

Food Security and Household Income for Small-holder Farmers in Tanzania

Applied Research with Emphasis on Women

Project Overview

Collaborative Research under the Tanzania Agricultural Research Project Phase 2 (TARP II)

August 2000



Sokoine University of Agriculture



Ministry of Agriculture and Co-operatives



Food Security and Household Income for Smallholder Farmers in Tanzania

Applied Research with Emphasis on Women

*Collaborative Research Under
the Tanzania Agricultural Research Project, Phase Two
(TARP II)*

Issued by

**The Project Co-ordination Office
TARP II - SUA
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August 2000

“ Women in African countries shoulder the major share of household food security, and are involved at every stage of food production...It is much evident that women given the required access to productive assets including technology, would be able to produce far beyond their current level of production ”

Jane Kiano

*This Publication was typeset at
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Preface

The Government of Tanzania has accorded special importance to agriculture because of two main reasons. The first is the relative importance of the sector in the national economy and its contribution to the supply of food and livelihood. Secondly, there has been widespread perception that the sector has underperformed. Thus, special emphasis has been laid on agricultural research as an important driving force for agricultural development.

The overall goal of agricultural research in Tanzania as spelt out in the Agricultural Policy of 1997 is to promote sustainable food security, income generation, employment growth, and export enhancement through the development and dissemination of appropriate and environmentally friendly technologies.

The first National Agricultural and Livestock Research Project (NALRP) was implemented in the period 1989-1997, and this was succeeded by the Tanzania Agricultural Research Project, Phase II (TARP II). During the pre-appraisal of TARP II by a World Bank Team in 1997, various donors (e.g. The Netherlands, Denmark, UK and Norway) expressed willingness to support the Project. On being approached by the Government of Tanzania, Norway expressed willingness to support mainstreaming of Sokoine University of Agriculture (SUA) research efforts into the National Agricultural Research System (NARS) under TARP II. The primary reason for mainstreaming SUA into NARS is to make optimal use of human resource capacity and infrastructure available at SUA (i.e. trained scientists (over 250), technicians and functioning laboratories).

The present document gives an overview of the envisaged research and other key project components to be undertaken as a collaborative effort by the Ministry of Agriculture and Co-operatives (MAC), SUA and relevant Norwegian research institutions. It is hoped that it will serve as a useful source of information to researchers at SUA, MAC, Norwegian collaborating institutions, extension staff, donors and other stakeholders. Contact addresses for any enquiries are given in the Annex.

What is the problem?

The main cause of food insecurity, low income and poverty experienced by smallholder farmers especially women in Eastern and Southern Highlands zones is low crop and animal productivity. Some of the factors, in the Zones directly causing low crop and animal productivity include the following:

- Pests and Diseases
- Low soil fertility
- Inadequate farming technologies for crop production
- Inadequate husbandry practices for livestock production
- Low yielding crop varieties and animal breeds
- High workload of women
- Limited access to markets.

What is the justification for this project?

The majority of the farming communities in the two zones are smallholders. Since most of them are facing food security problems this project aims at improving the situation by combining the forces between research, extension and experiences of farmers. Research will aim at introducing technologies which increase productive efficiency in agriculture, thus assisting in improvement of time management, and thereby helping reduce workload and drudgery for women. Extension on the other hand will spread the message of sound technologies widely and intensively by providing farmers with back-up support in knowledge and technology application.

This Project, therefore, seeks to alleviate production constraints by establishing a close linkage between researchers - extensionists - farmers that can bring about a fruitful tripartite relationship in the struggle for overcoming food insecurity and increasing household incomes

Who are the implementers?

The Ministry of Agriculture and Co-operatives (MAC) is the implementing agency bearing overall responsibility for the success of the project. This Project is a collaborative effort between the Division of Research and Development Institutes in Eastern and Southern Highlands zones and Sokoine University of Agriculture (SUA) and Norwegian agricultural research institutions, i.e. the Agricultural University of Norway (NLH) and the Norwegian School of Veterinary Sciences (NSVS). MAC has delegated day-to-day project management to SUA, which is located in the Eastern Zone. The Norwegian component is co-ordinated by the Centre for International Environment and Development (NORAGRIC) at NLH.

What is the Project Strategy?

Goal of the Project and indicators for measuring success

- The goal of the project is to improve food security and household income of smallholder farmers with emphasis on women in the Eastern and Southern Highlands Zones of Tanzania.
- The primary, direct and intended *beneficiaries* of the Project are: *Male and female smallholder farmers in target villages of the Eastern and Southern Highlands Zones*

Indicators to measure success

- *Reduced incidences of HH food shortages by 2004 as compared to period 1996-1999 in target villages of the Project area*
- *Increased food security in target villages as compared to non-target villages*
- *Increased HH income in target villages as compared to non-target villages.*

Objective of the Project and indicators

The immediate objective (purpose) of the project is to develop and put in 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."

Indicators to measure success

- Out of the number of technologies developed by the year 2004, at least 50% produce documented on-farm impact relating to:
 - Household food security
 - Reduced workload by about 30% on women labour force
 - Increased household income by 20% by 2004
- From the total number of farmers participating in Project funded research, at least 25% are using technologies developed by 2004. Out of these 50% are women.

Expected outputs and indicators

To achieve the immediate objective, the following outputs need to be attained during the project implementation period:

1. Client-oriented and demand driven on-farm/on-station research in production, processing, and marketing carried out:

Research themes are listed in Annex 3. However, the following areas should *inter alia* be considered for highlighting direct linkage to target beneficiaries:

- *Investigate marketing possibilities of crops and livestock*
- *Develop and/or introduce appropriate farm level IPM for major crop pests and diseases*
- *Develop appropriate technologies for reducing post harvest losses, including storage and preservation*
- *Evaluate the effectiveness of irrigation systems (including traditional) and water harvesting technologies*

- *Develop appropriate cropping systems for female farmers that reduce labour.*

What are the criteria for evaluating research proposals ?

