodology was organized by PIT in December 2000. The workshop was followed by other two workshops involving project leaders – in January 2001 for the first batch projects (totalling 21) and in September 2001 for the second batch projects (totalling 14). Apart from imparting knowledge on impact assessment to the project leaders prior to the start of their activities, the workshops produced a comprehensive analysis of baseline information requirements under the different thematic areas under which the projects fell. The information was organized into a manual on Baseline Data Collection that has been quite useful in guiding the collection of the information presented in this volume.

This volume provides benchmark indicators for impact monitoring and for impact assessment of the ongoing research projects.

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LIST OF ACRONYMS AND ABBREVIATIONS

CEC	Cation Exchange Capacity
CN ratio	Carbon-Nitrogen ratio
DAT	Draft Animal Power
ECF	East Coast Fever
FHH	Female Head Household
IDM	Integrated Disease Management
KRB	Kilombero River Basin
MAFS	Ministry of Agriculture and Food Security
MHH	Male Headed Household
N	Nitrogen
ND	New Castle Disease
NGO	Non-Government Organization
OC	Organic Carbon
P	Phosphorus
PRA	Participatory Rural Appraisal
RYMV	Rice Yellow Mottle Virus
SUA	Sokoine University of Agriculture
TBD	Tick Borne Disease

ACKNOWLEDGEMENTS

The Project Implementation Team (PIT) of the TARPII - SUA project along with the Impact Assessment Team (IAT) wish to thank all individuals who provided information and ideas during the implementation of these studies. In particular, they appreciate the contributions of all farmers and sub-projects members.

Last but not least acknowledgement is made to all individuals who in one way or another made this task a success. Special thanks go to Mr. N. Madalla, Mr. O. Mtinda and Mr. L. Nyato for technical assistance in preparing this report.

INTRODUCTION

1.1 About the Report

This report forms one part of a series of reports comprising the baseline survey for the TARP II – SUA Project on Food Security and Household Income for Smallholder Farmers. The baseline survey was comprised of two main data collection activities. The first involved the production of Village Profiles for each of the sub-projects where participatory, qualitative data collection methods were employed. These Village Profiles are produced under separate cover by sub-project. The second data collection activity involved an extensive household questionnaire survey where both general and sub-project specific data was collected.

This volume (Volume III) contains sub-project specific technical baseline data giving details on objectives of the survey, the methodology used and results of the work. The current volume is a continuation of Volumes I and II. Volume I gives an overview of the general part of the questionnaire survey giving details on the objectives of the survey, the methodology used and a synthesis of the major findings and implications of the work. The main body of the report is based on aggregate baseline survey data from all of the sub-projects, while some selected data is presented by sub-project for comparison in an appendix. Volume II contains the complete data set from the general questionnaire survey. In all there are 35 sub-projects, which are grouped under 19 thematic areas. Volume II is divided into three parts as follows: general household characteristics, household income, and household food security. .

1.2 Background to the Study

Tanzania Agricultural Research Project Phase Two (TARP II) is a national research project under the Ministry of Agriculture and Food Security (MAFS) with support from various donors. The TARP II component, “Food Security and Household Income for Small-holder Farmers in Tanzania: Applied Research with Emphasis on Women” is a collaborative effort between the Division of Research and Development (DRD) in MAFS, SUA and the Agricultural University of Norway (NLH) with financial support from the Norwegian Government through NORAD. The component is under day-to-day management of SUA and hence referred to as TARP II – SUA Project.

To achieve its main objective (purpose), the TARP II – SUA project set out five outputs that need to be attained during the project implementation period. Among these outputs is assessing impact of the agricultural research under the project. The impact assessment output has the following key activities: (i) study on-farm impact of earlier research (done during the last 20 years); (ii) use existing baseline data and conduct a study on use of farm technology; (iii) conduct an end-line study of impact of the current project; (iv) disseminate findings to the international research community; (v) disseminate findings to extension agents and farmers; and (vi) communicate findings relevant for policy making to the Government of Tanzania and other stakeholders. This report on baseline data contributes to the second and third activity under the output. The study was carried out using the baseline data collection manual produced under the same output through workshops held in January and September 2001.

The major objective of collecting baseline was to obtain information that will form benchmark indicators for impact monitoring during project implementation and for impact assessment of the projects at the end of the project period.

Apart from providing basis for impact assessment of the research, the baseline data along with the process used in its collection serve other useful roles in the ongoing research. The data in Volume II is organized in thematic groupings as described in the manual. This aspect gives the sub-projects opportunity for having comparative perspectives within thematic areas. Furthermore, the baseline information highlights weak and strong areas in the project areas that can be used by the sub-projects to adjust and fine-tune their activities to achieve higher impacts at the end.

1.3 Context of the research

Agricultural research has many outputs including the production of physical agricultural inputs such as improved cultivars, plant protection chemicals, machines, technology software packages such as agronomic practices for improved crop management, and social science research outputs, which include the identification and understanding of the social, institutional and policy context of technical innovation as well as the management of the research process. Development of improved crop varieties is the most well known type of agricultural research. It is among the research topics that have received highest resource allocation both locally and internationally. The research projects under the TARP II – SUA Project, though not covering all these research areas, exhibit the same trend, with research on improved varieties and development of improved production and management systems predominating.

New technology can have a paramount effect on agricultural producers' income and food security. According to an optimistic view of technology, it should lead to improved households' welfare through positive effects on consumers' food prices, producers' income and food security. But technological change may also have unintended effects that influence household welfare negatively. For example increased production reduces the food prices, which translates to lower producer welfare but less expenditure to food buying consumers.

In the context of TARP II - SUA Project, the baseline data is expected to provide a basis against which an assessment will be made on whether the project has contributed to an increase in household income and food security by smallholder farmers, with a particular emphasis on women farmers. Therefore, a better understanding of not only the technological aspects of agricultural production are needed, but also of the entire range of issues embedded in the concept of food security. Food security in this project refers to not only the availability of food through, for example, increases in production, but also women and men's access to food in a wider sense. It thus refers to a broad range of strategies farmers can choose from to ensure sustainable livelihoods which involves the interaction of new technologies with economic, social and political processes. Addressing food security in this program also entails an understanding of and respect for local priorities and perceptions of what a better life might be. The program is thus implemented in ways, which as much as possible promote local participation in the definition, development and assessment of research activities.

1.4 Structure of the report

The report is structured as follows. After this introduction is a section on methodology, which explains the approach, taken when conducting the survey and how the data in section 3 was extracted from the specific sub-projects questionnaires. Section 3 then presents the sub-project specific technical data. Since the purpose of this report is to present the data from the baseline questionnaire survey in a simplified form to serve as a benchmark for impact evaluation no attempt is made to draw any conclusions at this point.

METHODOLOGY

2.1 Sampling

The survey data were collected for each site of the sub-projects. Detailed location of sub-projects by districts and villages where baseline data were collected are provided in the results section of this volume. Most of the sub-projects have at least more than one village site.

Data were collected by sub-project teams in collaboration with a member or members of the IAT, and data for the baseline were collected at the same time as the rest of the specific data needed by the sub-projects

The sample size and definition of the target groups for each of the sub-projects varied significantly according to the type of research being conducted. Some sub-projects used a very limited number of farmers while others used a large number of farmers. Consequently, the sample sizes range from 16 to 160. It was recommended in the baseline manual that only contact farmers be interviewed using the household questionnaire. The total number of households included in the questionnaire survey is 2320.

2.2 Data Collection

Formal household surveys were conducted to collect primary baseline data using questionnaires and project specific techniques as provided in the “Baseline Data Collection Manual”. The Baseline Data Collection Manual” is based on a workshop on Development of Impact Assessment Methodology held from 5-12 December 2000 and a meeting of the TARP II SUA Project Impact Assessment Team (IAT) and Research Project Leaders held from 4-5 January 2001.

The manual was used by research projects and IAT to guide gathering of baseline data which will help to assess the overall impact at the end of the project and beyond. Also, the manual provides an overview of the data collected. In addition to the questionnaire for the overall project level, each research sub-project developed a questionnaire to collect data addressing their needs.

2.3 Data Extraction

The data were extracted from the specific project reports using the format prepared by IAT (Annex 1). Where data was inadequate the project leaders were asked to provide the missing data.

2.4 Data Presentation

The data are presented in the order of project (serial) numbers 1 to 35. For each project information is given on (1) Project number code (010-044), (2) Project title, (3) General objectives and purpose, (4) Specific objectives, (5) Source of quantitative information, and (6) Table(s) of results. The rest of the report therefore contains the project specific database. The database is preceded by tables showing the project code numbers and titles, theme names and a table of contents.

RESULTS

3.1 Research these versus project numbers

Theme No.	Theme Title	Project No.
1	Marketing of Crops;	
2	Marketing of Livestock and Livestock Products;	
3	Dry Season Feeding	
4	Major Livestock Diseases	
5	Evaluation of Crop Varieties	
6	IPM for Major Crop Pests and Diseases	
7	Livestock Management Practices	
8	Post Harvest Losses, Preservation and Storage	
9	Irrigation and Water Harvesting	
10	Processing and Packaging Technologies	
11	Cropping Systems for Female Farmers	
12	Wood-Lots and Improved Fallow for Soil Fertility	
13	Farmer Organizations	
14	Biodiversity	
15	Draft Animal Power	
16	Integrated Plant Nutrient Management	
17	Structural Adjustment of Input Subsidies	
18	Human Nutrition	
19	Soil Tillage	

3.2 Project titles with their code numbers

Project Code	Project Title
010	Commercialisation of cassava root as a source of energy in commercial livestock feeds
011	Soybean (<i>Glycine max</i> (L) Merrill) Variety evaluation for yield potential and utilization as human food in Eastern and Southern Highlands zones of Tanzania
012	Assessment and promotion of rainwater harvesting (RWH) to overcome water shortage for Domestic, livestock and plant growth in the Semi Arid Areas of Njombe District
013	Agroforestry technologies for soil fertility improvement and wood production in semi-arid areas of Morogoro and Iringa, Tanzania
014	Development and dissemination of mushroom cultivation and preservation technologies at household and community levels in the Southern Highlands and Eastern zone, Tanzania
015	Improvement of health and productivity of village chickens by controlling important diseases
016	Optimising milk production and quality in small holder dairy sector through control of mastitis, improved management and reduced post milking microbial contamination
017	Improvement of dry season feeding for small holder dairy production in Southern Highlands of Tanzania
018	Integrated management of witch weed (<i>Striga spp</i>) in sorghum and maize based cropping systems of the Eastern zone.
019	Increasing the developmental value of fruits and vegetables by reducing postharvest losses through processing and preservation in selected villages in Morogoro and Iringa Regions
020	Development, transfer and adoption of selected fruits and vegetable processing and preservation packages developed at SUA and MAF by smallholder farmers in the Eastern and Southern zones
021	Sweet potato germ-plasm maintenance and evaluation in the Eastern zone
022	Strategies for improving commodity market information and market access by farmers and traders in the Eastern and Southern Highlands zones in Tanzania
023	Integrated Rice improvement program for women farmers in Kilombero River Basin, Morogoro, Tanzania
024	Improved cattle productivity through strategic feeding and reproductive health control in smallholder herds in Eastern zone, Tanzania
025	Development of farm-level technologies for improving productivity of small ruminants in Eastern and Southern Highlands zones of Tanzania
026	Design - management interactions in smallholder irrigation system. A case study of the Usangu plains
027	Development and application of appropriate technologies for milk collection, processing and marketing by smallholder dairy farmers and traditional livestock keepers in the Eastern and Southern Highlands zone of Tanzania.

Project Code	Project Title
028	Strengthening farmers' accessibility to information input and market in Tanzania through existing and new forms of farmers' organisations
029	Development and promotion of improved processing, packing and storage of sweet potato and cassava for diversification of use and commercialisation of value added products under smallholder conditions
030	Optimising of on-farm regimes for controlling ticks and tick-born diseases for smallholder farmers of dairy and traditional Zebu cattle
031	Development of nutrition guidelines for diet improvement in Morogoro and Iringa Regions
032	Improving food and income security of female farmers through introduction of appropriate cropping systems in selected villages of Morogoro
033	On-station and on-farm evaluation of improved pigeon pea varieties in the Eastern Zone
034	Impact of macro-economic policy reforms on agricultural productivity, Food security and Poverty in Tanzania: A case of the Southern Highlands zone
035	Formulation of weaning foods for enhancing household income and nutrition security.
036	Development of appropriate interventions to enhance livestock, meat marketing, preservation and consumption in rural areas of the Eastern zone
037	Improvement of soil fertility in coconut based farming through crop rotation in farmers fields
038	Evaluation of tillage practice and organic mulch on yield of rice and cowpeas grown in sequence under lowland rain-fed rice culture in Kyela and Kilombero Districts
039	Promotion of Sustainable Utilisation of Draft Animal Technologies for the Improvement of Agricultural productivity for Small holder Farmers
040	Testing of improved fallow for Improving soil fertility: The Use of trees and shrubs that enhance the availability of Soil phosphorus and firewood
041	In-vitro micro-propagation for mass production of clean planting materials of desirable banana cultivars
042	On-farm development and promotion of integrated disease management measures for rice yellow mottle virus disease control in Kyela district, Southern Highlands of Tanzania
043	Verification of common bean varieties tolerant to low soil phosphorus, nitrogen and acid condition (Low pH) in Njombe and Sumbawanga districts
044	Evaluation of the effect of nitrogen and phosphorus application in conjunction with tillage and residue management of physical and chemical characteristics of soil, weed, microbial population and diversity and on yield of maize

3.3 Table of contents for project data base

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Project code: 010**Project title:** Commercialisation of Cassava Root as a Source of Energy in Commercial Live stock Feeds**General objective / Purpose:** Promoting cassava production and commercialisation through utilization in commercial livestock feeds and develop sustainable marketing system.**Source of quantitative information;** Group discussion and Individual contact farmers**Table 1: Project Specific technical baseline data for project code number 010**

Parameter	Specification	Unit	Village/Area: Miswe	Village/Area: Zogowale	Total / Average
Sample	Total	Number	1268	1356	
	Male	Number	580	627	
	Female	Number	683	729	
	Disabled	Number	619		
	Male	Number	298		
	Female	Number	321		
	<5years	Number	122		
	Boys	Number	58		
Girls	Number	64			
Cassava production	Yield	Kg/acre		5000	
Price	Bitter variety	Kg/bag		3000	
	Sweet variety	Kg/bag		6000	
	Dried cassava	Kg/bag		8000	
Farm area	Area under cultivation	Acres	3.94	4.55	
	% of total land	%	30	51	

Project code: 011

Project title: Soybean (*Glycine max* (L.) merill variety evaluation for yield potential and utilization as human good and livestock feed in Eastern and Southern highlands zones.

