

**IMPACT ASSESSMENT OF TANZANIA SOCIAL ACTION FUND
INVESTMENTS IN MAKETE AND RUNGWE DISTRICTS, TANZANIA**



ASHF MANDESU MWIDEGE



**A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY OF SOKOINE
UNIVERSITY OF AGRICULTURE. MOROGORO, TANZANIA.**

**FOR REFERENCE
ONLY**

2012

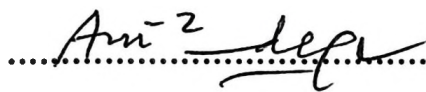
ABSTRACT

Tanzania Social Action Fund (TASAF) was introduced in Tanzania to address the poverty situation. However, little information based on appropriate methodological approaches is available. Therefore the present study was conducted to assess the impact of community empowerment by TASAF on effective and efficient utilisation of the assets created under the TASAF poverty reduction program. Specifically, the objectives of the study were to: (i) evaluate the impact of TASAF intervention on socio-economic status of participants, (ii) assess the impact of TASAF intervention on food security and health status of beneficiaries, and (iii) examine the sustainability of productive assets created by TASAF for food insecure, service poor and vulnerable groups. This study was carried out in Makete and Rungwe districts in 2010. Data were collected from 300 household, 54 key informants and focus group discussions using quasi-experimental approach. The present study was conceptualized in the sustainable livelihood approach framework for analysis, whereby both descriptive and quantitative techniques were used to analyze cross-sectional data. The quantitative estimation employed Heckman's two-stage and IV/2SLS models to estimate the intervention effects. Results show that TASAF intervention have positive impact on socio-economic status of participants. Also, it has been found that carpentry, public works, environmental conservation and water projects have positive influence on food security. However, it has been observed that poultry and public works had significant effects on health status, meaning that TASAF participants improved their health compared to non participants. Thus, it is concluded that intervention improves health status of beneficiaries. Also, it has been observed that, carpentry works was significantly sustainable, meaning that assets created in TASAF projects continue to deliver benefits after the termination of the program. Therefore, it is recommended that the government should invest in health and

reproductive health services provision. Also, the government should enhance projects that have positive influence on food security and health status of participants. Lastly, the government should enforce policies on sustaining assets created such as poultry, dairy cattle, carpentry, public works, environmental conservation and water projects.

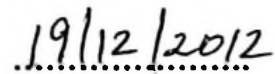
DECLARATION

I, Asheri Mandesu Mwidege, do hereby declare to the Senate of Sokoine University of Agriculture, that this thesis is the result of my own original work and that it has neither been submitted nor being concurrently submitted for higher degree award in any other University.

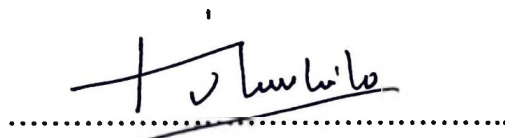


Asheri Mandesu Mwidege

(PhD Candidate)

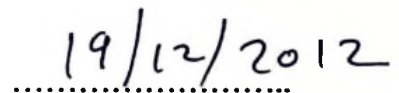


Date

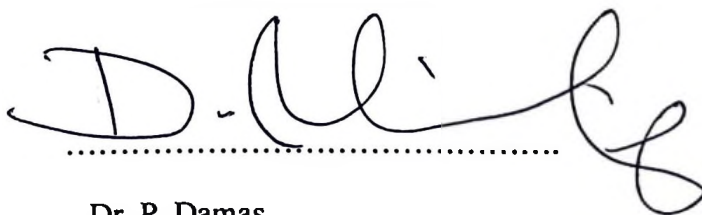


/ Prof. M.E. Mlambiti

(Supervisor)

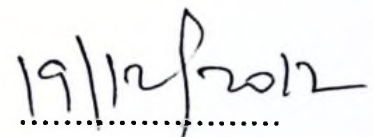


Date



Dr. P. Damas

(Supervisor)



Date

COPYRIGHT

No part of this thesis may be reproduced, stored in any retrieval system, or transmitted in any form or by any means without prior written permission of the author or Sokoine University of Agriculture in that behalf.

ACKNOWLEDGEMENTS

During the preparation of this thesis, a number of individuals and institutions provided me with invaluable support, encouragement and challenges that facilitated the completion of this work. First of all, I thank my employer Mbeya Institute of Science and Technology, African Economic Research Consortium (AERC) and Department of Agricultural Economics and Agribusiness for sponsoring and facilitating my PhD study.

I am sincerely indebted to my supervisors, Professor M.E. Mlambiti and Dr. P. Damas for giving me inspiration and guidance towards the completion of this thesis. I benefited a great deal from their advice, encouragement, constructive criticisms and comments from the time of research proposal to the production of this thesis, without which this work could not have been of this standard. I am thankful to Professor N.S.Y.Mdoe for his invaluable comments and constructive criticisms during the proposal presentation stage. I am also thankful to the Directorate of postgraduate studies who prepared and facilitated the workshop for preparing PhD project for their invaluable workshops on statistical data analysis and scientific writing. Special thanks go to Dr. K.A. Kayunze for his guidance on proposal to theses production procedures. I am thankful to SNAL staff members for their moral and material support and for facilitating workshops on research and acquisition of relevant references. Also my sincere thanks should go to TASAF coordinators, projects coordinators, village executives, beneficiary leaders and all respondents in Makete and Rungwe districts for their guidance and participation during data collection. Moreover, I am thankful to my colleagues: H. Mapesa, H. Mpogole, G. Urassa, V. Kipene, Z. Muyengi and G. Aloyce for their fruitful moral and material support. Furthermore, much thanks to those who helped me in one way or another whom I can't mention them all. Thank you all.

DEDICATION

This work is dedicated to my altruistic late parents, Mandesu Mwidege and Alatupilila Chaula who laid my education foundation without which I would not have achieved the award of this PhD degree. Also, I dedicate this work to my loving wife Maria Barnaba Kaduma and my daughters Alatupilila, Rosalia and Hilda for their patience and encouragement during my study period.

TABLE OF CONTENTS

ABSTRACT.....	ii
DECLARATION	iv
COPYRIGHT.....	v
ACKNOWLEDGEMENTS	vi
DEDICATION	vii
TABLE OF CONTENTS	viii
LIST OF TABLES.....	xiv
LIST OF APPENDICES	xix
LIST OF ABBREVIATIONS AND SYMBOLS.....	xx
 CHAPTER ONE	 1
1.0 INTRODUCTION	1
1.1 Background of the study	1
1.2 Statement of the problem and justification	3
1.3 Objectives of the study	5
1.3.1 Overall objective.....	5
1.3.2 Specific objectives	5
1.4 Research hypotheses.....	5
1.5 Organization of the study.....	6
1.6 Scope of the study.....	6
1.7 Research limitations.....	6
 CHAPTER TWO	 8
2.0 LITERATURE REVIEW	8

2.1 An overview of social protection.....	8
2.1.1 Origin of social protection	8
2.1.2 Social risk management strategies.....	10
2.1.3 Social risk management instruments	10
2.1.4 Insurance programs.....	10
2.2 Social funds	13
2.2.1 Definition of social funds	13
2.2.2 The evolution of social funds	13
2.2.3 Objectives of social funds intervention	14
2.3 Impact assessment	15
2.3.1 Definition of impact assessment.....	15
2.3.2 Project evaluation theories.....	16
2.3.3 Theories on relevance of livelihood intervention	17
2.3.4 Theories on intervention sustainability.....	19
2.3.5 Theories on impact assessment.....	21
2.3.6 Theories on methods for impact assessment	25
2.4 Experience from previous studies.....	30
2.4.1 Global studies on impact assessment.....	30
2.4.2 Experience of IA studies in Africa	32
 CHAPTER THREE.....	 35
3.0 RESEARCH METHODOLOGY	35
3.1 Conceptual framework.....	35
3.2 Study location	37
3.2.1 Location of Makete District.....	38
3.2.2 Location of Rungwe District	39

3.2.3 Study design.....	41
3.3 Sample design	41
3.3.1 Sample size determination	41
3.3.2 Sampling procedure	42
3.3.3 Sampling frame.....	43
3.4 Data collection	43
3.4.1 Sources of data.....	43
3.4.2 Types of data collected	43
3.4.3 Procedure of data collection	44
3.4.3.1 Pilot study	44
3.4.3.2 Primary data collection process	45
3.4.4 Data scrutiny and organization	46
3.5 Methods of data analysis	46
3.5.1 Explorative analysis.....	46
3.5.1.1 Descriptive statistics	46
3.5.1.2 Non-parametric analysis	47
3.5.1.2.1 Chi-square.....	47
3.5.1.2.2 Phi coefficient.....	47
3.5.2 Fundamental evaluation framework model	48
3.5.3 Heckman two - stage - estimation model	49
3.5.4 Two-stage least squares estimation model	53
3.5.4.1 Endogeneity test and two stage least squares procedure	54
3.5.4.2 Relevance of instruments.....	55
3.6 Quantitative estimation procedures	55
CHAPTER FOUR	64

4.0 RESULTS AND DISCUSSION	64
4.1 Socio-economic characteristics of respondents	64
4.1.1 Age categories for respondents.....	64
4.1.2 Sex composition of respondents	64
4.1.3 Respondents marital status	65
4.1.4 Level of education attained by respondents.....	66
4.1.5 Occupation status of respondents	66
4.1.8 Households land possession	69
4.1.9 Staple food and cash crops grown	70
4.1.10 Households daily mean time allocation during farming and off-season	71
4.1.11 Effect of TASAF support on household farm input	72
4.2 Description of TASAF projects intervention.....	73
4.2.1 Types of projects supported by TASAF	73
4.2.2 TASAF projects target groups distribution.....	73
4.2.3 TASAF projects and marital status of participants.....	74
4.2.4 TASAF projects and gender status of participants	75
4.3 Attributes considered by households when planning for agriculture	75
4.3.1 Households average food production pattern	76
4.3.2 Households marketing orientation of farm products	77
4.3.3 Average market price of crops.....	78
4.3.4 Households average distance from marketing point.....	78
4.3.5 Livestock production	79
4.3.6 Households average annual food insecurity pattern	80
4.3.7 Main source of households' food products in a year	81
4.3.8 Number of meals and average meals per day	82
4.3.9 Varieties of food consumed by a household per week	83

4.4 Analysis of health status	85
4.4.1 Availability and accessibility of health services.....	85
4.4.2 Incidence of diseases and water accessibility	86
4.4.3 HIV/AIDS awareness, source of information and control.....	88
4.4.4 Free access to health services by vulnerable groups.....	89
4.5 Analysis of the impact of TASAF assets acquired for poverty reduction	90
4.5.1 TASAF project on women empowerment.....	90
4.5.2 TASAF and unemployed youth	91
4.6 Sustainability of assets created for poverty reduction in community	92
4.6.1 TASAF projects on Public Works Programs (PWPs)	93
4.6.1.1 TASAF rural roads project	93
4.6.1.2 Basic health services for service poor (SP)	95
4.6.2 TASAF dairy cattle project.....	97
4.6.3 TASAF project and environmental conservation	99
4.6.4 TASAF and poultry project	101
4.6.5 TASAF and Community Development Investment (CDI) - water project..	103
4.6.6 Carpentry works for Vulnerable orphans project	105
4.6.7 TASAF projects relevance, effectiveness and efficiency	107
4.6.7.1 TASAF projects relevance.....	107
4.6.7.2 TASAF project effectiveness.....	108
4.6.7.3 TASAF projects efficiency and sustainability	109
4.7 Quantitative estimation procedures for hypotheses testing	110
4.7.1 Multi-collinearity diagnosis of continuous and dummy variables	110
4.7.2 Estimation of impact of assets created on socio-economic status	111
4.7.3 Estimation of food security.....	114
4.7.4 Analysis of health status of participants	117

4.7.5 Sustainability of TASAF assets	119
CHAPTER FIVE	122
5.0 CONCLUSIONS AND RECOMMENDATIONS	122
5.1 Conclusions.....	122
5.2 Recommendations.....	123
REFERENCES	125
APPENDICES.....	160

LIST OF TABLES

Table 1: Variables specified in the socio-economic status analytical model	57
Table 2: Variables specified in food security analytical model.....	59
Table 3: Variables specified in health status analytical model.....	61
Table 4: Variables specified in project sustainability analytical model	63
Table 5: Makete and Rungwe Districts: Socio-economic characteristics of the respondents	65
Table 6: Makete and Rungwe Districts: Socio-economic characteristics of the respondents	67
Table 7: Makete and Rungwe Districts: Main sources of income for households	68
Table 8: Makete and Rungwe Districts: Assets possession of sampled households ...	69
Table 9: Makete and Rungwe Districts: Average land possessed and land used for maize cultivation.....	70
Table 10: Makete and Rungwe Districts: Staple food and cash crops grown	71
Table 11: Makete and Rungwe Districts: Households daily time allocation (hours) during farming and off-season.....	72
Table 12: Makete and Rungwe Districts: Households source of farm inputs	72
Table 13a: Makete and Rungwe Districts: TASAF projects distribution (n=192).....	73
Table 13b: Makete and Rungwe Districts: TASAF projects and beneficiaries distribution.....	74
Table 14a: Makete and Rungwe Districts: Projects distribution based on marital status and gender of beneficiaries.....	74
Table 14b: Makete and Rungwe Districts: Projects distribution based on gender of participants (n=192).....	75
Table 15: Makete and Rungwe Districts: Attributes considered by households when planning for agricultural activities.....	76