It is important to select research proposals that comply with the project goal. The philosophy of project implementation is on-farm, client-oriented and demand driven. Some on-station research to support on-farm research will be necessary. The farmer is the major stakeholder and must influence to a great degree the activities carried out. Research towards empowerment of farmers will be desirable. Researchers will review what has been done to indicate previous action, success, and failure and what needs to be done to make substantial progress. Each proposed project should include statements on how the project will fulfil the following criteria:

- *Contribute to improved food security and/or household income*
- *Relevance to small holder farmers*
- *Relevance to women*
- *New technologies being environmentally friendly*

Complement rather than duplicate other research.

Indicators

- *At least 50% of research projects produce results responsive to farmers needs by year 2004 as evidenced by farmers responses in the surveyed target villages*
- *At least 50% of research projects produce extension materials (leaflets, booklets) by 2004 for use by farmers, extension agents and training institutes*
- *At least 25% of research projects publish results in recognised journals of applied research by 2004.*

2. Farmer-Research-Extension linkages strengthened

Indicators

- *At least 1 Farmer Forum is organised in each Zone by December 2000*
- *Timely documentation submission of proceedings of Farmer Forum meetings to Project Steering Committee*
- *Increase in number of farmer participants in DRD Joint Planning Meetings (e.g. IPR)*
- *Increase in number of farmers participating in on-farm trials and/or demonstrations*
- *Increase in number of researchers participating in extension meetings (bi-monthly etc.).*

3. MAC staff trained to improve research performance

Indicator

- *At least 18 MSc and 14 PhD students receive their degrees by the end of the project period*

4. Proposal for sustainable research funding mechanism developed

Indicator

By end of 2002, a proposal is submitted to GOT, donors, and other stakeholders for discussion. The proposal shall contain elaboration of several options and one recommended option for establishing an agricultural research funding mechanism with details on legal status, fund generation and management modalities, administration of research and supervisory oversight

5. Impact of agricultural research assessed

Indicators

- *On-farm Impact Study of earlier research published in a refereed journal by 2002*
 - *On-farm Impact Study of research activities under the current Project submitted for publication by 2004*
- Response on impact studies received from GOT, researchers, extension agents and farmers by the end of the Project period.*

Project activities

To achieve the above mentioned outputs, a wide range of activities will be implemented by various agents including researchers, farmers, extension staff, Project management, and other stakeholders

OUTPUT 1: On-farm/On-station Research

- 1.1 Call for research proposals
- 1.2 Facilitate meetings of collaborative researchers to develop proposals
- 1.3 Identify and establish database of peer reviewers
- 1.4 Evaluate proposals submitted on the basis of agreed criteria and comments from reviewers
- 1.5 Select successful proposals and inform researchers
- 1.6 Disburse funds for execution of approved research proposals
- 1.7 Facilitate procurement of materials and equipment
- 1.8 Facilitate securing of transport for field work
- 1.9 Facilitate meetings of researchers with farmers and extension staff
- 1.10 Monitor and evaluate progress of research projects by undertaking field visits and through regular reports
- 1.11 Institute appropriate intervention measures for under-performing projects
- 1.12 Publish results in a format accessible to farmers as well as in scientific journals and disseminate widely
- 1.13 Promote new technologies in the market

OUTPUT 2: Farmer-Research-Extension Linkages

- 2.1 Organise Farmer Forum in each Zone to discuss research and technologies, holding at least 1 meeting per year and involving:
 - Representatives of farmer groups
 - Researchers
 - Extension Agents

- NGOs etc.

- 2.2 Document farmer feedback in the Farmer Forum
- 2.3 Establish schedule for farmer exchange visits within and outside the two Zones
- 2.4 Organise field days for conducting demonstrations etc.
- 2.5 Publish extension leaflets and materials and disseminate
- 2.6 Carry out field monitoring visits
- 2.7 Organise prize distribution to farmers, researchers and extension agents
- 2.8 Disseminate results of farmer feedback to relevant bodies

OUTPUT 3: MAC Staff Training

- 3.1 Enrol MAC staff members as postgraduate students at SUA
- 3.2 Administer student grants
- 3.3 Arrange courses at MSc and PhD level
- 3.4 Supervise thesis work
- 3.5 Evaluate training received by trainees

OUTPUT 4: Sustainable Research Funding Mechanism

- 4.1 Collect information and survey research funds, identifying revenue generation, grant administration and management mechanisms
- 4.2 Discuss with stakeholders (e.g. COSTECH, MAC, donors etc.) options for making the Agricultural Research Fund (ARF) a sustainable funding institution
- 4.3 Draw up a detailed proposal showing legal, financial and management aspects of operating such a fund on a sustainable basis
- 4.4 Submit proposal to Government for discussion and dissemination to donor community
- 4.5 Hold workshop to discuss the proposal and secure support

OUTPUT 5: Impact Assessment in the Project Area

- 5.1 Study on-farm impact of earlier research (at least 20 years)
- 5.2 Use existing baseline data and conduct a study on use of farm technology
- 5.3 Conduct an end-line study of impact of the current project
- 5.4 Disseminate findings to the international research community
- 5.5 Disseminate findings to extension agents and farmers
- 5.6 Communicate findings relevant for policy making to the Government of Tanzania

Project Administration and Management Activities

Project management must carry out a number of activities that do not fit under the above mentioned project outputs. These are listed below:

- Appoint project staff
- Procure equipment
- Establish the Project Steering Committee (SCOFSHI)
- Liase closely with DRD Monitoring Unit on TARP II and with other organisations relevant to the project
- Establish monitoring and evaluation system for project and conduct internal reviews on an annual basis
- Develop and maintain databases associated with relevant project data

- Develop communications strategy and use various means to disseminate information (including mass media)
- Compile project accounts and financial reports
- Carry out financial audits
- Submit project performance reports
- Organise annual meeting
- Facilitate project reviews

What are the external factors for this project?