General objective / Purpose: To identify appropriate soybean cultivars, production systems and utilization at village level in Eastern and Southern Highlands zones of Tanzania.

Specific objectives :

- i. To assess the socio-economic importance of mastitis, its control and milk handling practices.
- ii. To determine the prevalence and determinants of mastitis.
- iii. To establish the factors responsible for reduced milk quality
- iv. To train farmers, animal attendants, milk vendors and field officers in good dairy management.
- v. To evaluate the effectiveness of mastitis intervention strategies.
- vi. To assess the impact of knowledge dissemination on the dynamics of mastitis and its control strategies.

Source of quantitative information: Key informants, Group discussion, Individual contact farmers and Soil samples

Table 2a: Project Specific technical baseline data for project code number 011

Parameter	Specification	Unit	Total/average
Maize	Rank		1
	Number		38
	%		100
Yield	≤ 5 bags/acre	Number	20
		%	53
	> 5 bags/acre	Number	16
		%	42
Beans	Rank		2
	Number		34
	%		89
Yield	≤ 5 bags/acre	Number	28
		%	74
	> 5 bags/acre	Number	2
		%	5.3

Table 2a: Project Specific technical baseline data for project code number 011 (contd.)

Parameter	Specification	Unit	Total/average
Rice	Rank		2
	Number		34
	%		89
Yield	≤ 5 bags/acre	Number	5
		%	13
	> 5 bags/acre	Number	24
		%	63
Sweet potato	Rank		3
	Number		29
	%		76
Yield	≤ 5 bags/acre	Number	10
		%	26
	> 5 bags/acre	Number	6
		%	16
Groundnuts	Rank		4
	Number		12
	%		32
Yield	≤ 5 bags/acre	Number	11
		%	29
	> 5 bags/acre	Number	1
		%	3
Cassava	Rank		5
	Number		8
	%		21
Yield	≤ 5 bags/acre	Number	1
		%	3
	> 5 bags/acre	Number	-
		%	-

Table 2a: Project Specific technical baseline data for project code number 011 (contd.)

Parameter	Specification	Unit	Total/average
Banana	Rank		6
	Number		1
	%		3
Yield	≤ 5 bags/acre	Number	-
		%	-
	> 5 bags/acre	Number	-
		%	-

Table 2b: Project Specific technical baseline data for project code number 011

Parameter	Specification	Unit	Total/average
Knowledge about Soya bean	Yes	Number	23
		%	61
	No	Number	14
		%	37
Knowledge about lishe	Yes	Number	27
		%	71
	No	Number	10
		%	26

Table 2c: Project Specific technical baseline data for project code number 011

Parameter	Specification	Unit	Total/average
Disease control methods	Spraying	No.	1
		%	3
	Time of planting	No.	6
		%	16
	Clean seed	No.	3
		%	8
	Resistant variety	No.	4
		%	11
	Water flooding	No.	1
		%	3

Project code: 012

Project title: Assessment and Promotion of Rainwater Harvesting to Overcome Water Shortages for Domestic Livestock and Livestock and Plant Growth in the Semi Arid Areas of Njombe

General objective / Purpose: To improve food security and household income of farmers in the semi-arid areas of Njombe district.

Specific objectives :

- i. To improve water availability for domestic uses through the application of rainwater harvesting techniques.
- ii. To supply water to livestock, particularly, during the dry season.
- iii. To improve the productivity of crops through intensive use of rainwater harvesting practices.
- iv. To improve availability of forages (pastures) to livestock, particularly the draught animals and milking cows.

Source of quantitative information: Group discussion and Individual contact farmers

Table 3: Project Specific technical baseline data for project code number 012

Parameter	Specification	Unit	Village/Area: Wanging'ombe	Village/Area: Isimike	Total / Average
Yield in years of enough rains	Maize without manure	Bag/acre	1.5	3.0	
	Maize with manure/ fertilizers	Bag/acre	3.0	3.0	
	Beans	Bag/acre	2.5	0.8	
	Cowpeas	Bag/acre	3.0	0.5	
	Sunflower	Bag/acre	2.0	0.5	
Yields in years of low rainfall	Maize without manure	Bag/acre	0	0.1	
	Maize with manure/ fertilizers	Bag/acre	0.5	0.3	
	Beans	Bag/acre	0.3	0.3	
	Cowpeas	Bag/acre	1.5	0.4	
	Sunflower	Bag/acre	0.5	0.1	
Income	Crops	Tshs/yr	165,000	201,00	
	Livestock	Tshs/yr	116,000	105,000	
	Non-farm activities	Tshs/yr	100,000	58,000	
Expenditure	Food	Tshs/yr	29,400	44,000	
	Livestock purchases	Tshs/yr	83,800	57,000	
	Agricultural inputs	Tshs/yr	62,500	28,200	
	Non-food	Tshs/yr	124,600	159,800	
Domestic water consumption	Wet season	Litre/d/HH	200	60	
	Dry season	Litre/d/HH	60	20	

Project code: 013

Project title: Agro forestry technologies for soil fertility improvement and wood production in semi - arid areas of Morogoro

General objective / Purpose: To utilize fast growing leguminous trees/shrubs for soil fertility improvement and for wood production under agro forestry.

Source of quantitative information: Key informants

Table 4a: Project Specific technical baseline data for project code number 013

Parameter	Specification	Unit	Village/Area: Gairo	Village/Area: Ibuti	Total / Average
Sample size	Low income	%	22	21	
	Middle Income	%	29	32	
	High Income	%	9	7	
Household characteristics	Household size	Counts	9		
	Age (years)	Years	43		
	Primary Education	%	55		
	Adult Education	%	10		

Table 4b: Project Specific technical baseline data for project code number 013

Parameter	Specification	Unit	Village/Area:Gairo & Ibuti	Total / Average
Land ownership	Inheritance	%	36	
	Purchase	%	34	
Labour force members	Adults	%	27	
	Children	%	73	
Farm size /crop/household	Maize	Acre	7	
	Sweet potato	Acre	1.5	
	Groundnuts	Acre	1.8	
	Tomatoes	Acre	0.6	
Average Yield per crop	Maize	Bags	16.71	
	Sweet potato	Bags	53.35	
	Groundnuts	Bags	22.00	

Table 4b: Project Specific technical baseline data for project code number 013 (contd)

Soil fertility improvement strategies	Crop rotation		53	
	Intercropping		0.5	
	Crop residues		27	
	Farm yard manure		0.8	
	Inorganic fertilizers		7	
	Agroforestry		0	

Project code: 014

Project title: Development and Dissemination of Mushroom Cultivation and Preservation Technologies at Household and Community Level in the Southern Highlands and Eastern Zone of Tanzania

General objective / Purpose: To enhance food security and diversification as well as economic welfare of women through the development and dissemination of mushroom cultivation and preservation technologies using agricultural and forestry residues.

Specific objectives:

- i. To assess the yield and nutritional value of the tropical oyster mushrooms, *Pleurotus spp.*, as affected by various substrates found in Tanzania.
- ii. To develop appropriate post-harvest preservation technologies of the mushrooms.
- iii. To extend the technology of mushroom cultivation to selected women groups in the Southern and Eastern zones of Tanzania.
- iv. To explore market potential and marketing channels for the cultivated mushrooms.
- v. To evaluate the fertilizer value of spent substrates on various horticultural crops.

Source of quantitative information: Individual contact farmers

Table 5: Project Specific technical baseline data for project code number 014

Parameter	Specification	Unit	Village/Area Kilombero	Village/Area: Mufindi	Village/Area: Muheza	Total / Average	Percent %
Method used to preserve mushroom	Do not preserve	Number	4	1	11	16	33
	Cooking or drying	Number	9	10	13	32	67
Preferred forms of mushroom consumption	Fresh	Number	24	9	29	62	42
	Processed	Number	0	1	1	2	3
	Both fresh & processed	Number	1	3	4	8	11
Common types of crop residues in district	Maize straw	Number	21	11	31	63	88
	Paddy straw	Number	4	0	2	6	8
	Wheat straw	Number	0	1	0	1	1
	Others	Number	0	1	1	2	3
Whether they sell some mushrooms they collect	Yes	Number	4	7	14	25	35
	No	Number	21	6	20	47	65
Division of labour	Male/husband	Number	4	0	0	4	6
	Female/wife	Number	12	6	10	28	42
	Children	Number	4	1	4	9	13
	All of the above	Number	5	5	16	26	39

Table 5: Project Specific technical baseline data for project code number 014 (contd.)

Parameter	Specification	Unit	Village/Area Kilombero	Village/Area: Mufindi	Village/Area: Muheza	Total / Average	Percent %
Major constraints	Knowledge	Number	12	6	12	30	65
	Market	Number	0	3	3	6	13
	Seed availability	Number	0	1	1	2	4
	Others	Number	3	1	4	8	17

Project code: 015**Project title:** Improvement of Health and Productivity of Village Chicken by Controlling Important Diseases**General objective / Purpose:** To control important diseases of village and hence increase the take off rate of chickens kept by rural smallholder farmers**Specific objectives :**

- i. To obtain baseline data on major disease constraints affecting local chicken productivity in selected villages in Morogoro and Coast regions
- ii. To develop a New castle Disease (ND) vaccine using a virulent virus isolates from Tanzania
- iii. To test the efficacy of the locally produced vaccine and establish regime for vaccinations of local chickens
- iv. To collect, identify and test the efficacy of *Aloe spp.* which are locally used as chicken disease remedies
- v. To study the effect of combined application of *Aloe spp.* extracts and the locally produced ND vaccine
- vi. To determine the socio-economic impact of controlling major chicken diseases to women and children
- vii. To recommend the optimal regimes for disease control in local chickens

Source of quantitative information: Group discussion and Individual contact farmers**Table 6: Project Specific technical baseline data for project code number 015**

Parameter	Specification	Unit	Village/Area: Diongoya ward N=7	Village/Area: Mtibwa ward N=17	Village/Area: Sungaji ward N=15	Total/ Average
Contact farmers having chickens		Number	7	17	15	
Number of birds	Chicken, Ducks, Guinea Fowls & Pigeons	Number	271	847	226	
Number of Households reporting diseases	New Castle disease	%	85.7	76.5	80	
	Fowl pox	%	57.1	94.1	26.7	
	Coryza	%	14.3	35.3	33.3	
	Fowl typhoid	%	28.6	0.6	0	
Main sources of local chickens	Purchase	Number	100	76.5	73.3	
	Gift	Number	1.4	1.2	20	
	Inheritance	Number	0	0.6	1.3	
	Contractual Agreement	Number	0	23.5	0	

Table 6: Project Specific technical baseline data for project code number 015 (contd.)

Parameter	Specification	Unit	Village/Area: Diongoya ward N=7	Village/Area: Mtibwa ward N=17	Village/Area: Sungaji ward N=15	Average
Total number of chickens	Total	Number	204	718	208	
	Average	Number	29	42	14	
	Range	Number	6-107	10-82	4-32	
	Cocks	Number	17	40	7	
	Hens	Number	51	181	74	
	Pullets	Number	69	133	10	
	Chicks	Number	50	282	99	
Ownership	Husband	Number	1	0	0	
	Wife	Number	1	15	9	
	Joint	Number	0	1	5	
	Children	Number	0	1	0	
Chicken housing	Housing	Number	7	15	15	
	No housing	Number	0	2	0	
Feeding	Kitchen leftover	Number	7	16	12	
	Cereal grains, maize bran	Number	7	16	12	
	Combinations	Number	5	11	6	
	Sardines waste	Number	5	0	0	
	Commercial	Number	0	1	0	

Table 6: Project Specific technical baseline data for project code number 015 (contd.)

Parameter	Specification	Unit	Village/Area: Diongoya ward N=7	Village/Area: Mtibwa ward N=17	Village/Area: Sungaji ward N=15	Average
Feeding schedule	Morning only	Number	2	14	9	
	Afternoon	Number	0	4	1	
	Any time	Number	5	1	3	
Constraints	Disease	Number	3	13	12	
	Lack of capital	Number	1	7	0	
	Predators	Number	0	5	3	
	Theft	Number	0	1	1	
	Lack of vet services	Number	1	1	1	
	Ignorance	Number	0	0	3	
	Chilly weather	Number	0	0	1	
	Lack of time	Number	0	0	1	
	Lack of incubator	Number	0	1	0	
	Lack of market	Number	1	0	0	
	Lack of improved breeds	Number	1	0	0	

N=Number of households per ward.

Project code: 016

Project Title: Optimising Milk production and quality in smallholder dairy sector through mastitis control, improved management and reduced post milking microbial contamination.

General objective: To improve milk production and quality in the smallholder dairy-farming sector.

Specific objectives:

- i. To assess the socio-economic importance of mastitis, its control and milk handling practices.
- ii. To determine the prevalence and determinants of mastitis.
- iii. To establish the factors responsible for reduced milk quality
- iv. To train farmers, animal attendants, milk vendors and field officers in good dairy management.
- v. To evaluate the effectiveness of mastitis intervention strategies.
- vi. To assess the impact of knowledge dissemination on the dynamics of mastitis and its control strategies.

Source of quantitative information: Key informants and Individual contact farmers

Table 7: Project Specific technical baseline data for project code number 016

Parameter	Specification	Unit	Village/ Area MOROGORO	Village/ Area KIBAHA
Herd Structure	Herd Size		6.69	11.31
	Breeding stock		4.15	11.31
	Bulls > 1 year		1.14	1.2
Breeds	Friesian		47.8 (n = 92)	51.4 (n=144)
	Friesian		30.4 (n = 92)	29.9 (n=144)
	Ayshire		13 (n = 92)	8.3 (n=144)
	Boran		2.2 (n = 92)	8.3 (n=144)
	TSHZ		3.3 (n = 92)	2.0 (n=144)
	Jersey		3.3 (n = 92)	0.0 (n=144)
	Unclassified	%		47.8 (n = 92)

Table 7: Project Specific technical baseline data for project code number 016 (contd.)