Table 16: Makete and Rungwe Districts: Marketing channels for households	77
Table 17: Makete and Rungwe Districts: Average market price of crops (in Tshs). .	78
Table 18: Makete and Rungwe Districts: Households average distance from marketing point.....	78
Table 19: Makete and Rungwe Districts: Households means of transport.....	79
Table 20: Makete and Rungwe Districts: Source of animals owned and assistance offered to others in case of food shortage.....	80
Table 21: Makete and Rungwe Districts: Households' average food insecurity trend	81
Table 22: Makete and Rungwe Districts: Households' main source of food items in the year.....	82
Table 23: Makete and Rungwe Districts: Households number and average meals/ day.....	83
Table 24: Makete and Rungwe Districts: Varieties of food intake by household per week.....	84
Table 25: Makete and Rungwe Districts: Health services availability and distance effect on its accessibility.....	86
Table 26: Makete and Rungwe Districts: Incidences of diseases for under five years' of age and water accessibility	87
Table 27: Makete and Rungwe Districts: HIV/AIDS awareness, source of information and control	89
Table 28: Makete and Rungwe Districts: Proportions of vulnerables that had free access to healthservices	90
Table 29a: Makete and Rungwe Districts: Women empowerment degree under TASAF participants	91

Table 29b: Makete and Rungwe Districts: Unemployed youth empowerment degree under TASAF participants	92
Table 30: Makete and Rungwe Districts: Vulnerable groups projects support under TASAF intervention	93
Table 31: Makete and Rungwe Districts: Proportion of participants that had TASAF support on rural roads in their village and if they benefited	94
Table 32: Makete and Rungwe Districts: Proportion of sampled vulnerable participants that had TASAF support in dairy cattle and if they benefited	97
Table 33: Makete and Rungwe Districts: Proportion of participants that had TASAF support in environmental conservation in their village and if they benefited	99
Table 34: Makete and Rungwe Districts: Proportion of participants that had TASAF support in poultry in their village and if they benefited.....	101
Table 35: Makete and Rungwe Districts: Proportion of participants that had TASAF support in water investment in their village and if they benefited	103
Table 36: Makete and Rungwe Districts: Proportion of participants that had TASAF support in carpentry works in their village and if they benefited	105
Table 37: Makete and Rungwe Districts: Attributes on project relevance	107
Table 38: Makete and Rungwe Districts: Attributes on project effectiveness	108
Table 39: Makete and Rungwe Districts: Attributes on project efficiency	109
Table 40: Multicollinearity diagnostic result for continuous variables (n =300)	110
Table 41: Pair-wise matrix correlation of dummy variables	111
Table 42: Test for endogeneity of continuous and dummy variables.....	111
Table 43: Makete and Rungwe Districts: Instrumental variables (2SLS) regression of socio-economic status.....	113

Table 44: Makete and Rungwe Districts: Heckman selection model - two-step estimation of food security	115
Table 45: Makete and Rungwe Districts: Heckman's- two-step selection model regression on health status	118
Table 46: Makete and Rungwe Districts: Instrumental variables (2SLS) regression of project sustainability.....	120

LIST OF FIGURES

Figure 1: Evolution of social fund objectives and activities (1987 to late 2000s)	14
Figure 2: A simple logic model	17
Figure 3: Sustainable livelihood intervention framework analysis.....	36
Figure 4: Maps of Makete and Rungwe Districts	40

LIST OF APPENDICES

Appendix 1: Instruments used for data collection.....	160
Appendex 2: Model summary of quantitative estimation.....	170
Appendix 3: Projects created and participants' pictures.....	172
Appendix 4: Tanzania Social Action Fund intervention phase I and II	176

LIST OF ABBREVIATIONS AND SYMBOLS

%	Percentage
2SLS	Two Stage Least Squares
AIDS	Acquired Immune Deficiency Syndrome
ADB	African Development Bank
BSIF	Bolivian Social Investment Fund
CARE	Cooperative for Assistance and Relief Everywhere
CDI	Community Development Investment
CMC	Community Management Committee
CSPC	Community Subproject Cycle
DANIDA	Danish International Development Agency
DEDs	District Executive Directors
DFID	Department for International Development
E-PRA	Extended Project Rural Appraisal
ESMF	Environmental and Social Management Framework
FAO	Food Agriculture Organization of the United Nations
FGD	Focus Group Discussion
FI	Food Insecure
FS	Food Security
GLM	General Linear Model
GoT	Government of Tanzania
HIV	Human Immune Virus
IA	Impact Assessment
IDA	International Development Agency
ILO	International Labour Organization

IMR	Inverse Mill's Ratio
IPE	Impact Project Theory
IPT	Impact Pathway Theory
IV	Instrumental Variables
KI	Key Informants
LGAs	Local Government Authorities
LGCDG	Local Government Capital Development Grants
MASAF	Malawi Social Action Fund
Max.	Maximum
MDGs	Millennium Development Goals
Min.	Minimum
NBS	National Bureau of Statistics
NGOs	Non Governmental Organizations
NSGRP	National Strategy for Growth and Reduction of Poverty
NSSF	Nation Social Security Fund
NUSAF	Northern Uganda Social Action Fund
NVF	National Village Fund
OLS	Ordinary Least Squares
PPOP	Policy for Project Operation Period
PC	Project Coordinator
PMC	Project Management Committee
PRS	Poverty Reduction Strategy
PTE	Project Theory Evaluation
PWPs	Public Works Programs
RESET	Regression Specification Error Test
RHSs	Reproductive Health Services

RIDEPS	Regional Integration Development Programs
RWC	Rice and Wheat Consortium
SAM	Social Accounting Matrix
SAPs	Structural Adjustment Programs
SET	Sector Expert's Team
SIF	Social Investment Fund
SL	Sustainable Livelihood
SMART	Specific, Measurable, Attributable, Realistic and Targeted
SNAL	Sokoine National Agricultural Library
SP	Service Poor
SPAF	Subproject Application Form
SPIF	Subproject Interest Form
SPSS	Statistical Package for Social Sciences
Std Dev.	Standard Deviation
TASAF	Tanzania Social Action Fund
TDV	Tanzania Development Vision
TOL	Tolerance
Tshs	Tanzanian Shillings
UNESCO	United Nations Education and Science Commission
UN	United Nations
UNDP	United Nations Development Program
UNPFA	United Nations Population Fund Agency
URT	United Republic of Tanzania
U5MR	Under Five Mortality Rate
VC	Village Council
VEO	Village Executives Officer

VFC	Village Fund Coordinator
VFJA	Village Fund Justification Assistant
VGs	Vulnerable Groups
VIF	Variance Inflation Factor
WB	World Bank
WEO	Ward Executive Officer

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the study

When Tanzania attained her independence in 1961 the three key developmental issues which required multi-sectoral strategies and actions in redressing the imbalances in the country were poverty, ignorance and disease (URT, 2000a; 2001a). In the early 1970s, the government formulated multi-sectoral strategies termed as Regional Integration Development Programs (RIDEPS)” which aimed at increasing agricultural production and other social services through increased income so as to improve the quality of life of the rural people (Ngasongwa, 1988). Regardless of these efforts, income and non-income poverty is still a problem in both rural and urban areas (URT, 2000a).

It is reported that, Tanzania has concentrated on rural-biased development policies for decades now (Kombe and Limbumba, 2008). Despite the noble policy intentions and investments, the gap between rural and urban areas has increased persistently, triggering rapid rural-urban migration. This has been accelerated by the limited off-farm employment opportunities in rural areas and the possibility of earning higher wages in urban areas (Kombe and Limbumba, 2008). Thus far, poverty is still a challenge particularly in rural areas, where 38% of the population lives below the basic needs poverty line compared with 24% in urban areas (URT, 2010; FAO, 2008; NBS, 2009; 2001b).

On the other hand, The Tanzania Development Vision (TDV) plan for 2025 period declares that nation’s development should be people-centred, based on sustainable and shared growth and be free from abject poverty (URT, 2000b). Moreover, the National

Strategy for Growth and Reduction of Poverty (NSGRP I and II) aims at enhancing growth and reducing income poverty by improving food availability and accessibility and reducing differences in income poverty between men and women in rural areas. Thus, improving quality of life and social well-being through improved survival particularly vulnerable needy groups and improving effective public service framework and poverty reduction through various intervention programmes (URT, 2010; 2005a; 2000b).

Accordingly, in 2000 Tanzania Social Action Fund (TASAF) was introduced aiming at socio-economic empowerment of the communities by provision of productive assets (WB, 2006). TASAF I, 2000 - 4 was a multi-sectoral strategy that focused on improving public social services and infrastructure. Equally, like other social funds, it seeks to protect the poor through people's centred investments which were expected to improve their well-being (WB, 2006). Based on TASAF I, TASAF II (2005-09) came into existence aiming at empowering communities for effective and efficient utilization of the livelihoods assets (see Appendix 4), hence realize the Millennium Development Goals (MDGs) and National Strategy for Growth and Reduction of poverty (NSGRP) (URT, 2005a). However, the opportunity to end extreme poverty requires a holistic approach through demand responsiveness and participatory planning (Chovwen *et al.*, 2009; Haidar, 2009; Kollmair and Juli, 2002; Krantz, 2001).

Therefore, people with no income or means of repayment for agricultural inputs need other kinds of support to enable them make good use of loans such as social protection through small grants, employment and training programs, or infrastructure improvements based on demand driven intervention (Bakhtiari, 2006). In a nutshell, intervention is one particular focus, because of the necessity to break the cycle of poverty, ignorance and

disease (Edun, 2000; URT, 2006a). In the same way, Sindhar (2008) and World Bank (2001) argued that poor health can lead to a decrease in wages earned and productivity. On the other hand, Nazir *et al.* (2010) support that poverty contributes to food insecurity which result in poor nutrition, health and cognitive development which in turn contribute to poverty.

Moreover, the master plan of the Tanzania's poverty monitoring system emphasizes measurement of impact using outcome and proxy indicators covered in the multi-sectorial programme (URT, 2001a). Similarly, TASAF II (2005) operational manual proposed: community score card, citizen report card and social impact assessment as instruments for carrying out an evaluation after every six months, every two years and at the end of the project respectively. However, little information is known. Thus, this study performed an impact assessment of TASAF intervention through different projects in agriculture: Food Insecure (FI), Service Poor (SP), Community Development Investment (CDI) and Vulnerable Groups (VGs) in both Makete and Rungwe districts. The study uses a quasi-experimental approach comprising of conventional and sustainable livelihood models.

1.2 Statement of the problem and justification

About eighty percent of the people in Tanzania live in the rural areas, where poverty is widespread and deep (URT, 2010; 2001a). Accordingly, Voipio and Hoebink (1998) observed that in Tanzania poverty is mainly a rural phenomenon. Also, a study by FAO (2008) and poverty monitoring master plan (URT, 2001a) reported that poverty in rural areas is much higher (38%) compared to (24%) in urban areas. Equally likely, rural growth of the agricultural sector which employs over 80% of economically active

population is about 4.5% (URT, 2010). This contrasts with the national population growth rate of 2.9, consequently the rural per capita income becomes small (URT, 2010).

Again, it is observed that vulnerable people and pregnant women are at risk of accessing health facility due to a long distance from the needed service (URT, 2002). Although, censuses of 1978, 1988 and 2002 show that both Infant Mortality Rate (IMR) and Under Five Mortality Rate (U5MR) declined, they are still higher in rural areas compared with urban areas (URT, 2006a).

Consequently, the Tanzanian government introduced TASAF programmes to address the imbalance. Its investment targeted public works whose vulnerability reduced their chances of making full use of assets created (WB, 2006). All districts in Tanzania adopted TASAF program which has community score card, citizen report card and social impact assessment as instruments for carrying out project evaluation in order to maximize the effectiveness of investments. However, little information on specific effect of projects that are closing on particular target group(s) was available due to poor monitoring approach (TASAF II, 2005). Therefore, the purpose of this study was to perform an impact assessment of TASAF interventions in Makete and Rungwe districts. Thus, the present study will benefit both beneficiaries at the grassroots, districts and national level and policy makers in designing and enforcing integrated policies which will ensure effective and efficient use of community participation approach. Also, the knowledge based on the participatory projects interventions and its sustainability in line with MDGs and NSGRP has been added.

1.3 Objectives of the study

1.3.1 Overall objective

To general objective of this study was to perform an impact assessment of community empowerment by TASAF on effective and efficient utilisation of livelihood assets for poverty reduction in order to contribute to the understanding on the best way to intervene so as to maximize the impact of intervention programs on participants welfare.

1.3.2 Specific objectives

- i. To evaluate the impact of TASAF empowerment on socio-economic status of participants.
- ii. To assess the impact of TASAF intervention on food security and health status of beneficiaries.
- iii. To examine the sustainability of productive assets created by TASAF for food insecure, service poor and vulnerable group(s).

1.4 Research hypotheses

- i. There is no statistically significant difference in socio-economic status between TASAF empowered participants and non-empowered participants.
- ii. There is no statistically significant difference in food security and health status between the community with food insecure, service poor and vulnerable group(s) intervention and without intervention.
- iii. Agricultural productive assets created for poverty reduction through TASAF empowerment intervention are not sustainable.

1.5 Organization of the study

Chapters two and three present literature review and research methodology respectively. Finally, chapters four and five present the descriptive and quantitative analysis of research results and discussion, conclusion and policy implications in the same order.

1.6 Scope of the study

The purpose of the study was to perform an impact assessment of TASAF projects in Makete and Rungwe districts. The present study involved target groups of: able-bodied, widowers / widows, elders, chronic diseased and HIV/AIDS infected, orphan(s) and the society with poor service and non-recipients as a control group. Moreover, key informants, village leaders, beneficiaries' project leaders and focus group discussions were interviewed. The present study surveyed those projects which were already phased out from the financier (TASAF) while those projects which were still on the implementation process were not surveyed. To achieve the study objectives financial matter was a key roadmap; however, twenty one villages were surveyed, of which 11 and 10 villages were surveyed from Rungwe and Makete Districts respectively.

1.7 Research limitations

During data collection, the researcher faced some constraints; hitherto financial was the foremost key restraint and this obstructed the timeframe scheduled for data collection, instead of starting in October, 2009; data was collected with effect from 27 April, 2010 in Rungwe District. However, due to various intervening factors, field study ended on 2nd June, 2010 in Makete District. Moreover, there were communication barriers because the rural roads were impassable to reach other target groups, particularly in Kyobo Juu, Ibungu and Ilamba villages in Rungwe District.