External factors or assumptions are *conditions* that must exist if the project is to succeed but which are *outside the control* of the project management. In the proposed project, there are some critical factors that are outside the control of the management. These are of a:

- *Macro-economic nature*
- *Political or policy issues, and*
- *Social behavioural aspects*

Is the project compatible with policies of Tanzania and Norway?

Tanzanian priorities

All components and subjects of research focus are prioritised in the national Tanzanian agricultural research policy. Decentralised, zonal based research, the establishment of zonal agricultural research funds (ZARF) and emphasis on farmer-research-extension linkages are part of this policy.

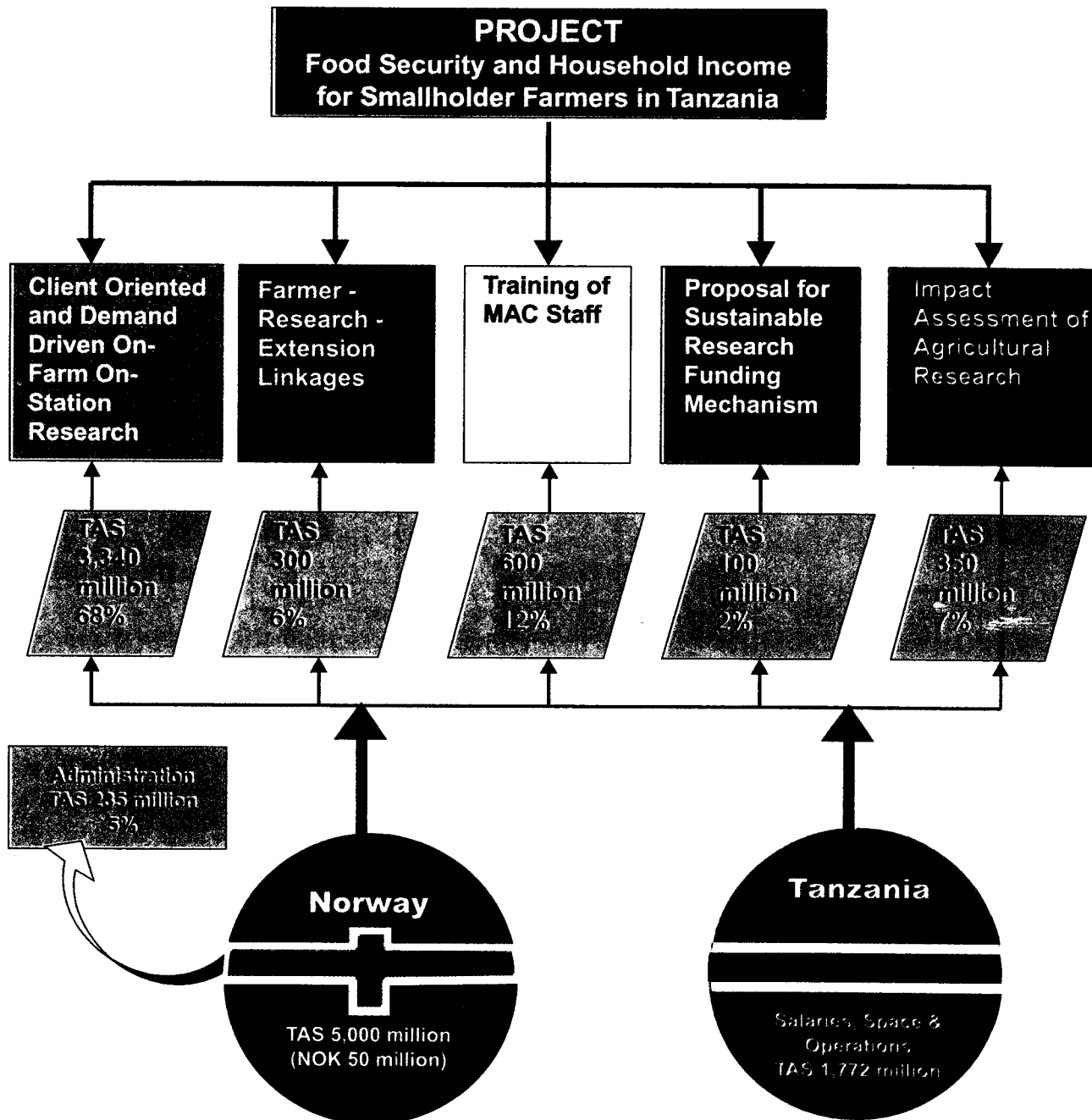
Norwegian priorities

Norwegian development assistance aims at:

- Developing recipient countries' personnel and institutional competence and capacity;
- Promoting local community participation and the role of women in the production process;
- Focusing on the sustainable use of natural resources and biological diversity instead of classical protection; and
- Supporting pilot projects that may demonstrate the relationship between ecologically sound management of natural resources and increase in the population's welfare.

What are the inputs?