Parameter	Specification	Unit	Village/ Area MOROGORO	Village/ Area KIBAHA
Means of acquiring first dairy animal	Bought using own money	Count	39	53
		%	86.7	93
	Bank loan	Count	2	
		%	44	
	Gift from relatives/ friends	Count	4	1
		%	89	1.8
Loan from NGO	Count		3	
	%		5.3	
Milk outlets	Neighbour	Counts	35	26
	Collection centre	Counts	8	20
	Vendors	Counts	13	11
	Kiosks	Counts	7	4
	Others	Counts	0	11
Knowledge on clinical mastitis	HH that saw mastitis	%	29.2 (n = 48)	15.5 (n = 58)
Knowledge on sub clinical mastitis	HH that are aware	%	8.4 (n = 48)**	13.8 (n = 50)**
Use of soap disinfectant	HH that use	%	14.5 (n = 48)	24.1 (n=58)
Number of animals affected by clinical mastitis		%	4.2 (n=96) *	1.4 (n=144)*
Number of animals affected by subclinical mastitis		%	62.4 (n=85) *	82.4 (n=131) *
Milk yield	Yield/cow/lactation of 250 days	Litters	1555	1392.5
Knowledge on subclinical mastitis	HH that are aware	%	8.4 (n=48)	13.8 (n=58)
Washing udder drying cloth	Those using cloth for drying udders	%	58.3 (n=24)	34.5 (n=31)
Milk quality check for abnormalities		%	17 (n=48)	27 (n=58)

* The difference in sample size was due to the fact that some of the animals that were examined for clinical mastitis were not sampled for subclinical mastitis due to unavoidable reasons.

Project code: 017**Project title:** Improvement of Dry Season Feeding for the Smallholder Dairy Production in Southern Highlands**General objective / Purpose:** To improve livestock productivity through better management and utilization of feed resources for increased household food security and income**Specific objectives :**

- i. To establish an inventory of indigenous knowledge on dry season feeding strategies and factors limiting optimum utilization of available feeds for dairy production.
- ii. To establish an inventory of the available ruminant feeds and their seasonal availability in terms of abundance, distribution and nutritive value.
- iii. To establish and monitor health status and performance of dairy cattle in the study area in relation to seasonal changes of feed quantity and quality.
- iv. To introduce and test various agronomic practices for increased forage productivity.
- v. To introduce and test low cost forage conservation techniques for carrying over surplus forages from wet to dry season.
- vi. To develop and test methods of minimizing feed wastage at feeding for increasing efficiency of feed utilization.
- vii. To develop and test feed supplement formulae for different localities, stages of livestock production and season of the year.
- viii. To develop and test the annual dairy feeding plan basing on the available feed resources in selected villages in the study area.
- ix. Production of training and extension manuals for increased dairy production in Southern Highlands.

Source of quantitative information: Key informants, Group discussion and Individual contact farmers**Table 8: Project Specific technical baseline data for project code number 017**

Parameter	Specification	Unit	Village/Area: Kichiwa	Village/Area: Mtwango	Village/Area: Ikelu	Village/Area: Ibumila	Total / Average
Average livestock holdings/ holding	Poultry		5.08	7.14	8.56	12.82	
	Cattle		4.28	3.4	3.15	5.00	
	Goats		3.0	3.5	1.67	-	
	Sheep		5.0	-	1	-	
	Pigs		3.2	1.67	2.0	1.5	
	Ducks		9.0	8.0	3.0	2.0	
	Rabbits		7.0	9.0	15.0	-	
	Guinea Pigs		28.33	10.5	20.0	10.0	
Donkey		-	2	-	2.0		

Table 8: Project Specific technical baseline data for project code number 017 (contd.)

Parameter	Specification	Unit	Village/Area: Kichiwa	Village/Area: Mtwango	Village/Area: Ikelu	Village/Area: Ibumila	Total / Average
Average number of Local cattle owned by household	Cow		2	2	2	2	
	Heifer		1	1	1	1	
	Calves		1	1	1	1	
	Young bulls (1 - 2 yrs)		-	-	-	-	
	Oxen		2	3	3	3	
	Bulls		-	-	-	-	
Average number of Improved cattle owned by household	Cow		1	1	1	2	
	Heifer		2	1	5	1	
	Calves		2	1	1	3	
	Young bulls (1 - 2 yrs)		1	1	1	5	
	Oxen		-	-	-	-	
	Bulls		-	-	-	1	
Production performance of dairy cattle	Calving interval		-	-	-	21	
	Duration of milking		9	10	13	13	
	Average milk production		8	9	9	8	
Crop residues: Maize stovers	Distance covered in carrying	km	1	4	3	3 - 4	
Supplementary feeds: Maize bran	Amount given per day	kg					1 - 2
	Price per kilogram	TAS/kg					20
Local grasses	Price of local grass	TAS/bail					600

Table 8: Project Specific technical baseline data for project code number 017 (contd.)

Parameter	Specification	Unit	Village/Area: Kichiwa	Village/Area: Mtwango	Village/Area: Ikelu	Village/Area: Ibumila	Total / Average
Available local grasses	1. kidivu (coach grass)						
	2. Lipa ngongoro						
	3. Nyagoromeka						
	4. Liizerania (hyperennia)						
Established pasture	1. Rhodes grass					3	
	2. Quatermalla					5	
	3. elephant grass					-	
	4. Cetaria					1	
	5. Liizerania (hyperennia)						
Leguminous	1. Desmodium					3	
	2. Sesbania					5	
	3. luccinae					-	
	4. Cetaria					1	
Cutting frequency	Rhodes	Number /year	3				
	Quatermala	Number /year	8			3	
	Elephant	Number /year	6			5	
Acreage		acre	0.25 - 1			-	

Project code: 018

Project title: Integrated Management of With Weed (*Striga spp*) in Sorghum and Maize Based Cropping Systems of the Eastern Zone.

General objective / Purpose: Evaluate agronomic practice, which can enhance soil fertility and conduct on farm testing to determine *Striga* management strategies.

Source of quantitative information: Village meeting and Key informants

TABLE 9.1: Food security groups and their characteristic in project code number 018

Aspect	Food security groups		
	Food secure	Intermediate	Food insecure
Field plots	4>acre of maize 1-1.5acre cassava	1-1.5 acre maize No cassava plot	0.5 acre or none
Livestock ownership	≥20 goats ≥10 chicken	≤10 chicken	None
Availability of fruits	Oranges, Mangoes, Coconut trees	Few	None
Other income generating activities	Operate small business e.g. shops	Many have small kiosk on road side	None

TABLE 9.2 Overall summary for Melela village

Food security category	Groups	No. Of house holds	% of total household
Food secure	MHM	93	91.2
	FHH	9	8.8
Intermediate	MHH	90	75
	FNN	30	25.0
Food insecure	MHH	243	71.7
	FHH	129	28.3

MHH=Male headed household; FHH=Female headed households

TABLE 9.3 overall summary for Magangae village

Food security category	Group	No. of household	% of total house hold
Food secured	HMM	158	85.9
	FHH	14.1	14.1
Intermediate	MHH	69.2	69.2
	FHH	20	20.8
Food insecure	MHH	73.1	73.1
	FHH	26.9	26.9

Project code: 019**Project title:** Increasing the Developmental Value of Fruits and Vegetables through Reduction of Post Harvest Losses**General objective / Purpose:** To improve the post harvest of the fruits and vegetables for the benefit of farmers, traders and hence the nation at large.**Specific objectives:**

- i. To undertake an assessment of the household food security situation and through the same process to establish households' coping strategies during periods of food shortage
- ii. Study the role played by fruits and vegetables and their contribution to households' food supply and income
- iii. To identify village level skills available for processing and preservation of fruits and vegetables
- iv. To recommend and implement through a farmers' participatory approach simple gender friendly technologies for processing of fruits and vegetables.

Source of quantitative information: Village meeting, Key informants and Individual contact farmers**Table 10. Project Specific technical data for project code number 19**

Parameter	Specification	Unit	Zombo	Mlali	Fukayosi	Total / Average
Average farm size (acres) dedicated to fruit/vegetable production	Up to 2.9	Acres	7.7 (n = 13)	62.5 (n = 16)	42.1 (n = 19)	
	3.5 - 9	Acres	46.2 (n = 13)	25.5 (n = 16)	42.2 (n = 19)	
	6 - 10	Acres	38.5 (n = 13)	12.5 (n = 16)	5.3 (n = 19)	
	> 10. 1	Acres	7.7 (n = 13)		10.5 (n = 19)	
Fruit and vegetable income by gender	Pineapple	TAS				
	Tomatoes	TAS	Female 50,000	Female 100,000		
			Male 203,000	Male 2,000,000		
	Orange/mango	TAS	Female 50,000	-		
			Male 8,000	Male 60000		
	Banana	TAS				

Table 10. Project Specific technical data for project code number 19 (contd.)

Parameter	Specification	Unit	Zombo	Mlali	Fukayosi	Total / Average
Percent aggregate loss of fruits/vegetables by farmers	Vegetables	%	55 (n = 13)	37 (n = 16)	10 (n = 19)	
	Fruits	%	50 (n= 13)	35 (n = 16)	70 (n = 19)	
Awareness of contact farmers to technology of fruit/ vegetable processing	Have used traditional methods for processing fruits or vegetables		Female 2 Male 2			
	Have been trained in fruit/vegetable processing		Female 1 Male -	Female 5 Male -		
	Interested to learn skills in fruits/ vegetable preservation		Female 8 Male 5	Female 17 Male -	Female 17 Male 2	
	Involvement in women groups in fruits/vegetables processing and selling			Female 5 Male -		

Project code: 020

Project title: Development, transfer and adoption of selected fruits and vegetable processing and preservation packages developed at SUA and MAF by smallholder farmers in Eastern and southern zones

General objective / Purpose:

Specific objectives :

Source of quantitative information: Group discussion

Table 11. Project Specific Technical Baseline Data for Project Code Number 020

Parameter	Specification	Unit	Village/Area - Mindu	Total / Average
Orange varieties grown	Jaffer	%	37	
	Nairobi	%	16	
	Valencia	%	0.2	
	Msasa	%	16	
	Zanzibar	%	16	
	Washington Navel	%	0.3	
Orange yield per tree during peak season	Jaffer	Pieces	800 - 1500	
	Msasa	Pieces	1000	
	Zanzibar	Pieces	500 – 1000	
	Valencia	Pieces	2000	
	Washington Navel	Pieces	2000	
Orange yield/ tree during low season	Jaffer	Pieces	150 – 500	
	Msasa	Pieces	200	
	Zanzibar	Pieces	200 – 300	
	Valencia	Pieces	800	
	Washington Navel	Pieces	150	
Orange marketing season	July – October	TAS	5 – 12	
	February – May	TAS	4 –7	
Frequency of buying oranges	Daily	%	41	
	Weekly	%	45	
	Once in a while	%	10	
Prices	Fixed	%	60	
	Bargains	%	40	

Project code: 021

Project title: Sweet potato germplasm maintenance and evaluation in the Eastern zone

General objective / Purpose: To select and evaluate sweet potato varieties having the following qualities: high and stable dry matter; resistant to important pests; acceptable qualities; desirable root characteristics; adapted to various agro-ecological zones.

Source of quantitative information: Key informants, Group discussion and Various PRA techniques

Table 12. Project Specific Technical Baseline Data for Project Code Number 021

Parameter	Specification	Unit	Village/Area Pangani	Village /Area Kongwa	Total / Average
Sample size		Counts	31	59	90
Rank of sweet potato compared to other crops	As good crop	Number	3	4	3.5
	As cash crop	Number	3	3	3
Sweet potatoes share of cash crop income	-	%	10	-	-
Average yield levels of sweet potatoes	-	Bags/acre	5-6	-	-
Yield levels of sweet potatoes	-	Bags/acre	-	2000-2500	-
Yield levels of sweet potatoes	-	Tons/acre	-	6-7	-

Project code: 022

Project title: Strategies For Improving Market Information and Market Access by Farmers and Traders in the Eastern and Southern Highland Zones of Tanzania

General objective / Purpose: To increase the efficiency and effectiveness in agricultural commodity market exchange through market information generation and delivery.

Specific objectives :

- i. To evaluate factors that influence market access by producers, processors and traders with a gender perspective.
- ii. To identify information generation points, mechanisms of information flows within and outside the zone, and users needs for effective and efficient marketing information.
- iii. To determine policy and economic factors that can influence private sector commercial provision of agricultural commodity and market information
- iv. To conduct feasibility assessment of provision of commercial agricultural commodity market information services

Source of quantitative information: Key informants and Cross-sectional and time series data from various stakeholders

Table 13a: Project Specific technical baseline data for project code number 022

Sample size	District	Farmers	Traders	Transporters
	Mbeya rural	29	3	1
	Mbeya urban		3	3
	Iringa rural	19	4	6
	Iringa urban	16	6	4
	Dodoma urban	20	19	14
	Arusha	26	29	18
	Mbarali	6	1	1
	Tanga urban	14	2	1.3
	Korogwe	15	5	6
	Muheza	14	5	3
	Morogoro urban		15	13
	Morogoro rural	32	1	
	Kongwa	20	16	19
	Kinondoni		10	6
	Ilala		24	8
	Temeke		6	2
	Total	211	149	103

Table 13b: Project Specific technical baseline data for project code number 022

Parameter	Specification	Unit	Total / Average
Reasons for not seeking market information by farmers	Traders come to us	%	42.7
	Not important	%	25.6
	Not enough time	%	17.1
	Lack of knowledge	%	1
	Small business	%	3.6
Main Sources of Market Information	Check with middlemen	%	45.3
	Visit markets	%	39.9
	Neighbours	%	11.5
	Extension	%	2.0
	Radio	%	1.4
Important market risk factors to Farmers	Unstable prices	%	30.7
	Low prices	%	28.9
	Lack of market outlets	%	20.8
	Lack of transport	%	9.9
	Others	%	9.9
Main types of processors	Grain milling	%	80.5
	Vegetable oils	%	6.2
	Fruit juices	%	6.2
	Jam and caned vegetables	%	4.4
	Wine	%	2.7

Table 13c: Project Specific technical baseline data for project code number 022

Parameter	Specification	Unit	Total/Average
Type of records kept by processors	Income	Number	87
		%	43
	Operation cost	Number	74
		%	36
	Creditors	Number	32
		%	16
	Stocks	Number	3
		%	1
	Other costs	Number	4
		%	2
	Amount of products produced	Number	4
		%	2
	Total	Number	204
		%	100
Source of initial capital for the business	Inherited	Number	25
		%	43
	Loan	Number	26
		%	36
	From other business	Number	79
		%	16
	Husband	Number	4
		%	1
	Salary	Number	4
		%	2
	Retirement benefits	Number	3
		%	2
	Farming		8
			5
Total	Number	204	
	%	100	

Table 13c: Project Specific technical baseline data for project code number 022 (contd.)

Parameter	Specification	Unit	Total/Average
Main types of crops dealt in	Onions	Number	13
		%	7
	Peas	Number	4
		%	2
	Oranges	Number	21
		%	11
	Banana	Number	16
		%	8
	Mangoes	Number	10
		%	5
	Maize	Number	34
		%	17
	Rice		26
			13
	Irish potatoes	Number	11
		%	6
	Beans	Number	21
		%	11
	Cabbage	Number	10
		%	5
	Tomatoes	Number	18
		%	9
	Pineapples	Number	8
		%	4
	Eggplant	Number	4
		%	2
	Cucumber	Number	3
		%	2
Total	Number	199	
	%	100	

Table 13c: Project Specific technical baseline data for project code number 022 (contd.)