In the same way, some villages which were selected as control groups but had interventions, these included Mpuga and Katabe villages in Rungwe and Ivilikingi in Makete district. These were dropped, but had cost implication in terms of time and monetary. Furthermore, some village leaders' were not aware with village information required either because of poor or lack of knowledge on record keeping. Thus far, Divisions' / Wards' administrative activities or meetings interfered the study in the village of interest as result it was not easy to have an access to either Village Executive Officers (VEOs) / Wards' Executive Officers (WEOs) and other key informants.

Hitherto, the attribution required comparing observed outcomes to a counterfactual and this was an estimate of what would have been happened if the program had not been undertaken (Creevey and DAI, 2008). Accordingly, counterfactual and control groups were established since the project activities in both districts involved dissemination of information through training and other forms of learning-by-doing. As a result, there was likely to experience spill over effects as participants passed useful information and practices on to their friends, relatives and neighbours. As a consequence, a study adopted a non random stratified quasi-experimental approach and Heckman's (1979) two-stage and IV / 2SLS were used in data analysis so as to address non random selection bias and endogeneity problems respectively as used in the next chapter.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 An overview of social protection

Norton *et al.* (2001) and Conway *et al.* (2000) describe social protection as the public actions taken in response to the levels of vulnerability, risk and deprivation which are deemed socially unacceptable within a given society. This deals with the absolute deprivation, vulnerability of the poorest and with the need of the currently non-poor for security in the case of shocks and life cycle events (Norton *et al.*, 2001; Conway *et al.*, 2000). Its rationale is to promote dynamic, cohesive and stable societies through increased equity and security (Norton *et al.*, 2001).

2.1.1 Origin of social protection

According to Norton *et al.* (2001) the term “social protection” is derived to a large extent from global reaction to various forms of economic and financial crisis in the early 1990s that have been associated with contemporary process of globalization such as integration of trade systems and capital markets. These have two contrasting faces: first, they are seen as increasing opportunities for the poorer people and least developing countries to exploit advantages of globalization and secondly, they are seen as increasing insecurity on a global scale by: (a) increasing inequality within and between countries; (b) increasing liberalized international economic environment restricting many sources of revenue which were previously available to governments to fund social expenditures and (c) a global demographic transition in long-term changes in dependency ratios, particularly the growth in the absolute and relative numerical importance of older people (Norton, *et al.*, 2001).

Similarly, according to Lau-Jorgensen and Van-Domelen (1999) globalization has induced the increase in income variability combined with marginalization and social exclusion. Conversely, it has increased vulnerability among vast groups and has amplified greater opportunity, risk and less ability for governments to pursue independent policies. This makes it imperative to re-assess the role of development policies in general and of social protection, in particular.

Thus far, evidence suggests that the poorest households in poor countries rarely benefit from direct state support. They rely on transfers from a range of non-state sources (Conway *et al.*, 2000). However, the development of informal social protection can have powerful benefits in terms of strengthening social capital, social cohesion and governance (Conway *et al.*, 2000). Moreover, majority of the population in low income countries is not covered by any form of statutory social protection, either insurance or non-insurance based. Both of the insurance schemes, private or state find it hard and risky to cover the workforce in the informal sector who receive low and irregular wages and do not support regular social insurance contributions (Norton *et al.*, 2001 and Conway *et al.*, 2000).

Furthermore, social protection emphasizes the double role of risk management instruments that is protecting basic livelihood as well as promoting risk taking. It focuses on the poor, since they are most vulnerable to risk and typically lack appropriate risk management instruments (WB, 2003b). Similarly, social cohesion interventions take various forms such as interventions aimed to promote social cohesion including social funds, Community-Driven Development (CDD) and re-construction projects (King and Samii, 2009). However, shocks and fluctuations in the household income often result in food insecurity, human capital decumulation, low-risk and low-return livelihood

decisions. Thus, social risk management strategies can address shocks and fluctuations to sustain social livelihood (Lau- Jorgensen and Van-Domelen, 1999).

2.1.2 Social risk management strategies

According to Lau-Jorgensen and Van-Domelen (1999) social protection helps individuals, households and communities better manage risk and provide support to the incapacitated poor. Social risk management aims at giving the poor voice, security and opportunity. However, risk management strategies include prevention, mitigation and coping (WB, 2003b; Lau-Jorgensen and Van-Domelen, 1999). The last strategy is commonly used in most social funds to relieve the impact of a disaster once it has occurred to beneficiaries as depicted in the next section.

2.1.3 Social risk management instruments

Lau-Jorgensen and Van-Domelen (1999) stated that risks can be addressed by three risk management instruments: informal or personal, formal or market based, and formal or publicly mandated arrangements. However, the last instrument is popular in social interventions in case of social stress. The government has a whole array of instruments to cope with the consumption effect of the lost income as described in section 2.1.4. Therefore, the choice depends on distributive concerns such as cash or in-kind and the type of shock (Lau-Jorgensen and Van-Domelen, 1999).

2. 1.4 Insurance programs

Insurance, as a social risk management instrument is of various types. Social insurance is contributory, based on the principle of risk sharing and pooling of resources. However, beneficiaries whose livelihood is centred on agriculture, crop insurance may play the same function as social insurance does for waged-labour, by guaranteeing a minimum

wage as a prevention strategy against crop failure (Lau- Jorgensen and Van-Domelen, 1999; Kasek, 1997).

On the other hand, provident funds unlike social insurance are not based on the principle of risk sharing and the pooling of resources (Kasek, 1997). They operate as compulsory saving schemes. This is because benefits are paid as a lump sum and do not guarantee regular income maintenance. The lump sum payment can be exhausted within a short period of time leaving the beneficiary without any social protection for the entire future life time. Currently, provident fund scheme particularly in Tanzania has changed into National Social Security Fund (NSSF). Thus, it is based on the principle of sharing and pooling resources like other social insurance funds.

Moreover, microfinance services can contribute to social protection by enabling the poor to save, creating a buffer against expenditure shocks and access loans which can be used to invest in an income generating activity (Bakhtiari, 2006; Lau- Jorgensen and Van-Domelen, 1999). This enables beneficiaries to prevent themselves from any social stress or even mitigate through portfolio diversification before the impact on livelihood occurs.

Furthermore, social assistance is designed to provide assistance to persons of limited means. It is financed from general taxation or donor agencies. It is a means-tested in order to ensure that only needy persons benefit (Kasek, 1997). However, this is influenced by the residual model of social welfare which views the family and the market economy as the accepted channels for the fulfilment of needs. Along this model, welfare assistance is provided in circumstances where an individual is unable to make use of the family or the market economy (Lau-Jorgensen and Van- Domelen, 1999; Kasek, 1997).

Lastly, employment support in the form of public works is widely used. It is the most primary component of social funds in Africa and Latin America. This approach seems attractive in that it appears to offer a way to combine the creation of infrastructure and self-targeted provision of a minimal wage to the poor. Though, in practice it is very hard to achieve both goals satisfactorily. Therefore, this may be inefficient way of providing benefits (Lau-Jorgensen and Van-Domelen, 1999). Mostly, able-bodied and food insecure participate. Thus, the sake of cash-for-work enable them earn their livelihood.

However, WB (2003a), Norton *et al.* (2001) and Conway *et al.* (2000) conclude that the development of effective social protection policy must be underpinned by the following strategic policy priorities: (a) social protection policy development should start from the needs, realities and priorities of the beneficiaries. (b) states must engage with informal, traditional and private systems so that public policy makes best use of their potential. (c) public policy needs to be designed to prevent shocks which will have a negative impact on the poor and the society at large. Thus far, by promoting diversified income sources for the poor, these measures can help those affected cope once shocks have occurred and have had an impact.

As opposed to formal social security, the extended family and children have been traditionally regarded as a social security institution providing support to its members in the event of exposure to contingencies such as sickness, old age, death and drought. However, the development process has resulted in the gradual weakening of its cohesion (Kaseke, 1997). Also, he contends that the harsh economic realities in poor countries have made it difficult for individuals to provide assistance even though they may be willing to fulfil their obligation. Therefore, the appreciation in the cost of living

stimulates the need for formal social security, particularly social assistance in a form of social funds (Kaseke, 1997).

2.2 Social funds

2.2.1 Definition of social funds

De Silva and Sum (2008) define social fund as agencies that channel grants to communities for small scale development projects. Similarly, it is an innovative and community based tool used to alleviate social and economic crisis (Rawlings, *et al.*, 2003; Weissman, 2001). Leneiye (2005) in his study of Malawi social action fund (MASAF), Tanzania Social Action Fund (TASAF) and Northern Uganda Social Action Fund (NUSAF) defines social funds as the Community Sub-Project Cycle (CSPC) that regulate the distribution of power so that communities are able to 'slice' part of the 'resources' in accordance with their needs, capacities and still remain accountable to the government. Globally, social funds are defined as demand-driven, multi-sectoral operations that are typically managed by a semi-autonomous body (De Silva and Sum, 2008). Generally, social funds are defined as a response to reduction of poverty and social exclusion. Thus, this study adopted Leneiye's definition.

2.2.2 The evolution of social funds

The first World Bank-supported social fund, the *Fondo Social de Emergencia* (emergency social fund) in Bolivia was established in 1987. It was used to mitigate the effects of the World Bank's support to highly visible Structural Adjustment Programs (SAPs) in the late 1980s and early 1990s (De Silva and Sum, 2008; Newman, 2002). The Bolivian Social Investment Fund (BSIF) proved that social funds could operate to scale, bringing small infrastructure investments to vast rural areas (Newman, 2002).

To date, the fund is set up on the background of a realized need by a donor or by a host country (Kammersgaard, 1999). It acts as a free-standing social protection instrument that target under-served population (De Silva and Sum, 2008). Thus far, timeline in Fig.1 captures the evolution of social fund projects objectives over time across the entire portfolio of social fund projects.

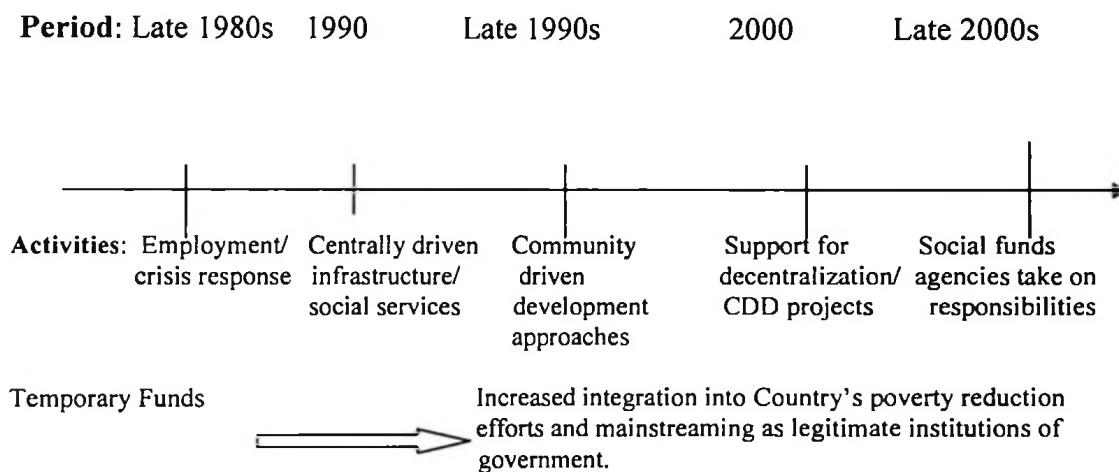


Figure 1: Evolution of social fund objectives and activities (1987 to late 2000s)

Source: De Silva and Sum (2008)

2.2.3 Objectives of social funds intervention

Globally, social funds were set up to provide temporary employment and a bridge over the crisis through lower-based income transfers and a subsidization of social services and infrastructure. Today, multiple objectives fall broadly under the umbrella of efforts to improve the living conditions of the poor by addressing unmet needs (Batkin, 2001; Lau-Jorgensen and Van-Domelen, 1999). These can be targeted relatively and efficiently by providing social protection in situations where acute or chronic problems are geographically localized (TASAF II, 2005). Today, almost all countries in Latin America, Caribbean, Sub-Saharan Africa and North Africa, Middle East, Eastern Europe

and Central Asia have social funds that share the same operational strategy (Batkin, 2001; Lau-Jorgensen and Van-Domelen, 1999).

However, several social fund evaluations have found that participation is restricted to the involvement of the community (Batkin, 2001). Thus, community contribution in decision making facilitates a greater pool of knowledge and exposes individuals to different perspectives (Hashim *et al.*, 2010). Therefore, it accelerates acceptance and motivation on owning the process and outcomes of empowerment. Though, sharing is not a panacea to achieve the desired outcomes, so far it can even be counterproductive (Royal Tropical Institute, 2011).

Hitherto, intervention is sustainable if it attains long-term goals without dependency (Royal Tropical Institute, 2011; Parveen, 2009). Globally, social funds do not perform well in measuring social impact of their investments (Lau-Jorgensen and Van Domelen, 1999). Therefore, the purpose of this study was to perform an impact assessment of TASAF to fill the gap as explained in the next section.

2.3 Impact assessment

2.3.1 Definition of impact assessment

Different scholars define Impact Assessment (IA) in different views. However, most scholars define IA as a process of systematic and objective identification of the short and long-term effects, positive or negative, direct or indirect, intended or unintended primary and secondary on the lives of participants. All these being caused by an on going or completed development project (Garbarino and Holland, 2009; La Rovere and Dixon, 2007; UNESCO, 2007; Environmental health directorate, 2007; Adams, 2001; and Ashley and Hussein, 2000).