NORAD is financing the Project initially for a period of 4 years, with a performance review undertaken after 24 months. The contributions of the two Governments have been estimated as follows:



Norwegian financing per annum in million NOK

2000/01	2001/02	2002/03	2003/04
13.2	14.0	13.4	9.4

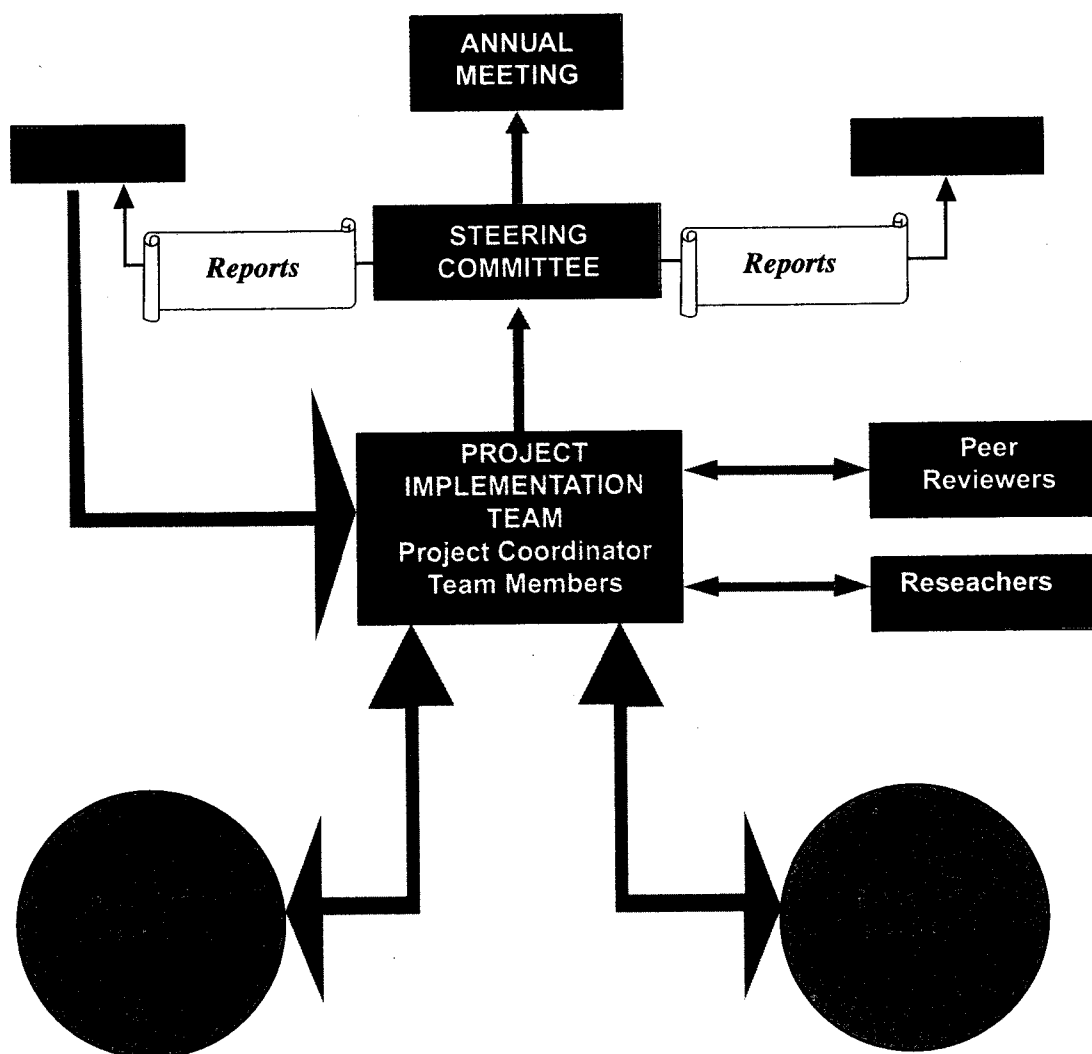
Is there any institutional collaboration?

The Project is a collaborative research effort between three partners. The institutions involved in this tripartite venture are:

- Division for Research and Development, MAC focussing on the Southern Highlands Zone and the Eastern Zone
- Sokoine University of Agriculture, and
- Norwegian agricultural research institutions co-ordinated by NORAGRIC.

How is the implementation set up?

The key components of the implementation set-up and their relationships are schematised below.



PROJECT IMPLEMENTATION TEAM

- SUA will appoint a Project Co-ordinator from among the members of SUA academic staff to head a Project Implementation Team.
- Representatives from other collaborating partners can be co-opted to the Team as and when required during the implementation period.
- The Project Implementation Team, which will be attached to the DRPGS, will consist of the Project Co-ordinator and any member co-opted to the Project.
- SUA will provide Project services at a flat rate of 5% of the total project cost.
- The Project Implementation Team will consult Peer Reviewers and relevant experts for professional services as and when required.
- The Project Co-ordinator will report to the Steering Committee on Food Security and Household Income (*SCOFSHI*), which will be chaired by the Director, DRPGS.

Project coordinator

The Project Co-ordinator shall be responsible for the overall coordination and smooth implementation of the Project. In doing so he/she shall perform continuous monitoring and supervision of project component performance and ensure adequate backstopping and guidance to the operational levels. The coordinator will be responsible for coordinating information received from the various components in a suitable manner before it is submitted to the Steering Committee and NORAD. In particular, the coordinator shall:

- Liase with the Planning and Monitoring Unit of DRD Head Office and Zonal contact persons at Zonal Centres to ensure harmonisation of project activities with TARP II
- Ensure proposal for establishing a sustainable research funding mechanism is developed
- Ensure and coordinate preparation of annual work plans and budgets and their submission
- Ensure and coordinate preparation of half-yearly requests for disbursement of funds.
- Ensure proper and transparent maintenance of project accounts.
- Ensure and coordinate preparation of half-yearly expenditure statements and their timely submission.
- Undertake field monitoring visits
- Ensure and coordinate timely submission of semi-annual progress reports and annual reports.
- Facilitate timely auditing of project accounts and submission of audit statement.