Parameter	Specification	Unit	Total/Average	
Reasons for not Seeking Advice or Market Information	Inadequate education	Number	2	
		%	5.0	
	Don't know where to get advice	Number	11	
		%	27.5	
	No time to seek information	Number	2	
		%	5.0	
	Small business	Number	7	
		%	17.5	
	Not important	Number	18	
		%	45.0	
	Main source produce transported	Ilula/Iringa	Number	7
			%	7
Tukuyu/Mbeye		Number	7	
		%	7	
Lushoto		Number	4	
		%	4	
Morogoro		Number	2	
		%	2	
Dabaga/Iringa		Number	1	
		%	1	
Korogwe		Number	3	
		%	3	
Muheza			1	
			1	
Uyole		Number	2	
		%	2	
Babati		Number	10	
		%	10	
Kondoa	Number	5		
	%	5		

Table 13c: Project Specific technical baseline data for project code number 022 (contd.)

Parameter	Specification	Unit	Total/Average	
	Mang'ula	Number	5	
		%	5	
	Mwika	Number	1	
		%	1	
	Oljoilo	Number	1	
		%	1	
	Monduli	Number	1	
		%	1	
	Mbulu	Number	1	
		%	1	
	Kibaigwa	Number	19	
		%	20	
	Main Source produce Transported	Mtibwa	Number	2
			%	2
Gairo		Number	1	
		%	1	
Kiteto		Number	6	
		%	6	
Pangani		Number	1	
		%	1	
Mkuyuni		Number	2	
		%	2	
Kipela/Mlali		Number	1	
		%	1	
Matui		Number	2	
		%	2	
Matombo		Number	3	
		%	3	
Gairo		Number	3	
		%	1	

Table 13c: Project Specific technical baseline data for project code number 022 (contd.)

Parameter	Specification	Unit	Total/Average
	Dar-es-salaam	Number	1
		%	1
	Mkuranga	Number	3
		%	2
	Njombe	Number	1
		%	1
	Dodoma	Number	8
		%	8
	Chilonwa	Number	1
		%	1
	Kibaha	Number	1
		%	1
	Total	Number	107
		%	100
Destination of the fruits / vegetables / Cereal	Mbeya	Number	1
		%	1
	Morogoro	Number	12
		%	12
	Arusha	Number	20
		%	20
	Dar - es - Salaam	Number	51
		%	50
	Kilimanjaro	Number	1
		%	1
	Kibaigwa	Number	7
		%	7
	DRC	Number	1
		%	1
	Zanzibar/Pemba	Number	1
		%	1
	Dodoma	Number	8
		%	8
	Total	Number	102
		%	100

Project code: 023

Project title: Integrated Rice Improvement for Women Rice Farmers in Kilombero River Basin, Morogoro, Tanzania.

General objective / Purpose: To understand and improve rice production and marketing systems for women rice farmers in Tanzania

Specific objectives :

- i. To identify farmers' perceptions, potentials and limitations to the use of improved rice production technologies in the Kilombero river basin (KRB)
- ii. To characterize and promote utilization of improved rice genotypes adapted to various agro-ecological zones in the KRB
- iii. To promote use of sustainable and integrated soil and water management practices for small-scale women rice farmers in the basin
- iv. To study the socio-economic factors associated with adoption of Improved technologies and increased production and marketing of rice for women rice farmers in KRB.

Source of quantitative information: Individual contact farmers

Table 23:1 Project Specific technical baseline data for project code number 014

Parameter	Specification	Unit	Village/Area Msolwa	Village/Area: Idete	Total / Average
Sample size		Count			153
Farmers who control water in the farm		No			10
		%			6.5
Farmers who buy seeds		No			15
		%			9.8

Table 23:1 Project Specific technical baseline data for project code number 014

Parameter	Specification	Frequency	Percentage
Variety of rice planted in KRB	Indian Variety	141	92.2
	Kisegesa Variety	9	5.9
	Limota Variety	5	3.3
	Mwanza Variety	4	2.6
	Rangi mbili variety	8	5.2
	Afaa variety	5	3.3
	Linganaula variety	2	1.3
	Usiniguse variety	2	1.3
	Total	176	115.1
If rainfall was enough last year 1999/2000	Yes	59	38.8
	No	93	61.2
	Total	152	100.0
	Non respond	1	
	Total	153	
Flooding control	Do not control	133	93.0
	Build channels to drain water	9	6.3
	Transplanting instead of broadcasting	1	0.7
	Total	143	100.0
	None respond	10	
	Total	153	
Where fertilizer is obtained	Valid Markets	20	90.9
	Take a lone	1	4.5
	Cooperative	1	4.5
	Union		
	Total	22	100.0
	None res pond	131	
	Total	153	
Yield satisfactions	Yes	54	35.8
	No	97	64.2
	Total	151	100.0
	None respond	2	
	Total	153	

Project code: 024

Project title Improved Cattle Productivity Through Strategic Feeding and Reproductive Health Control in Smallholder Herds in Eastern Zone.

General objective / Purpose: To improve indigenous cattle productivity through utilization of fast-growing leguminous trees/shrubs fodder and enhanced reproductive health

Specific objectives :

- i. To determine the quantity and quality of fodder produced by fast growing leguminous tree/shrub species in fodder bank
- ii. To assess re-growth and fodder production potential after frequent cuttings
- iii. To determine the economic potential of dry season fodder supply
- iv. To assess the socio-economic factors influencing the adoption of dry season fodder banks by rural communities
- v. To carry out a socio-economic assessment of the impact of reproductive diseases
- vi. To assess the quantity and quality of dry season fodder production
- vii. To determine effects of fodder banks and fodder supplementation on animal body condition, milk production and oestrous cyclicity
- viii. To assess the occurrence and prevalence of infertility problems in the indigenous zebu cattle herds
- ix. To carry out intervention steps through feeding and reproductive health control and evaluate their impact on infertility.

Source of quantitative information: Group discussion

Table 15: Project Specific technical baseline data for project code number 024

Parameter	Specification	Unit	Gairo village	Msingisi village	Ukwamani	Total / Average
Sample size		Litres	20	40	60	120
Number of cattle keeping households		Counts	34	61	105	200
Sampled households among cattle keepers		Number	20	40	60	120
		%	58.8	65.6	57.1	60

Parameter	Specification	Unit	Gairo village	Msingisi village	Ukwamani	Total / Average
Number of livestock per household Cattle	Total	Counts				12
	Minimum	Counts				2
	Maximum	Counts				80
	Average	Counts				15.96
Goats	Total	Counts				84
	Minimum	Counts				1
	Maximum	Counts				49
	Average	Counts				8.82
Chickens	Total	Counts				97
	Minimum	Counts				1
	Maximum	Counts				60
	Average	Counts				12.10
Ducks	Total	Counts				22
	Minimum	Counts				2
	Maximum	Counts				20
	Average	Counts				6.20
Percentage of household by ownership kept	Cattle	%				37
	Chicken	%				28
	Goat	%				19
	Ducks	%				14
	Dogs and cats	%				2
Production parameters	Age at first calving	Year				5.1
	Age at first service	Year				4.8
	Calf mortality	%				1.8
	Weaning age	Month				11
	Lactation length	Month				9.4
	Milk yield					
	Early stage lactation					3.0
	Mid stage lactation					2.1
Late stage lactation					1.3	

Parameter	Specification	Unit	Gairo village	Msingisi village	Ukwamani	Total / Average
Average acreage per household in 2000/01 growing season	Maize	Acres/household				14.36 (n= 119)
	Sweet potato	Acres/household				1.73 (n = 30)
	Groundnuts	Acres/household				3.03 (n =57)
	Sorghum	Acres/household				3.64 (n = 16)
	Millet	Acres/household				3.35 (n = 21)
	Tomatoes	Acres/household				0.59 (n = 8)
	Beans	Acres/household				1.83 (n = 53)
	Forage	Acres/household				5.75 (n = 2)
	Multipurpose tree	Acres/household				1.71 (n= 7)
	Grazing	Acres/household				3.78 (n= 18)
Constraints facing livestock production in the study area	Credit	Counts				5
	Animal Disease	Counts				18
	Unavailability of improved breeds	Counts				3
	Lack of grazing area	Counts				12
	Livestock theft	Counts				20
	Long dry season	Counts				1
	Lack of technical know how	Counts				8
	Unavailability of veterinary services	Counts				5
High price of acaricides and drugs	Counts				35	

Project code: 025**Project title:** Development of Farm Level Technologies for Improving Productivity of Small Ruminants in the Eastern Zone of Tanzania**General objective / Purpose:** To improve productivity and disease situation of small ruminants in order to increase food security and household income for small-scale farmers in particular women in Eastern and Southern Highlands zones of Tanzania.**Specific objectives :**

- i. To obtain comparative baseline information on the productivity, disease prevalence and management, resource allocation and marketing of small ruminants.
- ii. To record and document local knowledge systems on the management of small ruminants,
- iii. To conduct cross-sectional study on the prevalence of health problems of small ruminants and rank them according to their importance in hampering production.
- iv. To develop and test on-farm feeding packages using locally available resources for improved feeding of small ruminants
- v. To develop and test disease control packages for improved disease management practices including *ethno*-veterinary medicine.
- vi. To develop a farmer- friendly recording systems and use it for the purposes of enabling selection of the best breeding animals
- vii. To sensitize farmers on the role of small ruminants with respect to food security and household income
- viii. To develop appropriate extension packages and train farmers on ways of sustaining the developed technologies
- ix. To assess existing and new forms of farmers organizations.

Source of quantitative information: Key informants, Group discussion and Individual contact farmers**Table 16. Project Specific Technical Baseline Data for Project Code Number 025**

Parameter	Specification	Unit	Village/Area-Mondama-Zingara	Village/Area-Langali	Village/Area-Msingisi	Total / Average
Major livestock production	Sample size(n)		N=6	N=7	N=8	
	Marketing	%	16.7	57.10	87.50	
	Capital	%	33.3	14.30	0.00	
	Lack of veterinary service	%	50.00	0.00	12.50	
	Lack of water	%	0.00	28.60	0.00	
	Sample size	10	10	10	10	
	Trypanosomiosis	Mean score	1.64	3	1.9	
	Anaplasmosis	Mean score	2.13	2	1.90	
	Heat water	Mean score	2.00	240	4.30	
	CCPP	Mean score	3.75	2.30	4.3	
Anthrax	Mean score	0.00	6.00	6.00		

Parameter	Specification	Unit	Village/Area-Mondama-Zingara	Village/Area-Langali	Village/Area-Msingisi	Total / Average
Distribution of respondent by technologies *	Sample size (n)		10	10	10	
	Castration	%	30	40	20	
	Disease control	%	20	30	10	
	Improved animal house	%	10	10	10	
	Pest control	%	10	20	20	
	Selection	%	10	20	10	
	Pasture establishment	%	0	20	0	
Land Ownership	Sample size		28	29	27	84
	Male	Acre	4 (n=13)	5 (n=10)	6 (n=16)	
	Female	Acre	2 (n=2)	3 (n=7)	6.7 (n=15)	
	Both	Acre	4.5 (n=13)	4.5 (n=15)	8.5 (n=6)	
Ownership of sheep	Male	Number	0	0	5 (n=12)	
	Female	Number	0	0	0	
	Both	Number	0	4 (n=8)	4 (n=9)	
Ownership of goats	Male	Number	11 (n=11)	4 (n=2)	7 (n=7)	
	Female	Number	7 (n=2)	6 (n=5)	7 (n=3)	
	Both	Number	20 (n=14)	6 (n=20)	6 (n=6)	
Ownership of chicken	Male	Number	10 (n=10)	6 (n=4)	8 (n=9)	
	Female	Number	3 (n=2)	7 (n=6)	8 (n=9)	
	Both	Number	30 (n=10)	9 (n=14)	9 (n=6)	
Livestock Management system for goats	Sample size (n)		10	10	10	
	Grazing	%	66.7	100	100	
	Free	%	33.3	0	0	
Livestock Management system for sheep	Sample size (n)		10	10	10	
	Grazing	%	80	80	100	
	Free	%	20	20	0	

*Technologies were mutually exclusive, hence percentage do not necessary add to 100

Project code: 026

Project title: Design - management interactions in smallholder irrigation system: A case study of the Usangu plains

General objective / Purpose: To improve procedures for design and management of water control technology in gravity irrigation systems

Specific objectives:

- i. To study and evaluate the way indigenous irrigation systems operate and compare them with those of improved systems using Participatory Rapid Assessment (PRA) techniques
- ii. To evaluate the efficiency of water use sample farms of both systems
- iii. To investigate from the water users suitable water control structures for their use
- iv. To develop water control structures from farmers' point of view
- v. To test the effectiveness of the developed water control structures in a sampled farms

Source of quantitative information: Group discussion, individual contact farmers, secondary information and village meeting

Table 17: Project Specific technical baseline data for project code number 026

Parameter	Specification	Unit	Village/Area Mwawale	Village/Area: Mwaluma	Village/Area: Ihai kibaoni	Total / Average
Ranking of crops	Maize	No.	1	1	1	1
	Paddy	No.	2	2	2	2
	Beans	No.	3	3	4	3
	Tomatoes	No.	7			6
	Sweet potatoes	No.	4	4		4
	Cow peas	No.	5	6	3	7
	Sugarcane	No.	6	5		5
Imported food crops	Maize					
	Beans	No.	1	2	2	1
	Paddy	No.	3	1	1	4
	Sweet potatoes	No.	2			2

Table 17: Project Specific technical baseline data for project code number 026 (contd.)

Parameter	Specification	Unit	Village/Area Mwawale	Village/Area: Mwaluma	Village/Area Ihai kibaoni	Total / Average
Means of acquiring land	Inheriting		47	70	21	45
	Given by village	%	32	10	63	38
	Purchase	%	21	10	5	15
	Other	%				
Farmer hiring land	Percentage	%	71	50	90	40
Farmers with fertile soil (perception)	Percentage	%	71	50	90	71
Reason for fallowing	Shortage of water	%	25	50	60	50
	Shortage of labour	%			30	15
	Other	%	75	50	10	35
Mechanized ploughing	Percentage	%	67	18	100	56
Mechanized harrowing	Percentage	%	22			14
Mechanize	Percentage	%	38			9
Pudding	Mechanize weeding	%				0
	Mechanize spraying.	%	50	20		11
	Mechanize transplant	%	71	20		19
	Hire machine	%	28	37	100	
	Hire labour	%	17	9	100	86.4
	Use household labour	%	81	100		86.4
Participation in extension groups	Over all participation	%	25		25	18.5
	Irrigation participation	%	100	33	38	54.5
	Farmers cooperatives	%		67	62	45.5
Availability of extension advice. Source of information - water distribution	Extension officer	%	5.9	9.1	15.8	10.7
	Radio	%				2.1
	Field days	%	5.9			2.1
	NGO'S	%				
	Other(fellow)	%	88.2	90.9	84.2	85.1

Project code: 027

Project title: Development and Application of Appropriate technologies for Milk Collection, Processing and Marketing by Smallholder Dairy Farmers and Traditional Livestock Keepers in the Southern Highlands Zone of Tanzania

General objective / Purpose: The main objective of the project is to develop viable and replicable small-scale, low cost post-harvest milk processing and marketing system for smallholder dairy farmers based on indigenous and/or improved milk processing technologies. The project will aim at improving food security and economic welfare of smallholder dairy farmers and livestock keepers in the Southern Highlands zones.