While others define IA as a systematic analysis of the lasting or significant changes either positive or negative, intended or not in peoples' lives brought about by a given series of actions (Lecy, 2010; Roche, 2010). However, this may be an *ex-ante* or *ex-post* partial or comprehensive evaluation done at least once in every five years (FAO, 2000; Anandajayasekaram *et al.*, 1996). La Rovere and Dixon (2007) concluded that IA helps to understand the extent to which activities affect the poor, objectives fulfilled and the magnitude of their effects on people's welfare. In summary, these views on IA are similar and they have key words in common. Thus far, this study defines an IA study as concerned with counterfactual, the difference the project has made (how indicators behaved with the project compared to how they would have been without it). Consequently, the following sections explain the theoretical aspects of IA.

2.3.2 Project evaluation theories

Project evaluation theories consist of a sequential hierarchy of outcomes with milestones on an intervention (Kuby *et al.*, 2003). Project Theory Evaluation (PTE) begins with the project outputs. Next, a chain of intermediate outcomes is then followed by the wider and often long-term outcomes. However, Impact Pathway Theory (IPT) uses PTE to guide its implementation and hence facilitates *ex-post* IA associated with the attribution gap (Kuby *et al.*, 2003). Equally, logic theory describes the intervention basics overtime from planning through the series of reasoning '*if...then*' to the results (Rogers, 2008; Kellogg Foundation, 2004). Both theories concentrate largely on the model specific outcomes that link the project outputs to the direct benefits of the recipients as illustrated in Figure 2. However, its weakness is that both assess the intended direct benefits only. Therefore, theory based impact evaluation advocates whether the intervention has, or has not had an impact (White, 2009).

In view of the project theories, IA focuses on the achievement of existing project objectives through planned activities (Ashley and Hussein, 2000; Power and Riddell, 1998). Thus, development and poverty reduction impact assessments must take a short and long-term view and both intended and unintended consequences of the project across a livelihood concern of beneficiaries could be considered (Baker, 1999). Moreover, conventional evaluation focuses on assessing whether a project has met its stated objectives and contribute to the achievement of the overall project goal (Ashley and Hussein, 2000). However, the next section explains the relevance of livelihood intervention.

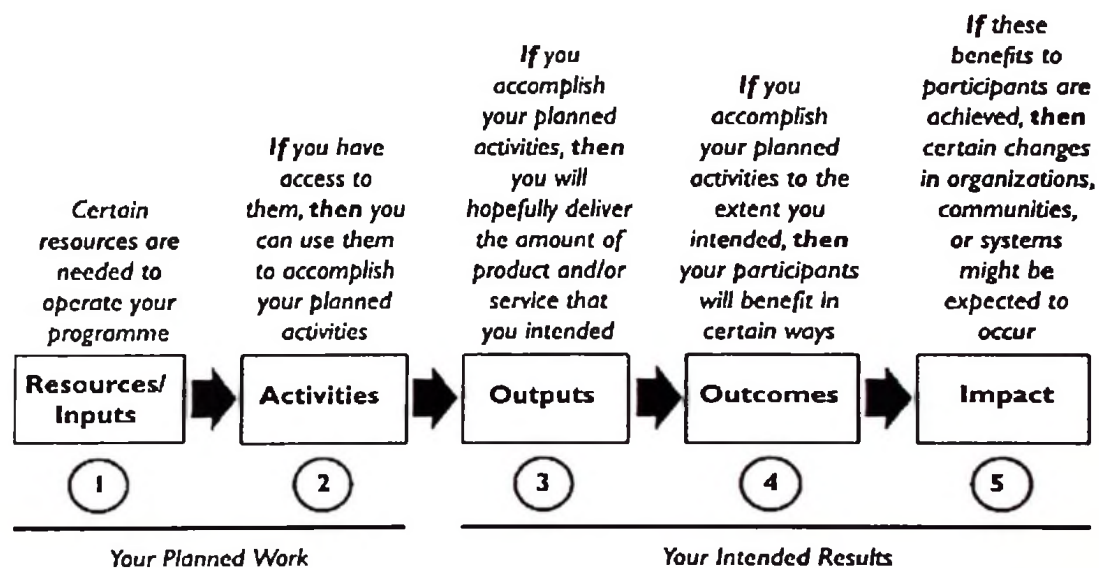


Figure 2: A simple logic model

Source: Kellogg Foundation (2004)

2.3.3 Theories on relevance of livelihood intervention

According to Scoones (2009) interventions on livelihoods' perspectives offer an important lens for looking at complex rural development questions. However, projects for development activities must address correctly questions across the themes of knowledge, politics, scale and dynamics of the beneficiaries (Ahmed, 2009). Whereas, development intervention may be essential for poverty reduction; yet, there is no

automatic relationship between the two, though all depends on the capabilities of the beneficiaries to take advantage of expanding economic opportunities (Kratz, 2001). Thus, it is important to find out what precisely constrains the poor from improving their livelihoods, given the intervention.

Equally, IA involves judging, appraising or assessing the worth value or quality of interventions in terms of their relevance, efficiency, effectiveness and sustainability as well as impacts (Bellamy, 2000; UNESCO, 2007; La Rovere and Dixon, 2007; African Development Bank Group, 2006). Direct IA assesses who is directly affected by development intervention and how much they were affected (WB, 2003a). This can be achieved by using information gained through one method and validated by triangulation (Pattanayak, 2009; Adams, 2001). However, a project could be ineffective because the project design was poor, or because a well designed project was poorly implemented, or both (Lecy, 2010).

Hitherto, project development intervention activities to poor peoples' priorities lead to livelihood promotion of financial credit and savings, crop diversification, marketing and improved health status. In brief, intervention activities can be of three types: first, livelihood protection by cash or food for work. Second, direct provision of essential needs such as food, water, shelter, and livestock projects. Finally, action affecting social vulnerability such as illness, disability, old age and death of family members (International Federation for Red Cross Society, 2007). These are similar to this study. However, the first one involved able-bodied participants, yet, not all were paid. The second and third involved widows /widowers, elders, chronic diseased and HIV/AIDS infected individuals.

Until then, Sustainable Livelihood (SL) approach framework identifies ways to advance the livelihood of the vulnerable people. Findings showed that farmers achieved SL through access to a range of livelihoods assets. All farmers' income made on a profit from production and had improved their socio-economic conditions such as income, food production and employment opportunities increased (Ahmed, 2009). However, lack of resources, vulnerability and poor institutional support were identified as constraints to long-term sustainability of the intervention activity. The study concluded that, the provision of low-interest credit would help to reduce the risks for small and marginal farmers (Ahmed, 2009). Thus, farmers require credit at low interest rates from the government. This is particularly the case for extensive farmers so that they can graduate from extensive to semi-intensive farming systems. However, better training and extension services would also help to improve profitability and reduce risks. Thus far, they are relatively low cost methods of increasing production efficiency to improve their livelihood.

Similarly, the provision of rural roads infrastructure is an essential service that should be in place to reduce households' vulnerability to economic shocks, enable and stimulate rural socio-economic growth and development (IDA, 2008; Lombard and Coetzer, 2007; Ochieng, 2002).

2.3.4 Theories on intervention sustainability

Livelihood intervention comprises the capabilities, assets and activities required as a means of living. It is sustainable when it can cope with and recover from stresses and shocks (Haidar, 2009; Kratz, 2001). This approach is a way of thinking about the objectives, scope and priorities for poor peoples' development. It places poor people and their priorities at the centre of development. Then again, focuses on poverty reduction by

empowering the poor to build on their opportunities and supporting their access to assets. The core to this is a set of principles that underpin best practices in any development intervention: people centred, responsive participatory, multi-level conducted in partnership, sustainable and dynamic (Haidar, 2009; Kratz, 2001).

On the other hand, Lund-Thomsen (2007) describes categories of intervention sustainability into four groups: first, benefit sustainability-whether or not the benefits derived are likely to continue once external funding has expired; second, organizational sustainability-whether organizational structures created are likely to function after the project has ended; third, financial sustainability-whether finance will exist to carry on project activities and finally, sustainability as learning- whether the participants in the intervention have become capable of learning and managing the assets created for poverty reduction once external support comes to a halt. Thus, these benefits were important factors to this study.

For instance, IA of rural roads sustainable benefits can be measured in terms of: direct benefits such as travel time savings and savings in vehicle operating costs; indirect benefits including employment opportunities and sources of revenue; and induced benefits attributed to local economic benefits for instance enhanced self-sufficiency, increased production and efficiency. All these results from improved access to markets for agricultural produce, social services, increased diversified households' income and subsequently a more equal income distribution and hence poverty reduction (IDA, 2008; Lombard and Coetzer, 2007; Ochieng, 2002).

According to Swan (2004) lack of sustainability of intervention raises doubts about the long-term contribution of projects to income expansion and poverty reduction.

Moreover, effective intervention projects require greater commitment of funds and resources to literacy and basic training. Thus far, agriculture and the rural off-farm sector are likely to have a sizeable impact on rural poverty. Therefore, development intervention is said to be relevant and sustainable if livelihood approach comprises a set of principles for poverty reduction as described in the following section.

2.3.5 Theories on impact assessment

The foundation of an IA is a focus on causal linkages to determine changes that have resulted from project participation (Barnes and Sebstad, 2000). IA takes into account short and long-term effects of the projects to the beneficiaries' lives. It determines if the project had the desired effects on beneficiaries and individuals (Baker, 1999). However, there may be other factors or events that are correlated with the outcomes that are not caused by the project. An IA estimates the counterfactual, that is, what would have happened had the project never taken place (Baker, 2000; 1999).

However, IA of the project for development involves three components: describing the changes which have occurred in a community since the start of a project; relating these changes to project activities; and lastly, understanding the links between change which has resulted from the project and human welfare (Catley, 1999). However, these effects can be economic, social-cultural, institutional and technological or other types (UNPFA, 2004).

La Rovere *et al.* (2008) describe that IA is increasingly attempting to capture different types of impacts, direct and indirect. Assessment of local development impact focuses on how much cash, how much increased production or how many jobs were generated (Ashley and Hussein, 2000). However, its consequences are observed in livelihood

0565507



dimensions such as food security, assets owned, risk and vulnerability (La Rovere *et al.*, 2008; Ashley and Hussein, 2000).

Similarly, poverty reduction is often judged in terms of the impact of project participation on income, consumption and net worth of the households. It also takes into account the effect of the households' vulnerability and the impact on employment at the enterprise or household level or both. In order to capture the additional impact of the project intervention, the study should rely on the evidence of vulnerability and impact on the welfare of women and children (Swan, 2004). Accordingly, women and unemployed youth were investigated to ascertain the effect of the project intervention on their vulnerability.

To date, intervention impact isolation using participants and non-participants explicitly focuses on livelihoods (Haidar, 2009). Livelihoods assessment gains an understanding of the significance of the project to the livelihoods of project participants and other local residents. Such an assessment is based on the premise that the project participants shared a core aim, the enhancement of local people's livelihoods (La Rovere and Dixon, 2007; Ashley and Hussein, 2000).

Accordingly, Power and Riddell (1998) identified three key questions of an IA: the extent to which a project reached the appropriate target population; whether or not its service delivery was consistent with project design; and what resources were expended (process indicators). However, these key questions are crucial for a sustainable livelihoods analysis of an intervention study.

As noted above, process and or impact indicators are used in IA. The process being quantitative which measures the implementation of project activities such as quantifiable inputs provided. However, the later can either be quantitative or qualitative or both. Qualitative impact indicators measure the social-welfare like improved knowledge of the recipients and participation satisfaction. In contrast, quantitative impact indicators are often associated with economic impact such as increased beneficiary's income and reduced goods prices (Pattanayak, 2009; Catley, 1999). Both indicators have a cause and effect relationship from inputs to impact. Though, the first indicator is a necessary and sufficient condition for the second one.

In the same way, development and application of indicators which are identifiable qualitative and quantitative measures identifies and describes the performance, effectiveness, cost-benefit and impact indicators (Bellamy, 2000). IA assesses the difference in the values of key variables between the outcomes on project participants who have experienced an intervention against the values of those variables that would have occurred had there been no intervention (Hulme, 2000; Baker, 1999). However, an increase in the beneficiaries' nutrition, education, and health are assumedly the result of a rise in income (Lecy, 2010).

Moreover, Spath (2004) defines levels of impact as:

- i. Impact - positive or negative, primary or secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended;
- ii. Outcome - what is likely to be achieved in short and medium-term effects of an intervention and,
- iii. Output - products, capital goods and services which result from a development intervention.

Furthermore, Ochieng (2002) outlines the identifiable relevant indicators for IA of rural roads as: first, transport project outputs including vehicle operating costs, duration and fares of transport; secondly, transport project outcomes such as access to jobs, markets, health, educational and credit facilities and low prices of goods, and; finally, welfare or living standard outcomes for example diversified incomes, literacy level, health status and off-farm activities.

Pattanayak (2009) argues that identifiable indicators should be SMART in IA: S = specific, what is intended to be measured; M = measurable, should be clear and unambiguous; A = attributable to the project; R = realistic, reasonable cost and frequency of data collection and; T = targeted, about the relevant target population.

Accordingly, there are an infinite number of variables that can be used to study impacts. Thus far, deciding on what variables to include in an assessment, it is important to ensure that they are linked to hypotheses (Barnes and Sebstad, 2000; Sebstad, 1998) and are defined with precision such that they are measurable so that they can show direction of change (positive or negative, increased or decreased) and pattern of change (ordinal, scale) (Sebstad, 1998).

However, measurable control variables such as: geographical location, education, occupation, wealth, household size and land owned can be used for a comparison between participant and non-participant group so as to detect biases. Also, variables including changes in household income, consumption, assets, nutrition and health status are prime in IA (DANIDA, 2008). In summary, variables for livelihoods approach differ from conventional evaluation in its focus on people's lives rather than on defined outputs (Erenstein *et al.*, 2007; Ashley and Hussein, 2000). Thus, dimensions of poverty; food

security, nutrition, health status, literacy and education, credit, safe drinking water, sanitation, physical assets and other infrastructure facilities were included in this study.