The Coordinator shall further facilitate timely dissemination of information that may affect project operations received from various bodies or NORAD including decisions made at the annual meetings and decisions of the Steering Committee. The Project Coordinator shall perform any other duty as agreed by the Annual Meeting.

THE STEERING COMMITTEE

Composition

The Steering Committee shall consist of:

- Three members from DRD (one from each Zone and one from head office)
- Three members from SUA (Director DRPGS and two Faculty members)
- One member from extension service (MAC)
- One member from Noragric
- Two farmer representatives (one female), one from each zone.

The constitution of members in SCOFSHI shall be sensitive to achieving gender balance. Collaborative partners will nominate their representatives to SCOFSHI. Farmer representatives shall be invited by the chairman after consultation with Zonal Centres to become members of SCOFSHI.

Terms of reference

1. Steering Committee meetings will be convened every six months by the Project Coordinator, who will also be the secretary of the Committee, preparing and distributing minutes of the meeting.
2. The Steering Committee will be chaired by the Director, DRPGS
3. The Steering Committee shall:
 - Have oversight of the project
 - Review implementation and progress achieved
 - Receive, consider and approve progress reports, work plans and budgets.
 - Receive, consider and approve new research projects for funding.
 - Monitor and recommend the strategic approach of the Project
 - Provide guidance
 - Approve changes/deviations in workplans
 - Authorise Project Co-ordinator to co-opt subject matter specialists and Zonal contact persons to assist in project implementation
 - Authorise Project Co-ordinator to submit reports to the GON and GOT and maintain communications
4. Decisions of the Steering Committee will be binding on the Project Implementation Team unless revoked or amended by the Annual Meeting.

ANNUAL MEETING

Representatives of Norway and Tanzania shall meet in November in order to:

- Review the progress of the project
- Discuss possible revisions of plans and budgets for the project
- Discuss proposals for extension of ongoing or new components to be included in the project
- Approve workplans and budgets for the next financial year
Discuss issues of special concern for implementation of the project
- Make recommendations and decisions for the future implementation of the project

The Annual Meeting shall be called by MAC and chaired by the Permanent Secretary in MAC.

Tanzania will at the meeting in addition to MAC and the Ministry of Finance be represented by SUA. Representatives from NLH may, if the Parties find it suitable, also be invited to the Annual Meeting.

Central elements of the discussions and decisions from the consultations shall be recorded and presented in Agreed Minutes to be signed not later than three weeks after the meeting. The minutes shall be drafted by MAC and shall be sent to the Royal Norwegian Embassy for Comments not later than two weeks after the Annual Meeting.

What is the project schedule?

It is expected that the project will last for a period of 4 years starting in August 2000 and ending in June 2004. A joint mid-term review will be undertaken in 2002. The review shall report in particular on progress of the Project including:

- Preliminary achievement of the Goal and Objective
- Examination of indicators
- Distribution of funds compared to the budgets

Who approves annual work-plans and budgets?

Work plans based on an annual cycle of implementation are submitted every year to the Annual Meeting for consideration and approval. These work-plans will contain activities and sub-activities, targets or milestones, time frame during which the activity will be carried out (showing the quarters), the responsible person and the collaborating persons/institutions and the cost. The annual work-plan will also show whether the activity is to be continued into the subsequent years of implementation.

How will the project be monitored?

The project will submit half-yearly progress reports to the Steering Committee, which will be approved by it and forwarded to RNE/NORAD and MAC. Indicators set out in the project document will form the basis for project monitoring and reporting. Monitoring and evaluation will be an integral part of project management and is reflected as such in the mainstream of project activities. This implies a need to ensure that objective baseline data against which progress and impact can be measured is available from the inception of this project.

What are the accounting and auditing arrangements?

Accounts shall be maintained by the Project Co-ordination office at SUA. Tanzania shall submit to Norway an audit opinion on the Project not later than February 15 (7.5 months after each financial year). The audit shall be performed by an internationally reputable auditing firm to be contracted by MAC under instruction of the Auditor General. Tender

documents and choice of firm shall be submitted to Norway for approval before entering into force.

Are there any annual reviews?

An internal, annual review meeting will be held by Project staff to critically review performance and get feedback from target group(s) and beneficiaries. This annual report will be submitted together with work-plans to the Steering Committee (SCOFSHI) for recommendation to the Annual Meeting.

Are there any reservations?

Norway reserves the right to withhold disbursements at any time in case:

- The Project develops unfavourably in relation to the Goal and Objectives
- Substantial deviations from agreed plans and budgets occur
- Resources to be allocated by Tanzania are not provided as agreed
- Reports are not submitted as agreed
- The financial management of the Project or any of the other components of the project are not satisfactory
- The Agreement between MAC and SUA and the Contract Between NLH are breached or terminated before obligations are fulfilled.

Are there any incentives/prizes?

Farmers will be encouraged to participate in evaluating work of researchers and awarding prizes for the *best-documented on-farm impact* on an annual basis throughout the project period. Simultaneously, in each zone or group of target villages, researchers and extension agents will be encouraged to vote for the *best farmer of the year* and to award performance related incentives to farmers who have adopted technologies developed by the project and are using them effectively.

What are the risks for the project?

The Project involves a large number of researchers. Shortage of available and competent researchers is a risk. Highly educated and skilled persons may find lucrative opportunities in positions outside the Government sector and decide to avail of those opportunities rather than work under the Project. The allowances proposed may not be conducive to attract researchers known for high standard work execution. On the Norwegian side, the remuneration level proposed in this project is lower than what is usual for externally funded assignments that are executed by university departments. There is a risk, therefore, both on the Tanzanian and Norwegian side that the Project will fail to attract the critical mass of highly competent researchers.