Specific objectives :

- i. Carry out market research to identify the technical and socio-economic constraints facing small-scale dairy farmers in urban and pen-urban areas and pastoralists in rural areas of the Southern Highland zone in marketing their milk and identify potential areas for intervention.
- ii. Evaluate the technical and economic viability of appropriate technologies for preservation of raw milk at village level with or without the use of electricity
- iii. Develop and evaluate the technical and economic viability of appropriate technologies for processing of milk into preserved products with or without the use of electricity
- iv. Develop and evaluate the technical and economic viability of appropriate milk packaging and marketing technologies with or without the use of electricity
- v. Develop and evaluate the technical and economic viability of complete milk processing modules appropriate for rural situations with or without electricity
- vi. Train farmers/business entrepreneurs in improved milk handling, processing and marketing techniques
- vii. Improve household incomes, food and nutrition security of small-scale dairy farmers and traditional livestock producers in the Southern Highland zone, Tanzania.

Source of quantitative information: Individual contact farmers

Table 18: Project Specific technical baseline data for project code number 027

Parameter	Specification	Unit	Village/Area: Lulanzi	Village/Area: Ng'uruhe	Village/Area: Kidabaga	Village/Area: Vwawa	Village/Area: Mahenje	Village/Area: Iyunga
Proportion of income from milk	Sample size		18	14	16	18	14	20
	100%	No.	0	0	0	0	0	0
	75%	No.						
	50%	No.						
	25%	No.						
	0%	No.						

Table 18: Project Specific Table 18: Project Specific technical baseline data for project code number 027 (contd.)

Parameter	Specification	Unit	Village/Area: Lulanzi	Village/Area: Ng'uruhe	Village/Area: Kidabaga	Village/Area: Vwawa	Village/Area: Mahenje	Village/Area: Iyunga
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technical baseline data for project code number 027 (contd.)

Parameter	Specification	Unit	Village/Area: Lulanzi	Village/Area: Ng'uruhe	Village/Area: Kidabaga	Village/Area: Vwawa	Village/Area: Mahenje	Village/Area: Iyunga
Milk availability in household	Locally processed	No.	1	1	2	0		
	Purchased raw	No.	0	1	4	0		
	Own produced raw	No.	8	5	5	12		11
	Milk not available	No.	9	7	5	6		9
Amount of milk not sold		Litres/day						
Distribution of cattle and goats in the study area	Number of traditional cattle	No.	81	79	58	64	0	3
	Number of Dairy cattle	No.	19	21	42	36	0	97
	Number of Traditional goats	No.	96	86	87	100	0	92
	Number of Dairy goats	No.	4	14	13	0	0	8
Livestock classes	Milk cows	%	20.7	19.8	12.9	28.4	39.3	40
	Dry cows	%	11.4	45.6	20.8	29.4	23.2	33.3
	Calves	%	8.7	31.7	12.9	17.6	33.9	23.3
	Bulls	%	1.6	2.7	18	24.5	3.6	3.3
	Milking goats	%	1.6	0	7.9	0	0	0
	Dry goats	%	1.6	0	12.4	0	0	0
	Kids	%	1.6	0	0	0	0	0
	ewes	%	54.4	0	0	0	0	0
Production levels	> 500	L/day	0	0	0	0	0	0
	300 – 500	L/day	0	0	0	0	0	0
	200 – 300	L/day	1	0	0	1	1	1
	100 – 200	L/day	0	0	0	0	0	0
	50 – 100	L/day	0	1	1	0	0	0

	Less than 50	L/day	0	0	0	0	0	0
	Total	L/day	1	1	1	1	1	1

Table 18: Project Specific technical baseline data for project code number 027 (contd.)

Parameter	Specification	Unit	Village/Area: Lulanzi	Village/Area: Ng'uruhe	Village/Area: Kidabaga	Village/Area: Vwawa	Village/Area: Mahenje	Village/Area: Iyunga
Source of marketing information	Southern Highlands Dairy Development Project	%	7.7	7.7	23.1	7.7		-
	Government leaders	%	-	-	50%	-	-	-
	Milk cooperatives	%	10.7	3.6	-	35.7	3.6	39.3
	News Papers	%	-	-	-	25	-	50
	Milk Business Networks	%	10.7	7.1	14.3	14.3	3.6	10.7
	Dairy Processing Factories	%	33.3	33.3	16.7	16.7	-	-
Frequency of use of home made products	Boiled milk	%	6 (75)	3 (60)	3 (60)	8 (61.5)	-	6 (100)
	Raw milk	%	1 (12.5)	1 (20)	1 (7.7)	1 (7.7)	-	0
	Fermented (Normal)	%	1 (12.5)	1 (20)	4 (30.7)	4 (30.7)	-	6 (100)
	Fermented (Thick)	%	0	0	0	0	-	0
	Butter	%	0	0	0	0	-	0
	Ghee	%	0	0	0	0	-	0
Cheese	%	0	0	0	0	-	0	

Table 18: Project Specific technical baseline data for project code number 027 (contd.)

Parameter	Specification	Unit	Village/Area: Lulanzi (N = 9)	Village/Area: Ng'uruhe (N = 5)	Village/Area: Kidabaga (N = 9)	Village/Area: Vwawa (N = 12)	Village/Area: Mahenje (N = 1)*	Village/Area: Iyunga (N = 11)
Processed Milk Available in Household	Local processed pasteurised milk	%	1	1	2	0	0	0
	Locally processed UHT milk	%	0	0	0	0	0	0
	Imported UHT milk	%	0	0	0	0	0	0
	Canned milk powder	%	0	0	0	0	0	0
	Canned Evaporated/ Condensed milk canned powder	%	0	0	0	0	0	0
	Loose (polythene) packed milk powder	%	0	0	0	0	0	0
	Own produced raw milk	%	8	5	5	12	1	11
	Purchased raw milk	%	0	1	4	1	1	1

Table 18: Project Specific technical baseline data for project code number 027 (contd.)

Parameter	Specification	Unit	Village/Area:	Village/Area:	Village/Area:	Village/Area:	Village/Area:	Village/Area:
			Lulanzi (N = 7)	Ng'uruhe (N = 4)	Kidabaga (N = 5)	Vwawa (N = 12)	Mahenje (N = 1)	Iyunga (N = 12)
Proportion of morning milk not sold as required	100%	%	0	0	1 (20)	1 (8.3)	1	2 (16.7)
	75%	%	0	0	0	1 (8.3)	0	2 (16.7)
	50%	%	0	0	0	2 (16.7)	0	3 (25)
	25%	%	3 (42.9)	3 (75)	0	2 (16.7)	0	1 (8.3)
	10%	%	2 (28.6)	0	1 (20)	3 (25)	0	2 (16.7)
	0%	%	2 (28.6)	1 (25)	3 (60)	3 (25)	0	2 (16.7)
	Total	%	7 (100)	4 (100)	5 (100)	12 (100)	1	12 (100)
Proportion of milk sold during the rain season	100%	%	0	0	3 (60)	1 (8.3)	1	1 (9.1)
	75%	%	6 (85.7)	4 (80)	1 (20)	8 (66.7)	0	8 (72.7)
	50%	%	1 (14.3)	1 (20)	0	3 (25)	0	2 (18.2)
	25%	%	0	0	0	0	0	0
	10%	%	0	0	1 (20)	0	0	0
	0%	%	0	0	0	0	0	0
	Total	%	7 (100)	5 (100)	5 (100)	12 (100)	1	11 (100)

Table 18: Project Specific technical baseline data for project code number 027 (contd.)

Parameter	Specification	Unit	Village/Area: Lulanzi	Village/Area Ng'uruhe	Village/Area Kidabaga	Village/Area Vwawa	Village/Area Mahenje	Village/Area Iyunga
Constraints (ranking) faced by the groups of Mbeya and Iringa region	Poor roads	Mean	4.5	4.5	5.17	5	-	5
	Low supply of milk	Mean	3.5	3.5	1.7	4.4		5.6
	Distance from markets	Mean	1.0	1.0	4.7	3.8		4.0
	Lack of market	Mean	2.8	3.0	3.4	1.78	2.0	1.4
	Lack of cooling facilities	Mean	1.7	1.7	1.4	1.7	1.0	1.73
	Lack of electricity	Mean	2.5	2.75	3.6	2.38	3	2.63

Project code: 028**Project title:** Strengthening Farmers' accessibility to information input and market in Tanzania through existing and new forms of farmers' organisations**General objective / Purpose:** To stimulate social processes that unleash the creative skills of farmers in order to create a permanent movement of farmers' organizations driven by rural communities.**Specific objectives :**

- i. To identify and describe existing and emerging forms of farmers organisations
- ii. Based on the results of (i) to provide strategies for strengthening existing farmers organisations and establish new (ideal) forms of organisations
- iii. To carry out pilot farmers organisations projects in selected rural communities

Source of quantitative information: Group meetings, Key informants, Group discussion, Individual contact farmers and Official files**Table 19. Project Specific Technical Baseline Data for Project Code Number 028**

Parameter	Specification	Unit	Village/Area Mkindo	Village/Area: Lusanga	Village/Area Sonjo	Village/Area: Mbasa	Total / Average
General characteristics of the study villages	Number of families	Counts	1700	963	224	870	
	Population	Counts	14733	6741	1073	6884	
	Number of adult workers	Counts	2036	2460	346	1502	
Number of respondents involved in PRA workshops in the project villages	Village leaders	Counts	3	3	3	3	
	SFG members	Counts	58 (F = 31)	37 (F = 21)	60 (F = 37)	59 (F = 39)	
	Extension agents	Counts	1 (M = 1)	1 (F = 1)	1 (M = 1)	1 (F = 1)	

Table 19. Project Specific Technical Baseline Data for Project Code Number 028 (contd.)

Parameter	Specification	Unit	Village/Area Mkindo	Village/Area: Lusanga	Village/Area: Sonjo	Village/Area: Mbasa	Total / Average
Ownership of economic services per village	Tractor	Private	10	3	-	3	
		Villagers'	-	-	-	-	
	Oxcart	Private	2	-	-	-	
		Villagers'	-	-	-	-	
	Shops	Private	18	4	1	2	
		Villagers'	-	-	-	-	
	Restaurants	Private	4	10	-	2	
		Villagers'	-	-	-	-	
	Guest house	Private	1	-	-	-	
		Village	-	-	-	-	
	Milling machine	Private	12	-	2	2	
		Villagers	-	-	-	-	
	Input shop	Private	-	-	-	-	
		Village	-	-	-	-	
Village market			YES	YES	NO	NO	

Project code: 029

Project title: Development and promotion of improved processing, packaging and storage of sweet potato and cassava for diversification of use and commercialisation of value added products under smallholder farmer conditions

General objective / Purpose: to increase the role played by sweet potato and cassava in meeting household food security requirement and in generating income of the growers and to alleviate the drudgery in the processing operations.

Specific objectives :

- i. Identify and document the traditional cassava and sweet potato storage, processing and packaging practices used in the eastern zone of Tanzania.
- ii. Development technologies for improved storage, processing and packaging for the rural areas.
- iii. Develop and test sweet potato and cassava products through improvement of tradition products and developing new ones
- iv. Identify and promote cultivars suitable for the various products developed by the project.
- v. Disseminate successful technologies and products to rural and urban area through different channels including publications and workshops.

Source of quantitative information: key informant, group discussion, and individual contact farers

Table 20: Project Specific technical baseline data for project code number 029

Parameter	Specification	Unit	Village/Area: Iheje/ Gairo	Village/Area: Kibaha	Village/area Muheza	Total / Average
Farmers carrying out fresh cassava/ sweet potato storage using different containers a) Cassava b) Sweet potato	Sample size	Number	30	52	48	130
	Using Hessian bags	Number		32	40	130
	Using tins	Number		1	1	2
	Using sacks	Number		5	1	6
	Plastic buckets	Number			1	1
	Racks	Number			4	4
	Other method (e.g. basket, heaps)	Number			3	3
	Using Hessian bags	Number	12			12
Other methods (e.g. basket, heaps)	Number	3			3	

Table 20: Project Specific technical baseline data for project code number 029 (contd.)

Parameter	Specification	Unit	Village/Area: Iheje/ Gairo	Village/Area: Kibaha	Village/area Muheza	Total / Average
Farmer carrying of dried cassava/ sweet potato products using different containers a) Cassava b)Sweet potato	Using Hessian bags	Number		11	13	24
	Using tins	Number		1	1	2
	Using sacks	Number		5	6	11
	Plastic buckets	Number			1	1
	Other methods (e.g. Basket, heaps)	Number		5	6	11
	Using Hessian bags	Number				1
	Other methods (e.g. basket, heaps)	Number				3
Farmers processing and storing cassava flour using different containers	Plastic bucket			4	5	
	Tin			5	1	6
	Hessian			2	6	8
	Sack			1	1	2
	Using other method					3
Mean harvest process and storing cassava flour using different containers	Cassava	Bags		31.55	40.35	71.90
	Plastic bucket	bags		4	5	
	Tin			5	1	6
	Hessian			2	6	8
	Sack			1	1	2
	Using other methods			3		3
Mean harvest of fresh cassava/sweet potato per household per season	Cassava	Bags				
Household carrying out fermentation of cassava products	Sweet potato	Bags				
	Cassava	Number		17	19	36
Marketed fresh produce per season per household	Cassava	Bags		20.11	33.10	53.22
	Sweet potato	Bags	15.9			15.9
Marketed processed product per season per household	Dried cassava	Number of farmers involved		3	10	13
	Fermented cassava			1	1	2
	Dried sweet potato					
Equipment used to process sweet potato and/or cassava	Machines	Number used	0	0	0	0
Farmers preparing composite flours	Farmers	Number	0	0	0	0
Number of products packaged for commercialisation	Packaged products	Number	0	0	0	0

Project code: 030

Project title: Optimisation of on Farm Regimes for Controlling Ticks and Tick Borne disease for Smallholder Farmers of Dairy and Traditional Zebu Cattle

General objective / Purpose:

To enhance the contribution of livestock in household income and food security for smallholder farmers of dairy and traditional zebu cattle

Specific objectives :

- i. To conduct a socio economic assessment of tick borne diseases (TBD) and their practices used for their control.
- ii. To establish the intensity of tick infestations on cattle and the spatial and temporal distribution of morbidity and mortality associated with TBD, with particular reference to East coast fever(ECF).
- iii. To optimise the performance of preventive and therapeutic on farm regimes for controlling tick borne diseases (TTBD).
- iv. To train target stakeholders (male and female small holders (male and female smallholder farmers) on optimised control strategies for ticks and tick borne disease.