2.3.6 Theories on methods for impact assessment

However, people's sense of well-being is a critical factor in assessing the sustainability of livelihoods and a number of challenges and methodological issues emerged to that effect and the difficult in obtaining comparable data across contexts. Even though, various participatory methods can help to define well-being, the problem still arises that perceptions vary from place to place and person to person (Ashley and Hussein, 2000). This study faced a problem in constructing a perfect comparison group; however, a quasi-experimental approach was used for establishing a counterfactual comparison group among other methods including experimental approach. The choice of this approach is dictated by its ability to generate comparison groups that resemble the treatment group in at least one observed characteristics through econometric methodologies (Baker, 2000). It is worth saying that, a decision of which evaluation method to use depends on the nature of the intervention being evaluated. Still, choosing a particular method involves trade-offs, therefore most methods of IA suffer from not having a perfect control and using incorrect model specification (ADB, 2006; Barnes and Sebstad, 2000).

However, randomization removes at least on average any systematic differences between the groups. No pre-testing is needed. This approach serves as the gold standard design for IA. The impact of the treatment can be measured simply by comparing the mean outcomes of the treatment and control groups obtained through statistical techniques. Thus, most experimental methods are confined to a determination of the mean impact of the project which however, does not answer other questions such as proportion of

participants and positive or negative impact as this study intended to answer (Adeoti *et al.*, 2009; Grossman, 2005; Spath, 2004; Wassenich and Whiteside, 2004; Ochieng, 2002; Power and Riddell, 1998).

On the contrary, Greenstone and Gayer (2007) and Blondal (2007) argue that in random assignment, the treatment and control groups should be statistically identical in all dimensions except exposure to the intervention and is invalid to assume that the selection bias is zero (Greenstone and Gayer, 2007). Therefore, if selection bias is assumed zero, thus both control and treated groups should be in a closed universe to confine spill-over effects. This is not easy to practice. Otherwise, randomized selection is considered unethical or unacceptable (Hulme, 2000) as it identifies the differences statistically to isolate impacts of the project (Baker, 1999).

Even though, randomized evaluation has high internal validity because of high quality of the counterfactual, the internal validity is highly objective to the project design and implementation (Blondal, 2007; Baker, 2000; 1999). Thus, the result can be biased if problems such as attrition, spill-overs, contamination and randomization are not properly taken care of (Vaessen, 2009; ADB, 2006; Hulme, 2000). Thus far, it may also be difficult to assure that the assignment is truly random if it was not possible to construct treatment and control group through experimental design, then quasi-experimental could be used to carry out IA (Hulme, 2000) as depicted in the next section.

As explained previously, Vaessen (2009) discourages the use of randomized design in carrying out IA due to its mentioned weakness. Vaessen argues that in quasi-experimental approach, the participant group is compared overtime with the situation of an equivalent comparison group not affected by the intervention. The merit of this is that

intervention outreach is *ex-post* IA as has been the case in this study. This approach seeks to compare the outcomes of an intervention with a simulation of what the outcomes would have been, had there been no intervention (Blondal, 2007; Greenstone and Gayer, 2007; Hulme, 2000; Barnes and Sebstad, 2000; Baker, 2000; 1999).

Hitherto, quasi-experimental models are frequently the only satisfactory way to proceed. This can be done by: firstly, statistically controlling the differences between groups during data analysis (Randler and Bogner, 2008; Grossman, 2005; Layfield and Flagg, 2004; Spath, 2004; Wassenich and Whiteside, 2004; Ochieng, 2002; Baker, 2000; 1999). Secondly, matching participants and non-participants according to key traits (such as age, sex, and education) believed to influence the outcomes of interest (Grossman, 2005; Spath, 2004; Power and Riddell, 1998). However, locations, time and people are major threats to validity in a quasi-experimental design (Greenstone and Gayer, 2007). Thus, the principal disadvantage of this technique is selection bias through which an individual or location is targeted (Baker, 2000).

Conversely, problems of sample selection bias underlying respondents' motivation must be overcome. However, selection bias may occur because of: (a) difficulties in finding a location at which the control groups' economic, physical and social environment matches that of the treatment group; (b) the treatment group systematically possessing an invisible attribute which the control group lacks; (c) receiving any form of intervention may result in a short-term positive response from the treatment; (d) the control group becoming contaminated with the treatment group and (e) the spill-overs of treatment from the treatment to the control group (Swan, 2004; Hulme, 2000). This refers the use of an intervention by someone else rather than the beneficiary (Swan, 2004).

In this study, problems (a), (d) and (e) were addressed by having careful selection of the control group by ensuring that the control group was located far away from the treatment group, while problems (b) and (c) were addressed by triangulation of mixed methods for data collection during the field study and excluding villages with intervention in the control group as stated in the limitations. However, quasi-experiments require analysis techniques to deal with the differences between groups so as to isolate the effect of the intervention using statistics and econometric models (Grossman, 2005; Spath, 2004; Hulme, 2000; Baker, 2000; 1999; Power and Riddell, 1998). This was solved by using instrumental variables methods and introducing the bias correction factor in the Heckman's selection two-stage model.

Accordingly, selection bias in measuring the impact of intervention project can also be reduced by the non-random placement of the project (Swan, 2004). However; Greenstone and Gayer (2007) and Blondal (2007) contend that the use of Instrumental Variables (IV) solves the problem of selection bias. The key assumption is that instrumental variable correlates with the treatment (endogenous) variable, but independent of potential outcomes. In addition, conditions for IV to provide a consistent estimate of intervention requires that, the instrument should predict effects and is orthogonal to the unobserved determinants of the potential outcomes (Baker, 2000).

Similarly, a two stage least squares (2SLS) framework could be employed, this strategy produces consistent results. This is because the 2SLS approach is algebraically identical to the IV. The intuition is that the IV discards the variation in the potential outcomes that is a dichotomous. The validity of IV approach is based on the assumption as noted earlier by (Greenstone and Gayer, 2007). Though, their efficiency depends on sample size and the magnitude of variance. Moreover, in the Heckman's (1979) two-stage model, the

selection and the outcome model in which the sample bias correction factor is derived and introduced has strength over 2SLS. Together with factors that influence determination, the model specifies the impact of participation and correctness of the specified model. Thus far, qualitative and quantitative approaches were also employed in this study.

Ashley and Hussein (2000) argue that key features of IA are on cross-checking multiple types of data, both qualitative and quantitative. In addition, Garbarino and Holland (2009) describe the combined methods of qualitative analysis in IA yield credible results. However, quantitative methods produce data that can be aggregated and analyzed to describe and predict relationships whereas qualitative techniques focus on understanding process, behaviours and conditions as perceived by the individuals or groups studied.

Again, qualitative technique yields critical insights into beneficiaries' perspectives, the process and context that may affect outcomes and interpretation of results observed in quantitative analysis. Qualitative tools used are conversational interviews with key informants, focus group discussion with beneficiaries, and participant observation in targeted communities complemented by semi-structured interview schedules (La Rovere and Dixon, 2007; Adam, 2006; Swan, 2004; Wassenich and Whiteside, 2004; Adams, 2001; Baker, 2000). Also, qualitative techniques help to probe and explain the relationships and contextual differences in the quality of the relationships (Garbarino and Holland, 2009).

Furthermore, qualitative variables are transformed into binary variables taking precaution of having perfect collinearity as described in the methodological section. This study uses *ex-post* quasi-experimental, focus group discussion, participatory observation, key

informants and interview schedule approaches to address measurement problems so as to enhance reliability and validity of the study.

2.4 Experience from previous studies

2.4.1 Global studies on impact assessment

Many IA studies have been carried out by different scholars worldwide. A study by Rao (2002) on Community Driven Development (CDD) in Jamaica revealed that projects were designed to address the most compelling need of the community. However, there was no match between the community preferences and the project, thus community leaders were perceived to have a greater say in decision making during the project operation and were biased against the poor. Therefore, CDD seemed not to be a panacea for the poor people.

Contrary, IDA (2008) found that road projects in Nicaragua were linked to substantial increase in crops yields, land cultivated, seasonal work opportunities and enhanced social services and other dimensions of well-being. Consequently, they reduced spoilage of perishable agricultural products and generated better prices for farmers. Similarly, Ochieng (2002) observed that rural roads empowered the poor by facilitating access to information, political participation and enhanced security by making it possible to respond to economic and natural shocks.

According to Simester *et al.* (2000) United States of America (USA) and Spain used non-equivalent control and treatment groups from the same panel of customers and non-equivalent dependent variables to enhance customer satisfaction. Their findings were not significant for overall satisfaction in USA, but had a positive sign. In contrast, the Spanish intervention appeared to increase satisfaction with ancillary needs and overall

satisfaction. Whereas, Rocha and Soares (2009) studied direct and indirect impacts of family health program in Brazil and the effects of the program on mortality and household behaviour. The study revealed that, the program had effects on reduction in mortality and had increased employment opportunities for older men. At the same time fertility was reduced while female labour supply and school enrolment of children increased.

On the other hand, DANIDA (2008) used “with and without” and qualitative method in assessing aquaculture projects in Bangladesh. Observations showed that treatment effect was significantly negative on household income, health status and assets owned for both groups though, beneficiary profiles showed that substantial proportions of the beneficiaries were at the margins of what could be considered as poor (DANIDA, 2008).

Conversely, Randler and Bogner (2008) used both experimental and quasi-experimental approach in German to assign control and treatment groups. The findings revealed that both groups scored similarly. Thus, the study concluded that the quasi-experimental approach is often the best possible than experimental. The result suggests that despite of the groups being different, later approach seems sufficient in research analysis. On the other hand, Layfield and Flagg (2004) selected quasi-experimental design to determine the impact of service-learning on students’ achievement. The findings showed no statistical significance difference between the treatment and control group. The study concluded that participants in service learning activities did not achieve any higher scores than non-participant. However, a small number of respondents and a low number of variables in the study was a limitation to generalization of the findings.

2.4.2 Experience of IA studies in Africa

In Zambia a two stage least square regression (2SLS) model was used to estimate the effect of program exposure on the behavioural outcomes on family planning and HIV/AIDS (Rossem and Meckers, 2007). Findings revealed that the reproductive health and social marketing campaigns reached a large portion of the population and had a significant impact on condom use. The study concludes that campaigns investing in radio may be more effective than those investing in television programming. However, 2SLS has no sample bias correction factor for estimating impact, yet it solves endogenous explanatory problem.

A study by Musamali *et al.* (2007) on school lunch intervention in Kenya revealed that the total nutrient food intake by the participants were significantly higher than the non-participants. Therefore, they concluded that school lunch enhances children nutritional status. Similarly, Asgedom (2007) revealed that poultry keeping in Ethiopia had significantly contributed to the livelihoods of poor households economically as starter capital to recover from disasters. The study showed that households were able to access protein and increased income for exchange purposes. In the same way, Aruna and Alabi (2006) studied family poultry project in Nigeria used “before and after method” showed that income from family poultry contributed significantly to women income. However, illiteracy of the beneficiaries was a major limitation to technological adoption in livestock and crop production.

In Ghana, Adeoti *et al.* (2009) used production function to assess the effects of treadle pump adopters and non adopters. The study revealed a significant impact of Treadle Pump (TP) technology on small-holders as cropping intensities, irrigated cropland and farmers’ income increased. Besides, labour productivity for poverty alleviation also

increased. Similarly, Catley (1999) in Southern Sudan used the “before and after” approach, IA study showed that the animal health projects implemented in the country had a positive impact on the lives of people in project areas as it reduced livestock diseases and increased production of food particularly milk.

In Zimbabwe, Juana and Mabugu (2010) used social accounting matrix (SAM) to assess the small-holder agriculture’s contribution to the economy. They observed that small-holder agricultural sector overall impact on the economy was low; however, it has the most significant impact on value added, households’ income generation and poverty reduction. Thus, small-holder agriculture promotes livelihoods sustainability development particularly the poorest people in economic activities.

On the other hand, in Tanzania there had been some studies on IA including that by the African Development Bank Group (2006) which used non-experimental approach and found that the bank groups’ assistance had made a significant contribution in agricultural sector. The study concluded that assistance to the small holder projects offered the greatest opportunities for poverty reduction, improved food security and sustainable development. Also, Sieber (1996) used “with and without” approach to study the use of donkeys in generating larger economic benefits. The findings revealed that non-donkey households’ marketed less tones of agricultural products per year than donkeys households’. It was evidenced that, the later used much fertilizer compared to the former. The study concluded that buying a donkey generates much benefit to households’ income per year through increased marketing.

In conclusion, different scholars used different methodological approaches in IA. Basing on theories for IA, this study uses quasi-experimental and qualitative and quantitative

approaches because of the non-random stratified sample. However, Heckman's (1979) two-stage model and IV/2SLS were employed in analysis of cross-sectional data. These methods solved the non-random stratified selection bias and endogeneity problems respectively, as addressed in the next methodological chapter.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Conceptual framework

A modified DFID (1999) Sustainable Livelihood (SL) conceptual framework, Figure 3, has been adopted for intervention livelihood analysis in this study. Hitherto, different international agencies including UNDP, CARE and DFID use it as a strategy towards poverty alleviation. However, DFID approach is more realistic for SL analysis (Krantz, 2001; Frankenberger *et al.*, 2000). According to Scoones (1998) livelihood comprises the capabilities, assets and activities required as a means of living by the vulnerable poor people. Similarly, Chambers and Conway (1991) argue that capabilities are both an end and means of livelihood. The framework shows multiple interactions between various factors which affect livelihoods (Scoones, 2009). These include; vulnerability context, livelihood assets, transforming structures, livelihood strategies and outcomes.

The vulnerability context indicates a scheme within which project participants and non-participants operate. This comprises shocks, trends and seasonality which are beyond their control (DFID, 1999). However, it has an external influence on livelihoods that impact on peoples' asset base. For instance, illness shock caused by fatal HIV /AIDS endemic disease and seasonality shifts in prices, production, food availability, employment opportunities could be most long-standing sources of hardship for the poor people (Ahmed, 2009; Haidar, 2009; Erenstein *et al.*, 2007).