Favourable government policies relating to agriculture need to remain in place and continue in the future. This is a risk as change in policy may be detrimental to adoption rates of certain technologies or growing of certain crops by small-holder farmers in the project area.

Is the project sustainable?

The issue of sustainability needs to be addressed at two levels:

1. At the level of the institution i.e. activities, outputs, and immediate objective, whereby SUA, research institutions of MAC, extension services, small holder farmers in the Eastern and Southern Highlands Zones, and non-governmental organisations intend to establish institutional capacity enabling them to develop appropriate technologies for improving food security and household income. This requires medium to long term commitment by donors and government towards the project and the gradual take-over of such costs from the donor by national institutions. It is imperative that a mechanism for sustainable research funding that enjoys confidence of all and has an efficient management structure needs to be put in place to attract and generate research funds; and

2. Macro-Economic policies and conditions that are favourable to agricultural production, processing, marketing and environmental conservation remain in place and specific incentives are put in place that encourage the funding of agricultural research. Without consistent policy support by government and donor agencies, without collaboration and coordination at the national, regional, and international levels, and without willingness to use and multiply positive effects of the results from this Project, efforts towards alleviating problems of food insecurity and low income will remain a drop in the ocean.

ANNEX 1: LIST OF ABBREVIATIONS

ARF	Agricultural Research Fund
COSTECH	Tanzania Commission for Science and Technology
DRD	Division of Research and Development
DRPGS	Directorate of Research and Postgraduate Studies (SUA)
EZ	Eastern zone
FSZ	Farming System Zone.
GON	Government of Norway
GOT	Government of Tanzania
HH	Household
LFA	Logical Framework Approach
LRC	Livestock Research Centre,
MAC	Ministry of Agriculture and Co-operatives
MoU	Memorandum of Understanding
NALRP	National Agriculture and Livestock Research Project
NARF	National Agricultural Research Fund
NARS	National Agriculture Research System
NLH	Agricultural University of Norway
NORAD	Norwegian Agency for Development Co-operation
Noragric	Centre for International Environment and Development Studies at NLH
NOK	Norwegian Kroner
NVH	Norwegian School of Veterinary Science
RALDO	Regional Agriculture and Livestock Development Officer
RNE	Royal Norwegian Embassy
SCOFSHI	Steering Committee on Food Security and Household Income Project
SHZ	Southern Highland zone
SUA	Sokoine University of Agriculture
TAFORI	Tanzania Forestry Research Institute
TARP	Tanzania Agricultural Research Project
TAS	Tanzania Shillings
TOR	Terms of Reference
WB	World Bank
ZARF	Zonal Agricultural Research Fund

ANNEX 2: PROJECT PLANNING MATRIX

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	EXTERNAL FACTORS/ ASSUMPTIONS
<p>Development Objective (Goal): Improved food security and household income of smallholder farmers with emphasis on women in the Eastern and Southern Highlands Zones of Tanzania</p>	<p>Indicators:</p> <ul style="list-style-type: none"> - Reduced incidences of HH food shortages by 2004 as compared to period 1996-1999 in target villages of the Project area - Increased food security in target villages as compared to non-target villages - Increased HH income in target villages as compared to non-target villages 	<p>To achieve Development Objective (Goal):</p> <ul style="list-style-type: none"> - Conducive macro-economic development in Tanzania - Supportive policies continue - Political stability prevails - No negative deviations of existing weather pattern
<p>Immediate Objective (Purpose): Gender-sensitive and appropriate on-farm technologies for improving food security and household income developed and in use by smallholder farmers in the Eastern and Southern Highlands Zones</p>	<p>Indicators:</p> <ul style="list-style-type: none"> - Out of the number of technologies developed by the year 2004, at least 50% produce documented on-farm impact relating to: <ul style="list-style-type: none"> - HH food security - Reducing workload of women - Increasing HH income - From the total number of farmers participating in Project funded research, at least 25% are using technologies developed by 2004. Out of these 50% are women 	<p>To achieve Immediate Objective (Purpose):</p> <ul style="list-style-type: none"> - Adequate and timely disbursement of funds - Farmers have access to inputs and markets for their agricultural products
<p>Project Outputs:</p> <p>1. Client-oriented and demand driven on-farm/on-station research in production, processing, and marketing carried out</p> <ol style="list-style-type: none"> 1.1 Call for research proposals 1.2 Facilitate meetings of collaborative researchers to develop proposals 1.3 Identify and establish database of peer reviewers 1.4 Evaluate proposals submitted on the basis of agreed criteria and comments from reviewers 1.5 Select successful proposals and inform researchers 1.6 Disburse funds for execution of approved research proposals 1.7 Facilitate procurement of materials and equipment 1.8 Facilitate securing of transport for field work 1.9 Facilitate meetings of researchers with farmers and extension staff 1.10 Monitor and evaluate progress of research projects by undertaking field visits and through regular reports 1.11 Institute appropriate intervention measures for under-performing projects 1.12 Publish results in a format accessible to farmers as well as in scientific journals and disseminate widely 1.13 Promote new technologies in the market 	<p>Indicators:</p> <p>Output 1:</p> <ul style="list-style-type: none"> - At least 50% of research projects produce results responsive to farmers needs by year 2004 as evidenced by farmers responses in the surveyed target villages - And those 50% of research projects produce extension materials (leaflets, booklets) by 2004 for use by farmers, extension agents and training institutes - At least 25% of research projects publish results in recognised journals of applied research by 2004. 	<p>To achieve Outputs/Results:</p> <p>Critical mass of researchers can be maintained/are attracted</p> <ul style="list-style-type: none"> - Favourable academic environment prevails at SUA - All partners willing to continue to co-operate - Disruption of project activities due to weather conditions is marginal - Government and donors maintain favourable policies towards the sector - Price escalations are adjustable within the budget