Source of quantitative information: Village meeting, Key informants, Group discussion, Individual contact farmers and, Physical check on the spot.

Table 21a: Project Specific technical baseline data for project code number 030

Parameter	Specification	Unit	Njombe	Mellela:	Wami Dakawa:	Village/Area:	Total
Acaricide use	Household	Number	17 (n=24)	4 (n=4)	9 (n= 20)	ALL	
		%	71	100	45		
Utupa use	Household	Number	4 (n=24)	NA	NA	ITULIKE	8
		%	17				
TBD thermotherapy	Household	Number	NA	4 (n=4)	18 (n=20)	ALL	
		%	NA	100	90		
No tick control	Household	Number	3 (N=24)	0 (n=4)	11 (n=20)	ALL	
		%	12	0	55		

Table 21b. mean tic counts ,prevalence of Theileria parasites and prevalence of t. parva antibodies in cattle under different tick control regimes

Tick control	Tick count	Rainy season			Dry season			
		Piroplasm parasitaemia	Shozont parasitosis	T.Parva antibodies	Tick count	Piroplasm parasitemia	Schizont parasitosis	T. Parva antibody
No control	25.7	0.08	1.66	72.05	8.12	0.17	0.47	37.98
Acaricides	0.21	0.0	0.00	54.02	0.42	0.02	0.17	23.46
Utupa	0.0	0.0	0.0	66.6	0.0	0.0	0.0	10.33

Project code: 031**Project title:** Development of Nutritional Guidelines for Diet Improvement in Iringa and Morogoro regions**General objective / Purpose:** To improve diets of the people in Morogoro and Iringa regions for better nutritional status and health by providing nutritional guidelines, information and knowledge (education) on nutrition.**Specific objectives :**

- i. To conduct nutrition information/ knowledge needs assessment
- ii. To document foods commonly consumed in the two regions
- iii. To determine the nutrient composition of the foods commonly consumed in the regions
- iv. To improve diets using locally available foods in the areas
- v. To develop nutritonal guidelines for better eating patterns in Morogoro and Iringa regions
- vi. To improve nutritional knowledge of the people by developing nutrition information materials for distribution to stakeholders

Source of quantitative information: Group discussion**Table 22. Project Specific Technical Baseline Data for Project Code Number 031**

Parameter	Specification	Unit	Village/Area Image	Village/Area Kalenga	Village/Area Changa	Village/Area Mwarazi	Village/Area: Kichangani	Village/Area: Kidudwe
Weight for age underweight	Children below 5	Number	44 (n=145)	23 (n=96)	18 (n=77)	13 (n=57)	15 (n=68)	36 (n=152)
		%	30.3	24	23.4	22.8	22.1	23.7
Underweight female	Female > 17	Number	2 (n=53)	9 (n=55)	6 (n=45)	4 (n=25)	4 (n=42)	5 (n=67)
		%	3.8	16.4	13.3	16.0	9.5	7.5
Height for age	Children below 5	Number	93 (n=145)	44 (n=95)	45 (n=77)	33 (n=57)	26 (n=68)	70 (n=152)
		%	64.1	46.3	58.4	57.9	38.2	46.1
Prevalence of anaemia	Children below 5	Number	14 (n=46)	9 (n=21)	31 (n=32)	14 (n=17)	11 (n=17)	26 (n=44)
		%	30.4	42.9	96.9	82.4	64.7	59.1
	Children 6 to 12 yrs	Number	13 (n=70)	9 (n=47)	35 (n=36)	23 (n=25)	19 (n=37)	34 (n=70)
		%	18.8	19.1	97.2	92	51.4	48.6
	Men ages > 15 years	Number	17 (n=59)	21 (n=49)	20 (n=28)	13 (n=19)	14 (n=26)	28 (n=65)
		%	28.8	42.9	71.4	68.4	53.8	43.1
	Female above 12 years (non- pregnant)	Number	10 (n=72)	32 (n=77)	44 (n=53)	30 (n=38)	32 (n=53)	51 (n=89)
		%	13.9	41.6	83	78.9	60.4	57.3

Table 22. Project Specific Technical Baseline Data for Project Code Number 031 (contd)

Parameter	Specification	Unit	Village/Area Image	Village/Area Kalenga	Village/Area Changa	Village/Area Mwarazi	Village/Area: Kichangani	Village/Area: Kidudwe
Mean haemoglobin concentration		Number	n=250	n=196	n=151	n=99	n=134	n=277
		g/gl	12.8	12.5	9.7	10.18	11.5	11.71
Wasting weight/height	Children < 5yrs	Number	0 (n=145)	0 (n=96)	3 (n=77)	0 (n=77)	4 (n=68)	2 (n=152)
		%	0	0	3.9	0	5.9	1.3
Underweight	Males > 17 yrs	Number	0 (n=50)	22 (n=43)	6 (n=28)	7 (n=19)	6 (n=23)	19 (n=58)
		%	18	51.2	21.4	36.8	26.1	32.8

Project code: 032

Project title: Improving Food and Income Security of Female farmers Through the Introduction of Appropriate Cropping Systems in Selected Villages in Morogoro.

General objective / Purpose: Introduction of appropriate cropping systems in selected villages of Morogoro.

Source of quantitative information: Group discussion

Table 23. Project Specific Technical Baseline Data for Project Code Number 032

Parameter	Specification	Unit	Village/Area Mkindo	Village/Area: Hembeti	Village/Area: Ulaya	Total / Average
Village population	Male	Counts	2307	1294	509	
	Female	Counts	2426	1425	554	
	Able	%	43	37%	50	
Household characteristics	Number of Households	Counts	1700	609	261	
	Average size	Counts	7	5	6	
	Average farm size	Acre	4	5	7	
Crop yields	Rice rain	Bags/acre	106			
	Rice irrigation	Bags/acre	25 - 30	20 - 25		
	Rice				7	
	Maize	Bags/acre	8	8 - 9	15	
	Sorghum	Bags/acre	4	5 - 6		
	Beans	Bags/acre			4	
	Sesame	Bags/acre			3	

Project code: 033**Project title:** On-station and on-farm Evaluation of Improved Pigeon pea Varieties in Eastern Zone**General Objective :** To identify and make available to farmers appropriate improved short-, medium - and long-duration pigeon pea varieties, which are high yielding, marketable and acceptable to smallholder farmers.**Specific objectives :**

- i. To evaluate the performance of selected promising improved short-, medium - and long-duration pigeon pea varieties for adaptability to
- ii. Different agro-ecologies of Eastern Zone
- iii. To evaluate improved short-, medium- and long-duration pigeon pea varieties for *fusarium* wilt resistance and tolerance to major pigeon pea insect pests
- iv. To evaluate the performance of selected promising improved short-, medium - and long-duration pigeon pea varieties on farmers' fields under farmer management.
- v. To determine the farmer acceptability of selected promising improved short-, medium - and long-duration pigeon pea varieties that have performed well on-station trials.

Source of quantitative information: Village meeting, Key informants, Group discussion and Individual contact farmers**Table 24. Project Specific Technical Baseline Data for Project Code Number 033**

Parameter	Specification	Unit	Village/Area Lunga	Village/Area Mbwewe	Village/Area Mkata	Village/Area Kabuku-ndani	Average
Farmer involved in groups	Male	Number	18	16	12	9	
	Female	Number	10	11	10	8	
Population	Male	Number	963	2442	2902	2090	
	Female	Number	956	2664	3857	3120	
Yields	Maize	kg/ha	300-600	300-500	200-500	200-600	250-550
	Pigeonpea	kg/ha	200-700	100-500	200-500	200-500	175-550
	Cowpea	kg/ha	200-500	500-800	400-700	250-700	340-670
	Cassava	kg/ha	7500	5000	2500	2000	4250
	Green gram	kg/ha	200-450				
Food insecurity	Sorghum Population	kg/ha %		500-750			
Food security	farmers involved in Research	Number	60	80	50	90	70
		Number	4	2	5	1	3

Project code: 034

Project title: Impact of Macro-Economic Policy Reforms on Agricultural Productivity, Food Security and Poverty in Tanzania

General objective / Purpose: To investigate how micro economic reforms have affected agricultural productivity and welfare of smallholder farmers. In terms of food and income.

Source of quantitative information: Formal Interview using questionnaire

Table 25a. Project Specific Technical Baseline Data for Project Code Number 034

Parameter	Specification	Unit	Rungwe District	Njombe District	Total / Average
Sample size	Farmers No.	15	Bukuku		
		21	Busokela		
		19	Pakati		
		58	Ukukwe		
		18	Isokolo		
		18		Idamba	
		17		Aigomonyi	
		20		Imalinyi	
		15		Mtwango	
		19		Wangingombe	
		20		Makambako	
		1		Mdadu	
		16		Mdandu	

Table 25b. Project Specific Technical Baseline Data for Project Code Number 034

Parameter	Specification	Unit	Rungwe & Njombe District	Total / Average
Sex	Male	Number	166	
	Female	Number	89	
Age	18-50	Number	161	
	>50	Number	90	
Marital Status	Married	Number	111 (46.8%)	
	Single	Number	83 (35%)	

Table 25b. Project Specific Technical Baseline Data for Project Code Number 034 (contd.)

Parameter	Specification	Unit	Rungwe District	Total / Average
Main source of Income	Food crop		157 (64%)	
	Cash crop		50(20%)	
Household Average Income	TAS		282,930	
Earned income by gender	Male		108 (23%)	
	Female		125 (26%)	
Land acquisition	Inheritance	%	65 (n=384)	
	Relatives	%	4 (n=28)	
	Bought	%	15 (n= 92)	
	Rent	%	2 (n=15)	
	Village Govt	%	10 (n= 61)	
Crop Area (Acres)	Maize	Acre	2.25	
	Beans	Acre	1.50	
	Banana	Acre	1.60	
	Round potato	Acre	1.95	
	Tea	Acre	2.20	
	Coffee	Acre	29.60	
	Sunflower	Acre	1.86	
	Rice	Acre	2.50	
Crop market outlets Maize Beans	Local (village)	%	21 (n=53)	
	Distant	%	20 (n=51)	
	Local (village)	%	16	
	Distant	%	14	
Revenue from crops	Round potato	%	38	
	Banana	%	19	
	Maize	%	13	
	Coffee	%	9	
	Beans	%	8	

Table 25c. Project Specific Technical Baseline Data for Project Code Number 034.

Parameter	Specification	N	Minimum	Maximum	Mean	Std deviation
Size of holdings	Farm plot 1 size	243	0.25	105.00	3.0525	6.9927
	Farm plot 2 size	170	0.25	30.00	2.1353	2.7639
	Farm plot 3 size	106	0.25	7.00	1.4835	1.1538
	Farm plot 4 size	52	0.25	14.00	1.6635	2.0436
	Farm plot 5 size	8	0.25	1.50	0.6250	0.4818

Table 25d. Project Specific Technical Baseline Data for Project Code Number 034.

Parameter	Specification	Frequency	Percentage
Source of farm/holding	Inherited	384	64.97
	Provided by relatives	28	4.47
	Bought	92	15.56
	Rented	15	2.54
	Provided by village or government	61	10.32
	Cleared a forest	11	1.86
	Total	591	100.0

Table 25e. Project Specific Technical Baseline Data for Project Code Number 034.

Parameter	Specification	N	Minimum	Maximum	Mean	Std deviation
Five major crops that are grown	Maize crop area	233	0.25	8.00	2.2532	1.3093
	Beans crop area	204	0.25	6.00	1.5150	1.0506
	Banana crop area	88	0.25	7.00	1.6080	1.3162
	Round potatoes crop area	62	0.25	20.00	1.9556	3.0463
	Sweet potatoes crop area	17	0.12	1.00	0.3232	0.2079
	Tea crop area	31	0.50	24.00	2.2032	4.1499
	Coffee crop area	43	0.25	1183.20	29.617	180.1759
	Sun flower area	35	0.10	5.00	1.8600	1.0561
	Rice acreage	12	0.50	8.00	2.5417	1.9593
Acreage for cocoa	10	0.50	4.00	1.7500	1.2076	

Table 25f. Project Specific Technical Baseline Data for Project Code Number 034.

Parameter	Specification	Frequency	Percentage	Valid percent
Means of ploughing	Hand ploughing	220	86.6	88.3
	Drought animals	42	16.3	16.8
	Tractor	2	0.8	0.8
	Total	249	96.9	100.0

Table 25g. Project Specific Technical Baseline Data for Project Code Number 034.

Parameter	Specification	Frequency	Percentage	Valid percent
Type of market for maize	Local markets	53	20.6	51.0
	Traders from distant market	51	19.8	49.0
	Total	104	40.5	100.0
Type of market for beans	Local markets	41	16.0	53.2
	Traders from distant market	35	13.6	45.5
	Total	77	30.0	100.0
Type of market for banana	Local markets	35	13.6	62.5
	Traders from distant market	21	8.2	37.5
	Total	56	21.8	100.0
Type of market for cocoa	Local markets	6	2.3	60.0
	Traders from distant market	2	0.8	20.0
	Total	10	3.9	100.0

Table 25h. Project Specific Technical Baseline Data for Project Code Number 034.

Parameter	Specification	N	Minimum	Maximum	Sum	Mean	Std deviation
Revenue from crops	Revenue from round potatoes	40	1500.00	7000000.00	9389000.00	234725.0000	37.64
	Revenue from tea	27	2070.00	456000.00	2493430.00	92349.2593	9.99
	Revenue from banana	55	500.00	560000.00	4649400.00	84534.5455	18.64
	Revenue from cocoa	9	6000.00	127200.00	608500.00	67611.1111	2.44
	Revenue from coffee	38	3200.00	660000.00	2158310.00	56797.6316	8.65
	Revenue from maize	97	1800.00	180000.00	3171300.00	32693.8144	12.71
	Revenue from beans	75	1200.00	210000.00	2045650.00	27275.3333	8.20
	Revenue obtained from rice crop	9	6000.00	79200.00	216700.00	24077.7778	0.87
	Revenue from sunflower	18	1000.00	81800.00	213100.00	11838.8889	0.85
	Total				24945390.00		

Table 25i. Project Specific Technical Baseline Data for Project Code Number 034.