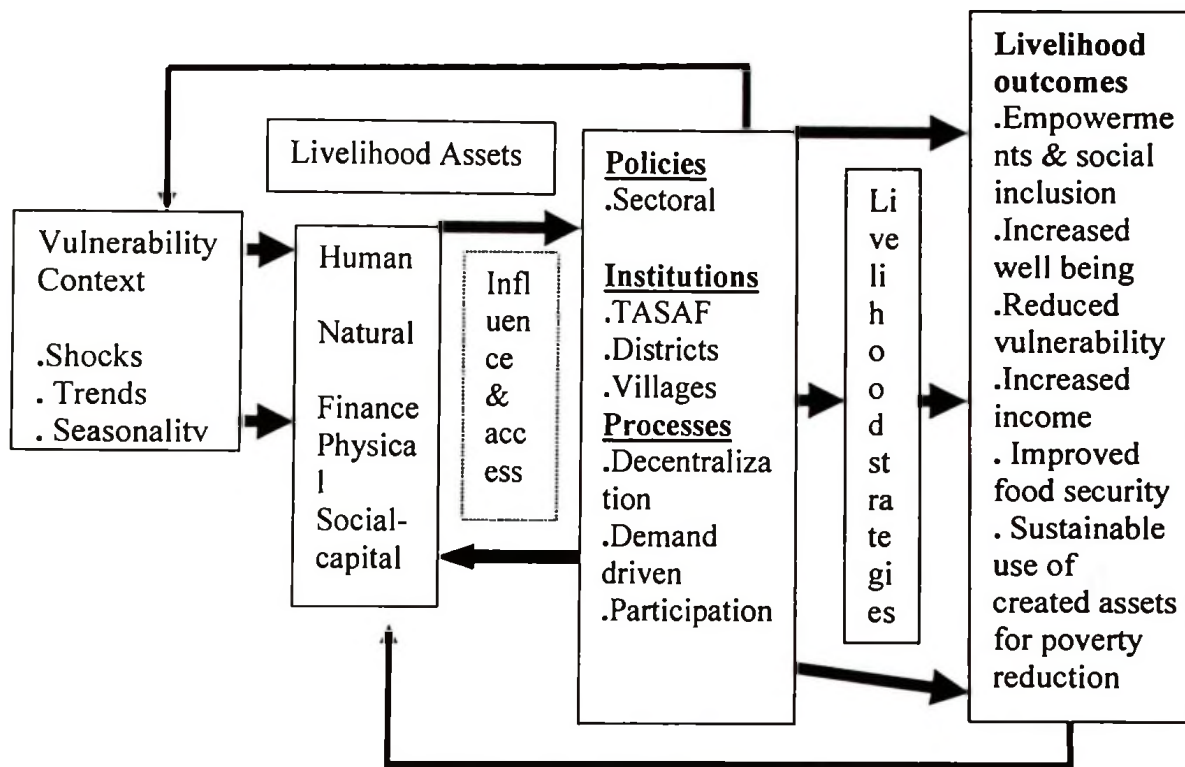


Figure 3: Sustainable Livelihood intervention framework analysis

Source: Modified DFID sustainable livelihood framework (1999)

Moreover, assets accessibility (dairy cattle, poultry, rural roads, dispensary, water, and carpentry works) could be influenced by policies, institutions and processes of intervention (Kollmair and Juli, 2002). Yet, issues of decentralization are of critical relevance. This determines the way individuals operate and interact at community level as incentives to make choices in their prioritized projects under community management committee (2000; Norton and Foster, 2001). These occupy the central position in the intervention framework and directly the feedback to the vulnerability context. Furthermore, livelihood strategies adopted by participants comprise a series of activities prioritized to achieve their livelihood goals (DFID, 2000). As a result, changing asset status affects positively or negatively participants' strategies depending on the nature of asset created for mitigation and coping (Norton and Foster, 2001). Consequently, people

compete for resources, job opportunities (cash-for-work) and markets. These make it difficult for everyone to achieve simultaneous improvements in their livelihoods.

As explained earlier, livelihoods outcome as the achievement of strategies demonstrate what motivate / discourage recipients to act as they do and what are their priorities. This might give an idea of how people are likely to respond to new opportunities and type of performance indicators. To this end, livelihood assets created are of particular interest in this study in order to ascertain if recipients are able to escape from poverty compared to non recipients. However, indicators for assessing sustainable livelihoods, poverty reduction through created assets, well being and capabilities, livelihoods adaptation and vulnerability flexibility, and resource base sustainability are significant in this study (Scoones, 1998).

3.2 Study location

The motivations for the study area selection criterion were certainty of data availability, budget constraint and the abnormal population growth rates. Additionally, an Impact Assessment (IA) supports development interventions in many ways. First, learning about more or less successful approaches to development intervention and poverty reduction. Secondly, projects steering and strategies within their given dynamic and settings so as to maximize effectiveness and sustainability. Finally, improving accountability for investments in development cooperation by trying to ensure that they truly effect changes in the lives of people, particularly the poor (Baur *et al.*, 2001).

Nevertheless, food availability in Tanzania is characterized by domestic production, of which 95% of the country's food requirements are met with local production (Manyong and Gerken, 2009). Moreover, the agricultural sector is dominated by smallholder

farmers who grow 75% of the national food (Manyong and Gerken, 2009). However, Tanzania's main food staples can be differentiated along agro-ecological zones. Accordingly, Southern Highlands (Iringa, Njombe, Mbeya, Rukwa and Ruvuma regions) produce food surpluses (Manyong and Gerken, 2009). Furthermore, agricultural activities provide employment to over 75% of the population, primarily in rural areas (Mngodo, 2008). In addition, 82 % and 76 % of adult men and women respectively are employed in the agricultural sector in rural areas (FAO, 2008). For instance, the percentage of adults employed in agricultural activities in the surpluses food producing zone: Mbeya 55%; Iringa (Njombe) 67%; Rukwa 76% and Ruvuma 77% (HBS, 2000).

Hitherto, the two regions with low percentage of adults engaged in agricultural economic activities in the zone were chosen. Likewise, one district with low population growth rates in each of the selected region was identified for research. In particular, Rungwe has the least annual population growth rates district in Mbeya region, its growth rates in 1978-1988 and 1988-2002 intercensal periods declined from 1.4% to 1.0% respectively (URT, 2003). Conversely, the population of Makete district, contrary to other districts of Iringa (Njombe) region, has experienced an insignificant annual population growth rates. The district intercensal population growth rates for the same periods showed a drastic decrease from 1.2% to 0.2% respectively (URT, 2008). Yet, both districts benefit from TASAF development interventions. Thus far, the study was carried out in Makete and Rungwe districts.

3.2.1 Location of Makete District

Makete district is located at the extreme Western end of Njombe region. The district lies between latitude 08°45' and 09°40' South of Equator and between longitude 33°85' and 34°30' East of Greenwich (URT, 2008). It has an altitude of between 1500 meters to

3000 meters above sea level. Because of the high altitude the district experiences temperate climate with low temperatures as low as freezing point and long rainy seasons. High altitudes between 1500 – 3000 meters above sea level fall under cold zones with temperatures ranging between 2° – 20° centigrade and rainfall vary from 1500 – 2800 mm per annum (URT, 2008). Areas of low altitude such as Usangu plains experience high temperatures of 20° – 30° centigrade with unreliable rainfall ranging between 300 – 800 mm per annum. According to the 2002 population and housing census the district recorded a population of 105 775 with an average household size of 3.7.

3.2.2 Location of Rungwe District

The district is located in the Southern part of Mbeya region. It lies between latitude $8^{\circ}30'$ and $9^{\circ}30'$ South of Equator and longitude 33° and 34° East of Greenwich Meridian. The district is mountainous, rising from an altitude of 770 to 2265 metres above sea level.

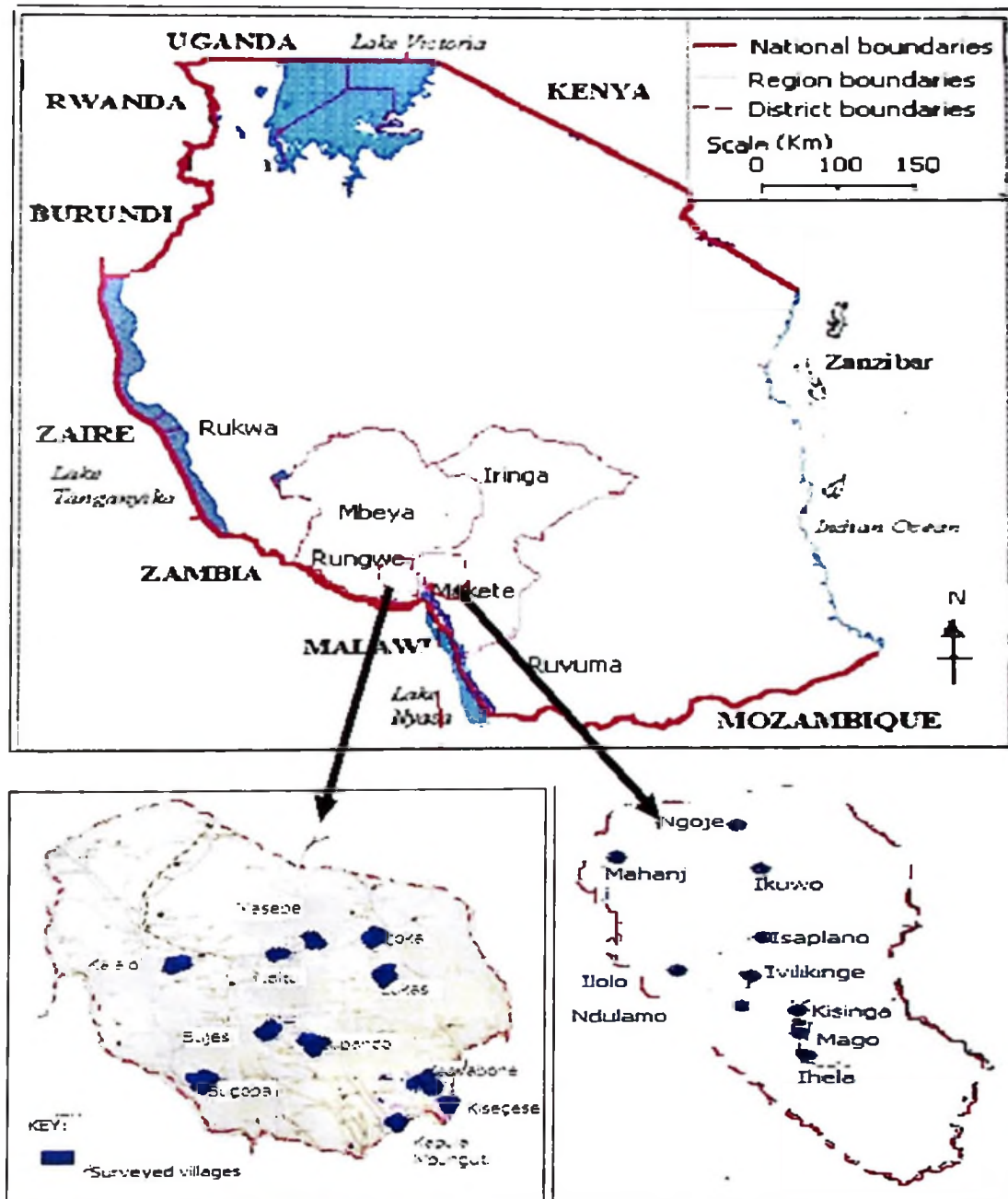


Figure 4: Maps of Makete and Rungwe districts

The average rainfall ranges from 990 mm in the low-land zone to 2700 mm in the highland zone. The temperatures are generally modest and range from 18^o–25^o centigrade all the year around. According to the 2002 National population census, the district had a population of 306 680 with an average household size of 4.1 (Rungwe District Council, 2009).

3.2.3 Study design

The study employed a quasi-experimental approach (Grossman, 2005; Spath, 2004; Hulme, 2000; Baker, 2000; 1999; Power and Riddell, 1998) in which a comparison group that resemble the treatment group were surveyed so as to ascertain the effect of TASAF intervention and cross-sectional data were collected once at a given point of time (Baker, 2003; Stocks and Watson, 2003; Wooldridge, 2001).

3.3 Sample design

3.3.1 Sample size determination

A sample size was calculated prior to data collection. During sample size determination, time and financial resources were taken into account. However, small sample size was born in mind that it could not reproduce the salient characteristics of the accessible population to an acceptable degree (Kothari, 2004; Mugenda and Mugenda, 2003). Sample size determination considered: type of sampling, standard of accuracy and acceptable confidence level and anticipated level of non-responses. Moreover, nature of units, size of questionnaire, availability of trained enumerators and conditions under which the sample was conducted were taken into consideration. The margin of error of 5% and confidence interval of 19 times in 20 was included for an infinite population. This was based on the standard error, the measure of how much the sample mean differs from the population mean. The traditional formula (Power and Riddell, 1998):

$$n = \frac{1.96^2 [p(1-p)]}{SE^2} \dots\dots\dots (1)$$

was applied, where "n" is a sample size calculated, SE is the tolerable standard error (0.05), and p = (0.6) and (1-p) = (0.4) were the proportion of projects participants and non-participants respectively. The figure 1.96 reflects the choice of a 95% confidence interval and the margin error of $\pm 5\%$, 19 times in 20 was tolerable. Thus, the sample

size was obtained: $n = \frac{1.96^2 [0.6 \times 0.4]}{0.05^2} = 368$. Thus far, an optimum sample size of 368 was expected to be involved in the study. However, 4% was the level of non-responses and 96% was achieved.