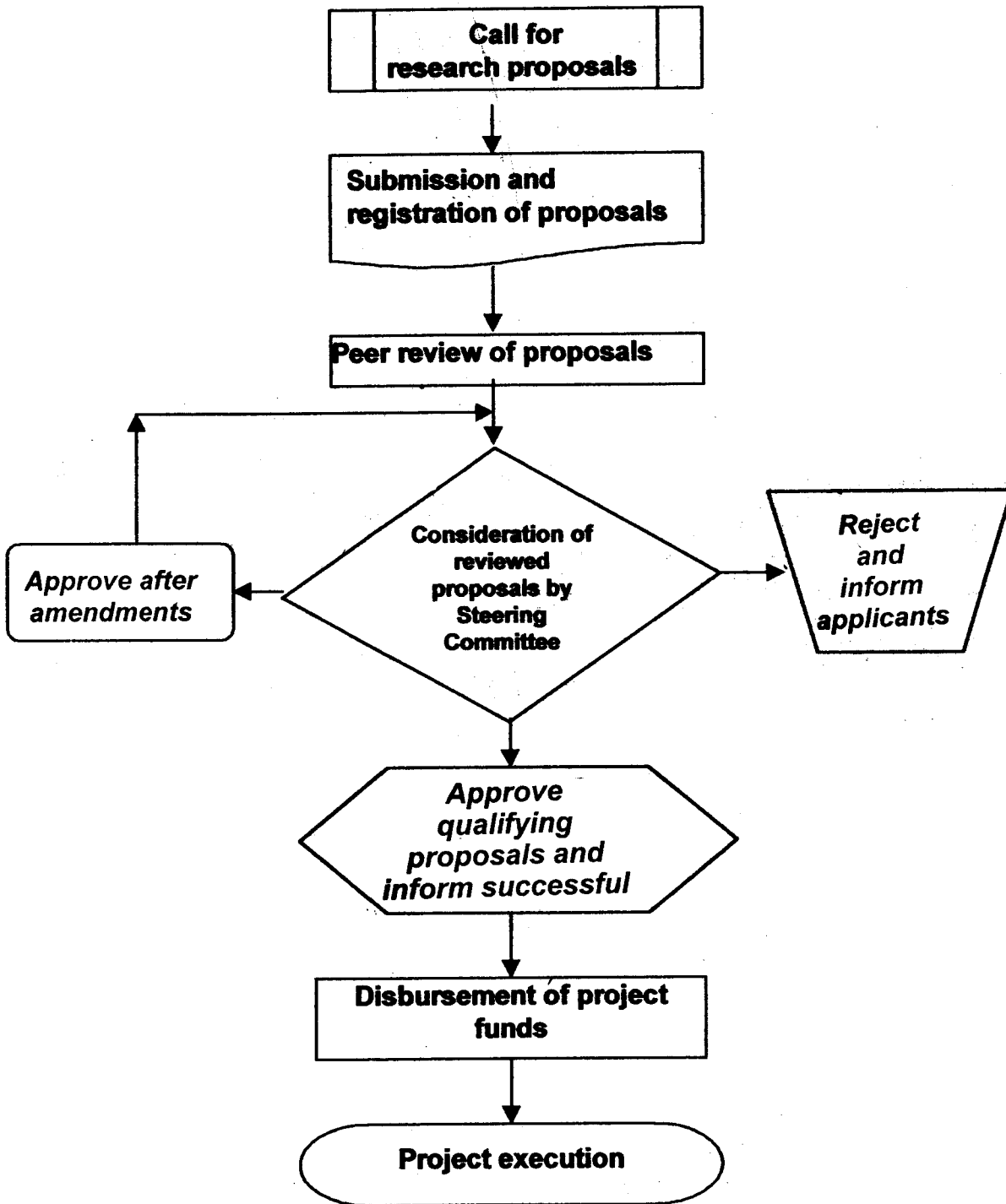
<p>2. Farmer-Research-Extension linkages strengthened</p> <p>2.1 Organise Farmer Forum in each Zone to discuss research and technologies, holding at least 1 meeting per year and involving:</p> <ul style="list-style-type: none"> • Representatives of farmer groups • Researchers • Extension Agents • NGOs etc. <p>2.2 Document farmer feedback in the Farmer Forum</p> <p>2.3 Establish schedule for farmer exchange visits within and outside the two Zones</p> <p>2.4 Organise field days for conducting demonstrations, etc.</p> <p>2.5 Publish extension leaflets and materials and disseminate</p> <p>2.6 Carry out field monitoring visits</p> <p>2.7 Organise prize distribution to farmers, researchers and extension agents</p> <p>2.8 Disseminate results of farmer feedback to relevant bodies</p>	<p>Indicators:</p> <p>Output 2:</p> <ul style="list-style-type: none"> - At least 1 Farmer Forum is organised in each Zone by December 2000 - Timely documentation submission of proceedings of Farmer Forum meetings to Project Steering Committee - Increase in number of farmer participants in DRD Joint Planning Meetings (e.g. IPR) - Increase in number of farmers participating in on-farm trials and/or demonstrations - Increase in number of researchers participating in extension meetings (bi-monthly etc.) 	
<p>3. MAC staff trained to improve research performance</p> <p>3.1 Enrol MAC staff members as postgraduate students at SUA</p> <p>3.6 Administer student grants</p> <p>3.7 Arrange courses at MSc and PhD level</p> <p>3.8 Supervise thesis work</p> <p>3.5 Evaluate training received by trainees</p>	<p>Output 3:</p> <ul style="list-style-type: none"> - At least 18 MSc and 14 PhD students receive their degrees by the end of the project period 	
<p>4. Proposal for sustainable research funding mechanism developed</p> <p>4.1 Collect information and survey research funds, identifying revenue generation, grant administration and management mechanisms</p> <p>4.2 Discuss with stakeholders (e.g. COSTECH, MAC, donors etc.) options for making the Agricultural Research Fund (ARF) a sustainable funding institution</p> <p>4.3 Draw up a detailed proposal showing legal, financial and management aspects of operating such a fund on a sustainable basis</p> <p>4.4 Submit proposal to Government for discussion and dissemination to donor community</p> <p>4.5 Hold workshop to discuss the proposal and secure support</p>	<p>Output 4:</p> <ul style="list-style-type: none"> - By end of 2002, a proposal is submitted to GOT donors and other stakeholders for discussion. The proposal shall contain elaboration of several options and one recommended option for establishing an agricultural research funding mechanism with details on legal status, fund generation and management modalities, administration of research and supervisory oversight 	
<p>5. Impact of agricultural research assessed</p> <p>5.1 Study on-farm impact of earlier research (at least 20 years)</p> <p>5.2 Use existing baseline data and conduct a study on use of farm technology</p> <p>5.3 Conduct an end-line study of impact of the current project</p> <p>5.4 Disseminate findings to the international research community</p> <p>5.5 Disseminate findings to extension agents and farmers</p> <p>5.6 Communicate findings relevant for policy making to the Government of Tanzania</p>	<p>Output 5:</p> <ul style="list-style-type: none"> - On-farm Impact Study of earlier research published in a refereed journal by 2002 - On-farm Impact Study of research activities under the current Project submitted for publication by 2004 - Response on impact studies received from GOT, researchers, extension agents and farmers by the end of the Project period 	