Parameter	Specification	Frequency	Percent
Price trends for maize	Increasing	137	68.8
	Decreasing	51	25.6
	Has not changed	11	5.5
	Total	199	100.0
Price trends for beans	Increasing	66	53.7
	Decreasing	32	26.0
	Has not changed	21	17.1
	Do not know	3	2.4
Total	123	100.0	
Price trends for banana	Increasing	18	32.1
	Decreasing	24	42.9
	Has not changed	12	21.4
	Do not know	2	3.6
Total	56	100.0	

Table 25j. Project Specific Technical Baseline Data for Project Code Number 034.

Parameter	Specification	Frequency	Percent
Price trends for round potatoes	Increasing	18	37.5
	Decreasing	23	47.9
	Has not changed	7	14.6
	Total	48	100.0
Sun flower price trends	Increasing	12	48.0
	Decreasing	5	20.0
	Has not changed	7	28.0
	Total	25	100.0
Sun flower production trends	Increasing	8	40.0
	Decreasing	9	45.0
	Has not changed	3	15.0
	Total	20	100.0
Status of welfare now relative to 1990	Better off	103	42.6
	Worse off	88	36.4
	Has not changed	51	21.1
	Total	242	100.0

Table 25j. Project Specific Technical Baseline Data for Project Code Number 034.

Parameter	Specification	Frequency	Percent
Major constrictions to agricultural production	Crop disease	2	1.0
	Higher levies	4	1.9
	Unpredictable weather	5	2.4
	Insects pests/vermin/bird pest/weak pesticides	12	5.7
	No support for inputs as used to be /high price of inputs	80	38.3
	Cant afford to hire draft animals	1	0.5
	Unreliable/unpredictable markets, long distances	20	9.6
	Inability to meet qualities of tea	5	2.4
	Inability to cultivate on time due to competition on draft	2	1.0
	Low price of crops	11	5.3
	Lack of capital	30	14.4
	Inputs not available	10	4.8
	High production cost	12	6.7
	No comments	2	1.0
	Labour shortage/old age	11	5.3
	Poor/weak/inferior farm implements	9	4.3
	High transport cost	4	1.9
Low/lack of credit facility	1	0.5	
Total		209	100.0

Project code: 035

Project title: Formulation of Weaning Food for Enhancing Household Food and Nutrition Security with Special Reference to Women

General objective / Purpose: Develop and disseminate simple and appropriate rural-based improved weaning formulations.

Source of quantitative information: Key informants, Group discussion, Individual contact farmers and Secondary Information

Table 26. Project Specific Technical Baseline Data for Project Code Number 035

Parameter	Specification	Unit	Peramiho	Matimira	Total / Average
Population	Female	Number	284	1290	
	Male	Number	203	1230	
	Female	Number	47	452	
	Male	Number	56	248	
Food crop yield	Maize	Bags/acre	8	6	
	Cassava	Bags/acre	12		
	Paddy	Bags/acre	10		
	Sweet potato	Bags/acre	20		
	Beans	Bags/acre	4		
	Finger millet	Bags/acre	2		
Health status	Severe	%	5		
	Malnourished	%	11		
	Healthy	%	85		
Cash crop yield	Tabacco	Kg/acre	300		
	Coffee	Bgs/acre	10		
	Cashew	Bgs/acr	4		
	Sunflower	Bgs/acr	4		

Project code: 036**Project title:** Development of Appropriate Interventions to Enhance Livestock, Meat, Meat, Preservation and Consumption in Rural Areas of Eastern.**General objective / Purpose:** To increase household meat consumption in the rural areas through promotion of local preservation methods.**Specific objectives :**

- i. To establish meat consumption and marketing patterns in selected villages
- ii. To obtain information on existing traditional meat preservation methods and evaluate their potential for improvement, incorporation within the rural meat marketing systems and/or transfer to other areas
- iii. To study local sanitation methods used to produce and preserve meat (meat and shelf life)
- iv. To improve the traditional preservation methods by fabricating and testing of pilot models based on preservation methods such as salting, use of charcoal chillers, solar dryer and smoke kilns and the use of different packaging methods
- v. To evaluate the acceptability and the potential of developed techniques for household use and for use by rural meat retailers

Source of quantitative information: Key informants, Group discussion and Individual contact farmers**Table 27. Project Specific Technical Baseline Data for Project Code Number 036**

Parameter	Specification	Unit	Village/Area Chamakweza	Village/Area Gairo	Total / Average
Sample Size		Number	27	33	60
Livestock marketing	Once per month	Number	0	1	1
		%	-	3	1.7
	Twice per month	Number	27	30	57
		%	100	90.9	95.0
	Once per 2 - 3 months	Number	0	0	0
		%	-	-	-
	Other frequency	Number	-	-	-
		%	-	-	-
	Not Responded	Number	-	2	2
		%	-	6.1	3.3

Table 27. Project Specific Technical Baseline Data for Project Code Number 036 (contd.)

Parameter	Specification	Unit	Village/Area	Village/Area	Total / Average
			Chamakweza	Gairo	
Seasonal for most disposal of animals	Wet season	Number	-	2	
		%	-	6	
	Dry season	Number	14	9	
		%	51.9	27.3	
Any time	Number	13	7		
	%	48.1	21.2		
Not Responded	Number	-	15		
	%	-	45.5		
Animal meat frequently consumed	Cattle	Number	26	31	57
		%	100	96.6	98.3
	Goat	Number	24	11	35
		%	92.4	34.4	60.3
	Sheep	Number	15	1	16
		%	57.7	3.1	27.6
	Poultry	Number	9	16	25
		%	34.6	50	43.1
	Pig	Number	0	3	3
		%	-	9.4	5.2
	Game meat	Number	4	66	
		%	15.4	18.8	
Meat preservation	Never preserved	Number	11	16	
		%	57.9	72.7	
	Sometimes	Number	4	5	
		%	21	22.7	
	Often/regularly preserve	Number	3	1	
		%	15.8	4.5	
	Sun drying method	Number	6	15	
		%	22.2	53.6	
Salting method	Number	21	13		
	%	77.8	46.4		

Table 27. Project Specific Technical Baseline Data for Project Code Number 036 (contd.)

Parameter	Specification	Unit	Village/Area:		Total / Average
			Chamakweza	Gairo	
Perception over preserved meat	Very important	Number	20	21	41
		%	74.1	63.6	68.3
	Time wasting	Number	3	7	10
		%	11.1	21.2	16.7
Not sure	Number	4	5	9	
	%	14.8	15.2	15	
Types of meat most preserved	Beef	Number	12	18	30
		%	80	94.7	88.2
	Goat	Number	6	3	9
		%	40	15.8	26.5
	Sheep	Number	3	1	4
		%	20	5.3	11.8
	Game	Number	1	2	3
		%	6.7	10.5	8.8

Project code: 037

Project title: Improvement of Soil Fertility in Coconut Based Farming Through Crop Rotation

General objective / Purpose: To evaluate the effect of crop rotation on soil fertility under smallholder farmers' field condition in coconut based farming system and recommend appropriate farming systems that will enhance crop production

Specific objectives :

- i. To identify and analyse berries that limit potential utilization of crop rotation.
- ii. To establish production potential of crop rotation.
- iii. To assess production and management costs of crop rotation / intercrop.
- iv. To identify and recommend crop rotation that improves soil productivity

Source of quantitative information: Group discussion, Individual contact farmers

Table 28a. Project Specific Technical Baseline Data for Project Code Number 037

Parameter	Specification	Unit	Pangani	Mkuranga	Total / Average
Farmer using fallow system	Sample size	Number	45	36	
	Using fallow	Number	44	32	
		%	97.8	88.9	

Table 28b. Project Specific Technical Baseline Data for Project Code Number 037

Parameter	Specification	Unit	Village/Area Choba	Village/Area Boza	Village/Area Jaira/madanga	Village/Area: Dundani	Village/Area: Miale	Village/Area Kiparanganda	Total / Average
Soil KCL	0-20 cm depth		5.07	5.20	5.23	5.30	4.20	5.30	
Soil organic carbon		(%)	1.21	1.47	1.34	0.09	0.57	1.51	
Total N		(%)	0.09	0.10	0.06	0.08	0.03	0.11	
CN ratio			13.67	14.25	15.67	11.00	19.00	13.67	
Available P		(Bray)	8.02	0.65	0.37	2.49	0.96	2.47	
CEC		(me/100g)	11.14	10.76	12.45	4.10	2.68	3.99	
Ca			8.10	2.88	7.87	2.50	1.00	2.87	
Mg			2.23	1.80	2.50	0.50	0.40	0.20	
K			0.17	0.38	0.49	0.29	0.02	0.23	
Na			0.53	0.28	0.40	0.26	0.19	0.29	

Project code: 038

Project title: Evaluation of Tillage Practices and Organic Mulch on Yield of Rice and Cowpeas Grown in Sequence under Lowland Rain-fed Culture in Kyela and Bagamoyo Districts.

General objective / Purpose: To improve soil fertility, soil water and weed management and thus yields of rice and cowpeas, through the use of appropriate tillage practices and organic mulch in lowland rain fed culture.

Specific objectives :

- i. To demonstrate the iterative effects of tillage practices, rice husks as organic mulch and legume planting on weed suppression
- ii. To assess the tillage and practices and organic mulch on physical and chemical properties of soil in low land rice production systems
- iii. To assess the fluency of rice husks as organic mulch on various incidences of disease and insect pests to the subsequent rice crop
- iv. To demonstrate the iterative effect of tillage practices rice husks as organic mulch on grain yield of rice and cowpeas
- v. To perform economic analysis of the use of appropriate tillage practices, rice husks and cowpeas in reducing weeds incidences and immersing yields of rice and cowpeas, thereby alleviating poverty among smallholder farmers

Source of quantitative information: Key informants, Group discussion, Individual contact farmers, Formal questionnaire and Secondary information

Table 29. Project Specific Technical Baseline Data for Project Code Number 038

Parameter	Specification	Unit	Village/Area: Kikusya	Village/Area Kilasilo	Village/Area Kilomo	Village/Area Magomeni	Total/Average
Sample size	People	%	20	20	21	23	84
Use of human power		%	78.9	44.4	66.7	30.8	57
Use of tractor power		%	45.5	26.7	100	50	32.7
Use of animal power		%	84.2	70	7.7	10	51.6
Use of mulch		%	52.6	47.4	14.3	31.6	35.9
Kind mulch used	Grass	%	14.3		50	12.5	25.6
	Rice straw	%	71.4	62.5	50	75	64.7
	Rice husks	%	14.3	37.5		12.5	21.4
Total farm area	Mean per farmer	Acres	8.1	5.9	3.7	2.5	
	Range	Acres	0.5 – 93.5	1 – 22	1 – 9	1 – 5	
Area cultivated in season 200/2001	Mean per farmer	Acres	4	9	4	4	

Table 29. Project Specific Technical Baseline Data for Project Code Number 038 (contd.)

Parameter	Specification	Unit	Village/Area: Kikusya	Village/Area Kilasilo	Village/Area: Kilomo	Village/Area: Magomeni	Total/Average
Intensity of land preparation	No till	%	5.3			4.2	2.4
	Reduced tillage	%	47.4	15	10	45.8	30.1
	Maximum tillage	%	47.4	85	90	50	67.5
Range of area of farmland other than rice	Cassava	Acres					0.1 – 3
	Maize	Acres					0.1 – 4
	Sweet potatoes	Acres					0.1 – 3
	Cashew	Acres					0.5 – 2
Methods of planting rice	Transplant	%					16.9
	Broadcast	%					53
	Dibbling	%					30.1
Growing crops immediately after rice		%			100	66.7	83
Crop after rice	Chickpea		22.2			12.5	14.3
	Sweep potato		44.4	100	50	50	38.1
	Cowpeas		33.3		50	25	14.3
	Maize		11.1			12.5	9.5
Rice harvest per farmer	Range	Bags	1 – 22	1 – 58	1 – 15	1 – 20	
Food reserve 3 months after harvest	Range	Bags	0.5 – 5	0.5 – 8	0 – 10	0.5 – 18	
Major rice pests	Grasshoppers	%	35.7	50	11.1	14.3	26.7
	Grabs	%	7.1	50	44.4	7.1	22.2
Major rice diseases	Yellow Mottle Virus	%	80	80			40
	Wilting	%	20	36.4	25	10	23
	Rice Blast	%		18	16.7	10	11.6

Table 29. Project Specific Technical Baseline Data for Project Code Number 038 (contd.)

Parameter	Specification	Unit	Village/Area: Kikusya	Village/Area Kilasilo	Village/Area: Kilomo	Village/Area: Magomeni	Total/Average
Users of inorganic fertilisers		%	66.7	23.1	23.1	19	30.5
Fertiliser application method	Basal application	%	42.9	37.5	25		35
	Top dressing	%	50	50	57	50	55
	Both	%		12.5		25	10
Means of acquiring fertiliser	Purchase	%	100	57.1	100	100	81.3
	Credit	%	28.6				12.5
	Grant	%	14.3				6.3
Inorganic fertilizer used per annum	Range	Kg					1 – 250
Organic fertilizer used per annum	Range	Kg					5 – 750
Common problematic weeds in rice	Couch grass	%	23.5	18.8	27.3	29.4	24.6
	<i>Cyperus spp</i>	%	64.7	12.5	27.3	52.9	41
	Wild rice	%	5.9		18.2		4.9
	Amaranthus	%	5.9			5.9	3.3
	<i>Ramphicarpas pp</i>	%		18.8		5.9	6.6
Weed control methods	Hand hoe	%	94.8	73.3			
	Herbicides	%	5.3				1.4
	Roughing	%		26.7			

Project code: 039

Project title: Promotion of sustainable utilization of draft animal technologies for the improvement agriculture productivity for small holders farmers.

General objective / Purpose: Promote appropriate Draft Animal Power Technologies (DAT) and systems among small holder farmers in the southern highland zone of Tanzania

Source of quantitative information: group discussion, individual contact farmers and key informants.