3.3.2 Sampling procedure

Two groups of respondents were of interest in this study, that is, with and without TASAF projects intervention. Therefore, non random stratified approach was employed to obtain a representative sample: First stage; the zone with regions that enjoy food surpluses in Tanzania, Southern highlands zone was selected. Second stage; two regions with lower percentage of adults engaged in agricultural economic activities from the food surpluses zone, Mbeya (55%) and Iringa (Njombe) (67%) were selected. Third stage; two districts Makete and Rungwe with low intercensal annual population growth rates 1978-1988 and 1988-2002 were identified (see section 3.2). Fourth stage, all Divisions with complete and inaugurated projects were also identified. Fifth stage, all Wards with complete and inaugurated projects were identified and chosen for interview basing on research budget line and accessibility factor. Sixth stage, seven villages with projects and three villages with no projects were non-randomly selected subject to restrictions on a further location from the treated village to avoid spillover effects in Makete district. Similarly, seven villages with and four villages with no project were also randomly selected subject to restrictions in a location in Rungwe district were surveyed respectively. After identification and selection of villages for interview, a sampling frame was prepared.

3.3.3 Sampling frame

Fourteen villages with intervention under TASAF I & II and seven villages without project were covered by the impact assessment. A list of participating beneficiaries within each project village was used as the sampling frame contrary to non participant villages. As a result, 239 and 115 project participants and non-participants respectively were surveyed. The sample comprised of households' (300), key informants (9), focus group discussions (14), village leaders (18), beneficiary group leaders (10), and project coordinators (2). Non responses were attributed to project coordinators and other key informants who were not accessible due to official or administrative issues and end of the financial year disturbances.

3.4 Data collection

3.4.1 Sources of data

Both secondary and primary data were collected in which the first included field project appraisal, beneficiaries' project reports, TASAF I and II quarterly and annual reports. Next, districts socio-economic profiles, Sokoine National Agricultural Library (SNAL), National Bureau of Statistics (NBS) and scholarly electronic information. Moreover, sources of primary data included questionnaires, focus group discussions, key informants, beneficiaries' projects leaders, projects coordinators and participatory observations.

3.4.2 Types of data collected

The study intended to obtain information on the various aspects that could be attributed to participation in the projects including: changes in the level of production; changes in household income; investments made from income generated; and changes in food availability and accessibility and utilization. Other attributes were changes in number of

food shortage months, changes in nutritional status and the composition of the diet, changes in on-farm and off-farm working hours, sensitization on HIV / AIDS and social economic status after intervention.

3.4.3 Procedure of data collection

Four graduate enumerators from Teofilo Kisanji University and Dar es Salaam University with appropriate local *vernacular* skills in both districts were trained before the pilot study. However, the number of enumerators was kept minimum to avoid information inconsistency since reliability of qualitative data depends on the skills, sensitivity and training of the enumerators for data collection (La Rovere and Dixon, 2007; Spath, 2004; Baker, 2000; 1999). Moreover, permission letters for data collection were obtained from the Districts Executive Directors (DEDs) in collaboration with districts TASAF coordinators.

3.4.3.1 Pilot study

The questionnaires were tried out at *Mtaa wa Kanisa* in Bagamoyo Ward, Tukuyu division where 34 (10% of 354) tailoring orphan project beneficiaries were interviewed. The researcher and enumerators had meaningful observations. The enumerators were encouraged to make comments and suggestions concerning instructions, clarity of questions and relevance. Pilot-testing the questionnaire was useful as vague and long questions were revealed and rephrased to enhance the validity of the instruments and unclear directions, insufficient space to write the response, wrong numbering were revealed and corrected. Thus far, comments and suggestions made by the respondents were incorporated to improve the questionnaires.

3.4.3.2 Primary data collection process

A cross-sectional, participatory observation and quasi-experimental data collection design was adopted. Before data collection, interview questionnaires were prepared so as to meet the research objectives. These questionnaires included: first, beneficiaries' interview questionnaires. This contained semi-structured questions in which the enumerator facilitated during data collection. It contained similar questions for both project participants and non-participants; except in a case of project relevance, effectiveness, efficiency, impact and sustainability. Second, focus group discussion consisted of six to eight participants had two pages of a checklist of questions, similar to those beneficiaries' aimed to triangulate, cross-check the validity of information given. Third, village leaders' questionnaires contained semi-structured questionnaires that asked the village socio-economic profile and how village leaders handled those projects in collaboration with beneficiaries under participatory approach. Fourth, the questionnaire for the beneficiaries' group leader gathered information about project success, failures and problems or challenges facing the project while that for project coordinators' gathered information on the introduction of the project, criteria for their selection of target group, project implementation, success and failures or challenges.

Lastly, was the key informant's checklist which gathered data on the overall TASAF projects' implementation weighed against their objectives in relation to the millennium development goals. However, the questions asked were the same or similar to those for other groups so as to validate information obtained by other tools (La Rovere and Dixon, 2007; Adam, 2006; Swan, 2004; Wassenich and Whiteside, 2004; Adams, 2001; Baker, 2000). Questions were sequenced effectively and an average interview time was 45 minutes (one hour maximum).

3.4.4 Data scrutiny and organization

Data scrutiny was done after each fieldwork to identify exceptional variation arising due to inconsistency in data collection which could have been caused by incorrect measurements and data transcription sometimes due to recording error. After the field work, the data was summarized and organized into a form that could be analyzed. This task was performed in two steps. The first step was to translate various questions into variables. The second step was assigning codes to responses from most descriptive questions and each questionnaire was numbered for future cross-checking. All variables with their respective codes or values for ratio and nominal variables were posted (coded) into the computer spreadsheet. Missing values and labelled data were identified and sorted for further analysis and synthesis. The Statistical Package for Social Sciences (SPSS) was used in descriptive statistics while STATA package was employed for quantitative data analysis.

3.5 Methods of data analysis

3.5.1 Explorative analysis

Explorative data analysis present distribution characteristics of data collected. Descriptive, correlation and non parametric analysis were employed to define possible relationships in the most general form and then allowing the bivariate technique to estimate relationships. The respective specifications of different analytical methods were as described in the next sub-sections.

3.5.1.1 Descriptive statistics

This approach focused mainly on frequencies, percentages, maximum, minimum, and cross-tabulation. Frequency analysis was used to check for consistency of data collected and outliers. However, in describing for dispersion the study relied on mean-based

statistics: standard deviation, standard error, coefficient of variation and skewness of data distribution. The proportion between participants and non participants were considered homogeneous or heterogeneous when the observed mean and standard deviation were the same or different, respectively (Florens *et al.*, 2008; Cherry *et al.*, 2005; Blundell *et al.*, 2005; Blundell and Costa Dias, 2002).

3.5.1.2 Non-parametric analysis

3.5.1.2.1 Chi-square

The chi-square (χ^2) was used to test the resulting goodness of fit compared the observed and expected frequencies in each category to see either all categories contain the same proportion of values or that each category contains a user-specified proportion of values. According to Kothari (2004) the numerical tool to summarize these deviations between expected (E) from observed (O) is specified as:

$$\chi^2 = \sum \left(\frac{(O - E)^2}{E} \right) \dots\dots\dots (2)$$

If the test results do not show the strength of association, phi coefficient was used.

3.5.1.2.2 Phi coefficient

As has been noted above that, chi-square is not a strong statistic measure as it does not convey information about the strength of a relationship. This is because the combination of a contingency table and chi-square is most likely to occur when either both variables are nominal (categorical) or interval (ratio). The phi coefficient is preferable to chi-square as a test of association between two dichotomous variables. According to Bryman and Cramer (1997) this statistic measure is similar to the correlation coefficient in that it varies between zero and ± 1 to indicate the strength of relationship, given by the formula:

$$\phi(\phi) = \sqrt{\frac{\text{chi-square}}{\text{number of cases}(N)}} \dots\dots\dots (3)$$

Its interpretation is similar to Pearson's *r*. This is simply the square of phi value multiplied by 100. It provides an indication of how far variation in one variable is accounted for by the other (Bryman and Cramer, 1997). As a result, this study has employed both.

3.5.2 Fundamental evaluation framework model

The modified Roy (1951)-Rubin (1974) model serves as guideline for the empirical analysis of the potential outcome approach. The main elements of this model include both recipients and non recipients and potential outcomes. In this basic model, there are two potential outcomes (Y^1 , Y^0) for each group. Whereby; Y^1 and Y^0 indicate recipients' and non recipient's potential outcomes respectively. The binary assignment indicator, P indicate recipients who received treatment ($P=1$) or otherwise ($P=0$). The treatment effect for each group (i) was then defined as the difference between the potential outcomes (Untied, 2009; Lee, 2008; Blundell, *et al.*, 2005), specified as:

$$\delta_i = Y_i^1 - Y_i^0 \dots\dots\dots (4)$$

Where, δ_i = treatment effect due to TASAF intervention. The fundamental problem of evaluating this treatment effect is caused by the intervention outcome (Untied, 2009; Lee, 2008; Spitz, 2004; Angrist, 2003). Hitherto, Y^1 and Y^0 were observed from recipients and non-recipients, respectively. Thus, the difference is called the counterfactual outcome (Untied, 2009; Lee, 2008; Spitz, 2004; Heckman, 2001).

However, the study modified statistics and econometric models used by Randler and Bogner (2008), Grossman (2005), Layfield and Flagg (2004), Spath (2004), Wassenich and Whiteside (2004), Ochieng (2002), Hulme (2000), Baker (2000; 1999), Power and

In the first stage, the binary probability of participation in the project was analyzed. The dependent variable was a binary variable of participation (p^*), equal to one when participated and zero otherwise. Thus, the basic selection equation is:

$p^* = w_i\gamma + u_i$, given that;

$$P_i = \begin{cases} 1 & \text{if } p_i^* > 0 \\ 0 & \text{if } p_i^* \leq 0 \end{cases} \dots\dots\dots (5)$$

Where; w_i is a vector of factors such as location, household head, age, marital status, education level, household size, type of project and vulnerability were known to influence participation, γ is a vector of coefficients, and u_i is a disturbance error term of unobserved factors that influence participation in the project. At least one independent variable that appears in the selection equation should not appear in the outcome equation. The main purpose for the first stage was to obtain a correction factor, IMR. This ratio was used in the second stage to take account of possible selection bias. The basic outcome equation is specified as:

$$y_i = \begin{cases} \beta x_i + \varepsilon_i & \text{if } p_i^* > 0 \\ 0 & \text{if } p_i^* \leq 0 \end{cases} \dots\dots\dots (6)$$

Where; β is a vector of coefficients, thus $\beta > 0$ presents the likelihood of positive impact (Hoetker, 2007) and x_i is a vector of factors that influence intervention outcome such as participation, location, beneficiary age, gender, marital status, education level, income, proximity to the market, food prices, projects created and target groups. However, problems could arise when estimating β , if u_i and ε_i are correlated. The study assumes that the normal distribution of, and relationship between the error terms in the selection and outcome equation exists (Dubin, 1990). It also assumes a bivariate normal distribution with zero means and correlation(ρ). Thus equations (5) and (6) under

conditional means in the Heckman's model and bivariate normal distribution given earlier generated the IMR as follows:

$$\begin{aligned}
 Y &= E[y_i | y_i \text{isobserved}] &= E[y_i | p^* > 0] \\
 &= E[\beta x_i + \varepsilon_i | w_i \gamma + u_i > 0] \\
 &= \beta x_i + E[\varepsilon_i | w_i \gamma + u_i > 0] \\
 &= \beta x_i + E[\varepsilon_i | u_i > -w_i \gamma] \dots \dots \dots (7)
 \end{aligned}$$

If errors u_i and ε_i are independent, the last term simplifies to $E[\varepsilon_i] = 0$ and OLS of regression of y_i on x_i could give consistency estimates of β . However, any correlation between the two errors means that the truncated mean is no longer βx_i . Thus far, selection bias was taken into account. Likewise, if the second term in the last part $E[\varepsilon_i | u_i > -w_i \gamma]$ exists, then equation (7) becomes:

$$\begin{aligned}
 Y &= E[y_i | y_i \text{isobserved}] &= E[y_i | p^* > 0] \\
 &= E[\beta x_i + \varepsilon_i | w_i \gamma + u_i > 0] \\
 &= \beta x_i + E[\varepsilon_i | w_i \gamma + u_i > 0] \\
 &= \beta x_i + E[\varepsilon_i | u_i > -w_i \gamma] \\
 &= \beta x_i + \rho \sigma_\varepsilon \left[\frac{\phi\left(\frac{-w_i \gamma}{\sigma_u}\right)}{1 - \Phi\left(\frac{-w_i \gamma}{\sigma_u}\right)} \right] \\
 &= \beta x_i + \rho \sigma_\varepsilon \left[\frac{\phi\left(\frac{w_i \gamma}{\sigma_u}\right)}{\Phi\left(\frac{w_i \gamma}{\sigma_u}\right)} \right] \\
 &= \beta x_i + \rho \sigma_\varepsilon \lambda_1(\alpha_u) \dots \dots \dots (8)
 \end{aligned}$$

Accordingly, from equations (5-7) we get:

$$Y = E[y_i | p^* > 0] = \beta x_i + \delta M + U \dots\dots\dots (9)$$

Equation (10) is a bivariate Heckman's selection model.

Whereby: Y = is the outcome of interest; x_i is a vector of variables;

$\delta = \rho\sigma_\epsilon$ is a selection bias;

$M = \lambda_1(\alpha_u)$ is an IMR-selection bias correction factor;

$$\alpha_u = \left(\frac{-w_i\gamma}{\sigma_u} \right); \lambda_1(\alpha_u) = \frac{\phi\left(\frac{-w_i\gamma}{\sigma_u}\right)}{1 - \Phi\left(\frac{-w_i\gamma}{\sigma_u}\right)} = \frac{\phi\left(\frac{w_i\gamma}{\sigma_u}\right)}{\Phi\left(\frac{w_i\gamma}{\sigma_u}\right)}; \text{ and,}$$

U = disturbance error term that captures unobservable variables.