ANNEX 3. LIST OF RESEARCH THEMES DEVELOPED FROM PRIORITY AREAS

1. Investigate marketing possibilities of crops
2. Investigate marketing possibilities of livestock, livestock products and improve their hygiene
3. Develop dry season feeding regimes
4. Develop effective control, treatment and diagnostic methods for major livestock diseases and pests. The major animal health problems and diseases are:
 - Endemic and cause high mortality rates. These include tick borne diseases (East Coast fever, anaplasmosis, babesiosis and heart water), tsetse transmitted trypanosomosis, and helminthoses
 - Specific to dairy animals such as mastitis
 - Newcastle disease and other diseases of chickens
 - Zoonoses such as tuberculosis, brucellosis, anthrax, salmonellosis, and typhoid.
 - Sporadic diseases, e.g. contagious bovine pleuropneumonia, contagious caprine pleuropneumonia and rinderpest.

Research under this theme seeks to develop cheap, efficient and effective diagnostic, treatment and control methods of these diseases, which small holder farmers can use to improve their production.
5. Carry out on-station and on-farm evaluation of crop varieties
6. Develop and promote the use of appropriate draught animal power for transport and tillage
7. Evaluate available prototypes for farm mechanization and develop appropriate technology for increased labour productivity
8. Carry out on-station and on-farm assessment of performance of farm animal breeds
9. Develop and/or introduce appropriate farm level IPM for major crop pests and diseases
10. Verify improved practices, and develop integrated plant nutrient management
11. Develop better methods and management practices for livestock herd recruitment and production
12. Develop appropriate technologies for reducing post harvest losses, including storage and preservation
13. Development of processing and packaging technologies for farm products
14. Develop the integration of the livestock and crop production systems
15. Evaluate effectiveness of irrigation systems (including traditional) and water harvesting technologies
16. Develop appropriate cropping systems for female farmers
17. Verify and recommend the use of crop residues and manure in crop production
18. Test and verify rotational wood-lots and improved fallow for improving soil fertility and the use of shrubs that enhance the availability of phosphorus
19. Promote utilisation of multipurpose trees amongst livestock keepers and farmers
20. Verify soil tillage methods under farmer's condition
21. Develop appropriate diagnostic methods for major crop pests and diseases for use at farm level
22. Assess existing and new forms of farmer organisations to enhance farmers access to information, input and markets
23. Undertake systematic study for conservation and rehabilitation of degraded land
24. Evaluate the effects of structural adjustment on input subsidies to small holder farmers

ANNEX 4: PROCEDURE FOR PROCESSING RESEARCH PROPOSALS



**ANNEX 5: FORMAT OF APPLICATION FOR RESEARCH GRANT UNDER
THE TARP II COLLABORATIVE RESEARCH PROJECT**

1. Name(s) of researcher(s) (underline name of Project leader)
2. Nationality
3. Academic qualifications
4. Institution and address
5. Research Theme
6. Title of research project
7. Objectives of the proposed research project
8. What has already been done
9. What remains to be done
10. Methodology
11. Probable duration of the project
12. Expected outputs from the project
13. Measurable indicators of the outputs
14. Detail breakdown of budget; equipment, travel, subsistence, chemicals, others
15. State whether this research proposal is under consideration for funding from another source and where.
16. If Norwegian(s) will participate, state reasons
17. Declaration of the applicant: I have read and understood the rules and regulations governing the granting of research funds under the Food Security Project (TARP II)

Signature

Date

ANNEX 6: FORMAT FOR RESEARCH PROGRESS REPORT

Report for the period:

1. Project title
2. Researcher(s)
3. Department(s)
4. Project objectives (Brief highlighting)
5. Original hypothesis or problem (Brief statement)
6. Project implementation in the stated period (In Tabular form, see below)

Panned target	Status of implementation	Problems encountered	Corrective measures

- 8 Publications to date (extension leaflets, booklets, scientific papers, etc). Indicate title and media)
- 9 Project work plan and budget if the project is continuing

Name of project leader

Signature

Date

ANNEX 7: LIST OF CONTACT ADDRESSES

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