Table 30a. Cultural practice and implement used

Villages	Activities	Implement used in different activities													
		Plough		Cultivator		Ridger		Hand hoe		Planter		Harrow		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sandulula	Soil tillage	25	96.2			1	3.8							26	100
	Sowing	16	80					3	15	1	5			20	100
Kisilo	Weeding	6	37.5			1	6.3	9	56.2					16	100
	Soil tillage	34	100											34	100
	Sowing	13	72.2					3	16.7	2	11.1			18	100
	Weeding	2	28.6	1	14.2	2	28.6	2	28.6					7	100
Nkundi	Soil tillage	28	100											28	100
	Sowing	20	87					3	13					23	100
	Weeding	3	25	1	8.3			8	66.7					12	100
Matai	Soil tillage	23	95.8			1	4.2							24	100
	Sowing	19	90.4					1	4.8	1	4.8			21	100
	Weeding	10	76.9					3	23.1					13	100
Mayale	Soil tillage	25	100											25	100
	Sowing	1	25					1	25	2	50			4	100
	Weeding			11	100									11	100
Uzia	Soil tillage	22	91.6			1	4.2					1	4.2	24	100
	Sowing	8	61.5					5	38.5					13	100
	Weeding	2	28.6					5	71.4					7	100

Table 30b. Use of DAP and type of DAP transport used

Villages	No of farmer use DAP		Type of animals used				Type of DAP transport used						Activities where DAP used									
			Donkeys		Oxen		Pannier		Cart		Sledge		Cart and pannier		Transport of farm produce		Hiring to neighbours		Transport of farm produce and household		All	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sandulula	26	100	3	11.5	23	88.5	2	8.0	8	32.	12	48	3	12	5	20			20	80		
Kisilo	34	100			34	100			33	97.1	1	2.9			11	32.4			22	64.7	1	2.9
Nkundi	27	100	1	3.6	26	96.4			13	46.4	14	50	1	3.6	7	25			18	64.3	3	10.7
Matai	27	100	2	7.4	25	92.6	2	7.4	15	55.6	10	37			10	37			17	63		
Mayale	13	54.2			14	100	1	7.1	9	64.3	4	28.5			6	40	3	20	4	26.7	2	13.3
Uzia	21	95.5	2	9.5	19	90.5	3	14.	15	71.4	2	9.6	1	4.8	3	14.3			16	76.2	2	9.5

Table 30c. Problems associated with transportation of crops

Villages	Problems when transporting farm to home																					
	Farm to home											Farm to Market										
	Long distance and losses of crops		No problem		Low load capacity		Poor road		Very expensive		Total		Expensive and absence of facilities		Losses and low load capacity		No problems		Time consuming		Total	
N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Sandulula	7	33.3			11	52.4	3	14.3			21	100	1	12.5	7	87.5					8	100
Kisilo	5	50	1	10			4	40			10	100			1	50	1	50			2	100
Nkundi	9	42.9	5	28.8	6	28.6	1	4.8			21	100	1	11.1	2	22.2	4	44.4	2	22.2	9	100
Matai	5	26.3	1	5.3	6	31.6	2	10.5	5	26.3	18	100	5	71.7			1	14.3	1	14.3	7	100
Mayale	2	28.6	1	14.3	1	14.3	3	42.9			7	100			1	50	1	50			2	100
Uzia	2	11.8	4	23.5	6	35.3			3	17.6	17	100	5	35.7	3	21.4	4	28.6	2	14.3	14	100

Project code: 040

Project title: Testing of Improved Fallows for Improving Soil Fertility: The use of Trees and Shrubs that Enhance Availability of Soil Phosphorous and Firewood

General objective / Purpose: To test trees/shrubs species as rotational improved fallows for enhancing soil fertility and hence food security and alleviation of firewood scarcity for women in the southern highlands of Tanzania

Specific objectives :

- i. To establish various multipurpose trees/shrubs potential for enhancing availability of soil phosphorous in rotational improved fallow system
- ii. To evaluate firewood production potential of various multipurpose trees/shrubs species used as rotational improved fallows
- iii. To determine increase in soil organic carbon (OC), nitrogen (N), bases and exchange capacity (CEC) after two years of rotational fallows
- iv. To determine overall improvement in soil productivity resulting from trees/shrubs through measurement of grain yield
- v. To disseminate the proven and preferred various trees/shrubs rotational improved fallow technologies

Source of quantitative information: Individual contact farmers and Secondary Information

Table 31. Project Specific Technical Baseline Data for Project Code Number 040

Parameter	Specification	Unit	Village/Area Ivwanga	Village/Area: Songwe	Village/Area: Mtama	Village/Area: Kitanda	Total / Average
Sample size	-	-	-	-	-	-	
Time spent by households in collecting firewood		Hrs/week	2.3	6.8	2.4	1.25	
Amount spent by households in buying firewood		Hrs/week	1,000	1,000	1,400	800 - 1,000	
Maize yield	Without fertilizer	t/ha	0.70	0.75	0.9	0.85	
	With fertilizer	t/ha	2.50	2.40	3.0	2.80	
Soil reaction	Water	pH	5.33	6.43	5.82	5.84	
Soil Phosphorous		ppm	6.28	5.95	12.03	110.98	
Soil Nitrogen		%	0.17	0.19	0.19	0.19	
Soil Organic Carbon		%	1.98	1.17	2.58	2.19	
Soil Potassium		me/100g	1.23	2.52	0.94	1.02	
Soil Cation Exchange Capacity		me/100g	19.95	17.83	17.92	13.88	

Project code: 041

Project title: *In vitro* micro-propagation for mass production of clean planting materials of desirable banana cultivars

General objective / Purpose: To improve the overall production of banana through massive regeneration of disease and pest free planting materials from both local and introduced desirable cultivars

Source of quantitative information: Key informants, Group discussion, Individual contact farmers, Formal questionnaire and Secondary information

TABLE 32a: major constraints facing banana production in Morogoro rural, Mkulanga and Rungwe Districts (score in %).

		Survey villages					
		Tangeni	Kwelikwiji	Kyimo	Bujela	Mkenge	Mwarusambe
Quality characteristic	High yield	35.7	38.5	21.7	80.0	56.25	23.08
	Good quality	28.6	22.1	26.1	-	6.67	-
	Disease& pest tolerant	21.4	15.4	26.1	26.67	25.00	15.38
	Drought tolerant	10.7	7.1	8.7	6.67	12.50	-
	Early maturity	-	7.1	8.7	6.67	-	-
	Long life span	3.6	7.1	-	-	-	-
	Low latex	-	-	4.3	-	-	-
	Tolerant latex	-	-	4.3	-	-	-
Constraint	Disease and pest	44.4	78.6	81.25	90.90	56.25	23.08
	Drought	22.2	7.1	-	-	6.67	-
	Poor market	5.5	-	6.25	-	25.00	15.38
	Low yield	16.7	7.1	-	-	12.25	-
	Lack of fertilizers	5.5	-	6.25	-	-	-
	Water logging	5.5	-	-	-	-	-
	Snapping	-	-	6.25	9.09	-	-
	Short life span	-	7.1	-	-	-	-

Project code: 042**Project title:** On - farm Development and Promotion of Integrated Disease Management Options**General objective / Purpose:** To reduce yield losses and sustain household food security and income through development and promotion of measures for RYMV disease control in Kyela district.**Specific objectives :**

- i. To conduct a PRA survey to establish baseline data for IDM planning
- ii. To evaluate with farmers elite varieties and breeding lines for resistance to RYMV
- iii. To test on-farm and promote farmer acceptable rice varieties resistant to RYMV as key 1PM component.
- iv. To determine and recommend appropriate time of planting acceptable rice varieties in relation to vector population peaks.
- v. To identify insect vectors that transmits RYMV disease in Kyela and major alternative hosts to enhance deployment of control measures.
- vi. To determine and promote field sanitation practices viz. weeding regimes that reduce incidences and severity of RYMV disease.
- vii. To develop an extension teaching guide on RYMV recognition and management
- viii. To disseminate research findings to other stakeholders.

Source of quantitative information: Village meeting, Key informants, and Group discussion**Table 33. Project Specific Technical Baseline Data for Project Code Number 042**

Parameter	Specification	Unit	Village/Area Lugombo Mwaya	Village/Area: Lukwego	Village/Area: Mababu	Village/Area: Kilwa	Village/Area: Lugombo Ngiga	Village/Area: Itope Bujande	Total / Average
Acreage	Acres	Number	2	2	3	1 - 1.5	3	1.5	
Average rice yield	Kg/acre	Number	200 - 400	160 - 400	200 - 500	400 - 500	200 - 600	20 - 400	
Reported crop losses	Losses/field	(&)	Above 90	About 90	100	90	75 - 95	99	
Farmers who have abandoned field due to RYMV	Sample size unit	No %	10 0.3	15 0.3	12 0.1	20 0.2	20 0.2	15 0.1	82 0.2
Farmer using herbicides	Sample size unit	No	29 0.1	30 0.2	30 0.5	25 0.4	25 0.4	30 1	176 0.42

Table 33. Project Specific Technical Baseline Data for Project Code Number 042 (contd.)

Parameter	Specification	Unit	Village/Area Lugombo Mwaya	Village/Area: Lukwego	Village/Area Mababu	Village/Area Kilwa	Village/Area Lugombo Ngiga	Village/Area: Itope Bujande	Total / Average
Farmers transplanting/drill	Sample size unit	No %	20 0	20 0	16 0.1	16 0.01	16 0.01	24 24 0.1	144 0.036
Farmers planting late due to RYMV	Sample size unit	No %	20 75	20 70	16 95	16 72	16 72	24 70	134 73
Farmers planting improved/ new varieties	Sample size unit	No %	20 0	20 0	16 0	16 0	16 0	24 0	144 0
Farmers attempted control measures(own)	Sample size unit	No %	20 0	20 0	16 0.1	16 0	16 0	24 0.2	144 0.05

Project code: 043

Project title: Verification of Common Bean Varieties Tolerant to Low Soil Phosphorous, Nitrogen & Acidic Conditions

General objective / Purpose: To identify and promote bean varieties that are tolerant to low soil fertility: N in Makoga and Matai division in Njombe and Sumbawanga

Specific objectives :

- i. To establish baseline information in the study area through PRA
- ii. To evaluate soil fertility status in the study area.
- iii. To assess the nitrogen and phosphorus up take efficiency of bean lines tolerant to low soil P, N and K
- iv. To verify the performances of the bean lines that tolerant to either low soil P,N or K on the researcher managed trials.
- v. To evaluate economically, the production performance of 5 bean lines selected from research/farmer managed trials on lager scale
- vi. To promote and demonstrate the production of 2 or one selected bean lines tolerant to lows soil N,P or K among bean growers.

Source of quantitative information: Key informants, Group discussion and Individual contact farmers

Table 34. Project Specific Technical Baseline Data for Project Code Number 043

Parameter	Specification	Unit	Village/Area Mbuza	Village/Area: Matai	Village/Area: Utelewe	Village/Area: Igodivaha	Total / Average
Bean cultivars gown	Local	Counts	9	12	5	5	7.75
	yield	Kg/acre	100	340	1000	150	175
Population size	Men	Counts	632	N.A.	173	235	346.6
	Women	Counts	479	N.A.	257	336	357.3
	Children	Counts	1284	N.A	664	1247	1065.0
Household	Size	Counts	400	1273	288	335	574.00

Table 34. Project Specific Technical Baseline Data for Project Code Number 043 (contd.)

Parameter	Specification	Unit	Village/Area Mbuza	Village/Area: Matai	Village/Area: Utelewe	Village/Area Igodivaha	Total / Average
Soil sample analysis	Soil pH	1.2.5(H2O)	6.14	5.91	5.81	5.23	5.77
	Exchange capacity (EC)	Ms/c	0/02	0.03	0.05	0.03	0.35
	Clay	%	12.0	12.0	50.0	51.0	31.25
	Silt	%	11.5	6.33	23.0	14.5	13.25
	Sand	%	79.5	81.66	27.5	40.5	13.83
	Soil texture	%	Silt loam	Silt loam	Clay	clay	57.29
	Copper	class	0.21	1.00	1.09	0.37	
	Zinc (Zn)	Ppm	3.62	3.08	0.5	0.40	0.82
	Manganese (Mn)	Ppm	32.31	30.86	23.93	32.25	1.90
	Iron (Fe)	Ppm	56.33	62.8	21.8	66.92	29.83
	Total nitrogen (TN)	%	0.15	0.08	0.2	0.10	51.96
	Organic carbon (OC)	%	1.24	0.92	2.43	1.45	0.13
	Phosphorus Brl Ex. mg/kg	Ppm	14.0	7.83	4.05	3.95	1.51
	Boron (Br)	Ppm	0.71	0.56	0.87	0.94	7.45
	Magnesium	Ppm	6.50	6.93	12.30	8.50	0.77
	Cat ion exchange capacity (CEC)	CMO 1(+)/Kg	6.4	6.93	12.3	8.50	8.53
	Calcium (Ca)	CMO 1(+)/Kg	4.2	2.99	1.74	8.50	8.57
	Potassium (K)	CMO 1(+)/Kg	0.98	0.79	0.68	1.35	0.78
	Magnesium	CMO 1(+)/Kg	0.45	0.26	0.41	0.68	0.88
	Sodium (Na)	CMO 1(+)/Kg	0.33	0.646	0.30	0.42	0.39
Hydrogen (H)	CMO 1(+)/Kg	0.075	0.216	0.58	0.31	0.34	
Aluminium	CMO 1(+)/Kg	trace	trace	0.40	.50	0.110	

Project code: 044

Project title: Evaluation of the Effects of Nitrogen and Phosphorous Applications in Conjunction with Tillage Residue Management of Physical and Chemical Characteristics of Soil, Weed, Microbial Population and Diversity on Yield of Maize.

General objective / Purpose: Improve food security and household income for smallholder through nitrogen and phosphorus application, tillage and residue management.

Source of quantitative information: Group discussion and Individual contact farmers

Table 35. Project Specific Technical Baseline Data for Project Code Number 044

Parameter	Specification	Unit	Village/Area Mikese	Village/Area: Michungwani	Total / Average
Soil Type			Ferrasols (Ultisols)	Ferrosols (Ultisols)	
Average soil N		(%)	0.14	0.34	
Average soil C		(%)	1.78	2.78	
Average Bray P		Mg/kg	7.22	2.66	
Soil pH			5.3	5.16	
Ca			8.66	12.0	
Mg			2.5	5.38	
K			0.32	1.54	
CEC		(meq/mg)	11.54	11.86	
Total variable microbial count			5.34×10^5	5.66×10^5	

APPENDIX

Form used to extract project specific technical data from the baseline studies

SUMMARY INFORMATION ON PROJECT SPECIFIC DATA

Project code number: _____

Project title _____

General objective / Purpose: _____

Specific objectives: _____

Source of quantitative information (tick)

Village meeting	Key informants	Group discussion	Individual contact farmers	Other (Specify)	Other (Specify)	Other (Specify)

6. Quantifications (e.g production or other parameters) relevant to the specific objectives

(First row is sample size; the other rows are for quantified parameters relating to e.g. yield, production or other items, depending on specific objectives)

Parameter	Specification	Unit	Village /Area	Village /Area	Village /Area	Total / Average
Sample size	XXXXXXXX	XXXXXXX				