According to the present study, equation (9) can be expressed in words as:

Outcome of interest = the effect of various observed factors + the effects of the projects + the effect of selection bias + random error.

Basing on the word equation, equation (10) can also be expressed to include productive assets (P) created as:

$$Y_i = \beta x_i + \alpha P + \delta M + U \text{ (Defined in equations 6 and 9)} \dots\dots\dots (10)$$

However, α is a measure of project impact. It is worth saying that, if the model is properly specified, the addition of the selection bias correction variable factor removes this potential bias and gives unbiased estimates of the project impact. This model was further modified to suit the second research objective variables under consideration. If the IMR coefficient is statistically significant, it indicates that there is no selection bias and that there is a comparative advantage of participants to earn their livelihoods more than their counterparts, the control group (Doan and Gibson, 2009). Accordingly, the first and third study objectives were estimated by using two-stage least squares (2SLS) estimator presented in the next sub-section.

3.5.4 Two-stage least squares estimation model

The regressor is an endogenous variable when it is correlated with the error term (Wooldridge, 2004). Endogeneity is a problem in cross-sectional data (Cameron and Trivedi, 2005; Stocks and Watson, 2003) as expressed in the structural equation:

$$y = \beta_0 + \beta_1 y_1 + \beta_i x_i + u_i \dots\dots\dots (11)$$

Where; y = outcome of interest (socio-economic status / project sustainability), β_0 = constant term, β_1 = coefficient of endogenous explanatory variable y_1 (participation). This is because vulnerability of a target group (such as able-bodied, elders, HIV infected and widowers) is a choice variable to participate and affects the outcome of interest (Block *et al.*, 2009; Larcker and Rusticus, 2004). β_i = coefficients of exogenous variables x_i (such as location, gender and age), and u_i = error term and $i = 2, 3, \dots, n$ terms. The equation measures the causal relationship.

However, if determinants of the independent variables are not included in the regression equation being estimated, the resulting OLS parameter estimates of regression are inconsistent. Therefore, the endogenous explanatory variable was transformed into Instrumental Variable (IV) to obtain consistent estimators (Stocks and Watson, 2003) and an observable IV z_i (target groups) was introduced after being tested that it had a significant correlation with y_1 (participation) and not u specified as:

$$y_1 = \alpha_0 + \alpha_1 z_1 + \alpha_2 z_2 + \alpha_3 z_3 + \alpha_4 z_4 + \alpha_5 z_5 + v \dots\dots\dots (12)$$

Moreover, valid IV satisfies the following conditions (Stocks and Watson, 2003):

i. Instrumental relevance:

$$Cov(z_i, y_1) \neq 0 \dots\dots\dots (12.1)$$

ii. Instrumental exogeneity:

$$E(\nu) = 0 \dots\dots\dots (12.2)$$

$$\text{Cov}(z_i, \nu) = 0 \dots\dots\dots (12.3)$$

Whereby α_i in (12) are unknown parameters, $i = 1, \dots, 5$ and $\alpha_i z_i$ is uncorrelated with the error term; however, the converse of the second part ' ν ' holds in equation (11).

Using the sample, regressing y_i on z_i fitted values are obtained:

$$\hat{y}_i = \hat{\alpha}_0 + \hat{\alpha}_1 z_i + \hat{\alpha}_2 z_i + \hat{\alpha}_3 z_i + \hat{\alpha}_4 z_i + \hat{\alpha}_5 z_i \dots\dots\dots (13)$$

Thus, $\hat{y}_i$ is used as the IV for y_i . Moreover, z_i (target groups) is causally associated with y_i (participation), yet do not lead to changes in y except through y_i . In the same way, IVs estimator is algebraically identical to 2SLS estimator. The IV estimator requires that the number of instruments equals the number of regressors. As an alternative, a common 2SLS estimator is used (Cameron and Trivedi, 2005).

3.5.4.1 Endogeneity test and two stage least squares procedure

The correlation between the error term and explanatory variables was analyzed to detect the endogeneity problem which might lead to bias and inconsistency of OLS estimators. The test was done by a direct comparison of OLS and 2SLS estimates. However, different and significant estimates were evidences of endogeneity and thus the necessity of applying 2SLS (Cameron and Trivedi, 2005; Wooldridge, 2004). Therefore, two-stage least squares procedures were as follows:

First stage: y was regressed on $\hat{y}_i$ and x_i and fitted values were obtained. Second stage, OLS regression of y on $\hat{y}_i$ and x_i . Therefore, 2SLS was obtained by two consecutive OLS regression.

assets created on socio-economic status between TASAF empowered participants and non empowered participants was analyzed based on equation 14:

$$Y_{SES} = \beta_0 + \beta_1 Partic + \beta_2 Locat + \beta_3 propertime + \beta_4 Femhhd + \beta_5 Benage + \beta_6 Mstatus + \beta_7 Educ + \beta_8 Wompart + \beta_9 Womassnu + \beta_{10} Loansdisb + \beta_{11} Womdecis + \beta_{12} Youthdep + \beta_{13} Iga + \beta_{14} Hivrhserv + \sum_{i=1}^5 \beta_i projects + e \dots\dots\dots(14)$$

Expectation of variables included was: ($\beta_1 > 0$) participation has positive influence on socio-economic status, ($\beta_{3,5,7-13} > 0$) factors have positive influence on socio-economic status and that ($\beta_i > 0$) project(s) had a direct effect (s) on socio economic activities as defined in Table 1. Thus, pseudo R-squared, Ramsey RESET test, and Breusch-Pagan model estimators were used (see section 4.7.2 and Appendix 2.1).

Table 1: Variables specified in the socio-economic status analytical model

Variable	Definition
Partic (Participation =1 or otherwise)	Taking part in the intervention activities or not is a key indicator for respondents to have access to assets created or otherwise. A positive or negative coefficient is expected as participation may enhance or hinder other socio-economic activities.
Location (Makete / Rungwe =1 or otherwise)	The site or position where an intervention is established to serve needy communities is determined by climatic variation. Thus a positive /negative relationship between location and socio-economic status was anticipated
Benage(Beneficiary age) (Years)	The age is an important indicator for recipients to participate in certain created assets. Vulnerability of participants was associated with age, thus a positive or negative relationship with socio-economic status was predicted.
Mstatus (Marital status, married =1 or otherwise)	The indicator of being unmarried, married or formerly married determines the extent of participation. Thus positive/negative relationship between married participants and socio-economic status was expected.
Edulevel (Education level) (Number of years)	Better education is assumed to improve projects created. It was expected that better educated participants perform better in created assets, thus a positive relationship between educated recipients and socioeconomic status was expected.
Femhhd (Female household head =1 or otherwise)	The sex of the household head was also an important factor for determining the effects of participation in TASAF intervention. A positive or negative coefficient was anticipated since their participation is a trade off between family and community commitments.
Youthdep(Youth dependency) 1= increased or otherwise	The tendency of physical or financial support for youth is assumed as an indicator of the costs of the burden to the society. A positive /negative relationship between youth dependency and socio-economic status was expected, implying success or failure of intervention to quench youth wants.
Womassn(Women association number) 1= Increased or otherwise	The number of formal or informal groups of women is an indicator for self- help. This study assumed that, the increased number of self-help groups was positively related to socio economic status of ecipients.
Womdecis (Women decision =1 or otherwise)	Ability to choose or decide in a definite way after considering other possible choices without hesitation or delay was chosen as an indicator for the extent of empowerment through participation, thus a positive coefficient was anticipated.
Wompartic(Women participation=1 or otherwise)	Women taking part in TASAF community activities is assumed to be an indicator for project success. A positive relationship between women participation and socio-economic status was predicted.
Iga (Income generating activities) (1=Yes, 0=No)	Planned activities over a period of time that creates money as a payment for work, goods or services was a key indicator for the effects of TASAF assets on socio-economic status, thus a positive coefficient was expected.
Loansdisb (Loans disbursed) (1=Yes, 0=No)	Amount of money given to a recipient on the condition that it will be paid back is an indicator of financial empowerment through participation in created assets and a positive coefficient was expected.
Hivrherv (HIV and reproductive health services = 1 or otherwise)	Services in all matters related to HIV and reproductive system is an indicator for positive association between TASAF projects and socio-economic activities. However, a positive /negative relationship between health services and socio-economic status was anticipated.
Socio-economic status (1=Improved or otherwise)	Improvement in economic activities and social factors determines the positive effect of TASAF assets, thus a positive outcome was expected.
Projects	Planned activities were expected to have variable effects on participants livelihood
Properatime(Project operation time, years)	Period of involvement in a given activity from inception to the eventual survey time was expected to have a positive relationship with socio-economic status.

Moreover, the hypothesis for food security and health status that stated that there is no difference in food security and health status between the community with and without TASAF intervention were analyzed using the Heckman model procedures and this was

ideal to solve possible non random selection bias by inclusion of the correction factor, the IMR.

Thus far, both selection and outcome equations were obtained (see Tables 44 and 45) as presented by equations 16 and 17 for food security and health status of beneficiaries respectively:

$$\begin{aligned}
 Y_{fs} = & \beta_0 + \beta_1 partic + \beta_2 Locat + \beta_3 Femhhd + \beta_4 Benage + \beta_5 Mstatus + \beta_6 Educ + \\
 & \beta_7 Hhsize + \beta_8 Hhassets + \beta_9 Benincom + \beta_{10} Frinputs + \beta_{11} Mktprice + \\
 & \sum_{i=1}^5 \beta_i projects + \sum_{j=4}^4 \beta_j recipients + \lambda_i(\alpha_u) + e_{fs} \dots\dots\dots(15)
 \end{aligned}$$

Expectation of the variables included: ($\beta_1 > 0$) participation has influence on food security, ($\beta_{2,3,5} > 0$) dummy variables have influence on food security, ($\beta_{4,6-10} > 0$) factors under consideration had positive influence on food security, ($\beta_{11,12} < 0$) factors were inversely related to food security, ($\beta_i > 0$) project(s) enhances recipients' food security positively and that ($\beta_j > 0$) target group(s) benefited through participation as defined in Table 2.

Table 2: Variables specified in food security analytical model

Variable	Definition
Partic (Participation =1, or otherwise)	Taking part in the intervention activities is a key indicator for respondents to have access to assets created. A positive/ negative coefficient is expected as participation may have both effects.
Locat (Location; Makete =1 or otherwise)	The site or position where an intervention is established to serve needy communities is determined by climatic variation. This can be favourable for created assets or not depending on the nature of projects established.
Benage (Beneficiary age) (Years)	The age is an important indicator for recipients to participate in certain created assets. Vulnerability of participants was associated with age, thus negative coefficient was expected on project performance
Mstatus (Marital status, married =1 or otherwise)	The indicator of being unmarried, married or formerly married determines the extent of participation, thus positive/negative coefficient was expected as a trade-off to other binding responsibilities
Benincome(Beneficiary income in Tshs)	Income determines the purchasing power of the participants, as income increases the household purchasing power of farm inputs and food increases, thus a positive relationship between income and food security was expected.
Hhsize (Household size) (Discrete)	This is an indicator used to capture the overall socio-economic status of participants. Participants with lower household size are assumed to be food secure, thus positively correlated with food security.
Educ(Education level, number of years)	Better education is assumed to improve projects created. It was expected that better educated participants perform better in created assets, however better educated participants might not participate
Femhhd (Female household head =1 or otherwise)	The sex of the household head was also an important factor for determining the effects of participation in TASAF intervention, positive or negative coefficient was expected since their participation is a trade - off between family and community commitments.
Hhassets (House hold assets)	Valuable owned items by a family that are useful and contributes in the livelihood success are assumed to be positively correlated with participants' food security as they can liquidate to buy farm inputs.
Frminputs (Farm inputs; 1=TASAF or otherwise)	Efforts needed to achieve agricultural productivity have a positive effect on food security, thus agricultural inputs enhance food security.
Mktprice (Food market price in Tshs)	The price of goods or services determines food accessibility, such as the lower the market food prices increase the purchasing power of the households, thus a negative coefficient was expected.
Mktdist (Market distance in kilometre)	The interval between households and the place where goods or foods of a particular type are regularly held for selling or exchange purpose. Thus a negative relationship between market point and food security was expected.
Recipients	A positive or negative relationship between recipients and food security was expected, as vulnerability was not homogeneous.
Projects	Planned activities were expected to have variable effects on participants livelihood as vulnerability was not absolute identical for all.
Fs (Food security =1 or otherwise)	Ability to acquire the food needed by the household members (Pinstrup – Anderson, 2009).

Furthermore, health status was also analyzed using Heckman procedures explained earlier and specified as:

$$\begin{aligned}
 Y_{hs} = & \beta_0 + \beta_1 Partic + \beta_2 Locat + \beta_3 properatim e + \beta_4 Femhhd + \beta_5 Benage + \beta_6 Mstatus \\
 & + \beta_7 Educ + \beta_8 Benincom + \beta_9 Dhserv + \beta_{10} Fs + \beta_{11} Mktprice + \sum_{i=1}^5 \beta_i projects + \\
 & \sum_{j=1}^4 \beta_j recipients + \lambda_1 (\alpha_*) + e_{hs} \dots\dots\dots (16)
 \end{aligned}$$

Analysis expectation was: ($\beta_1 > 0$) participation has positive influence on health status, ($\beta_{2,4,6} > 0$) dummy variables under consideration have influence on health status, ($\beta_{3,5,7,8,10} > 0$) factors under consideration expected to influence positively health status, ($\beta_{9,11} < 0$) factors had inverse relationship with health status, ($\beta_i > 0$) project(s) created enhanced recipients' food security positively and that ($\beta_j > 0$) target group(s) benefited through participation as identified in Table 3. Therefore, Ramsey RESET and Breusch-Pagan were also used for model estimators for equations 15 and 16 (see sections 4.7.3 and 4.7.4; Appendix 2.2 and 2.3). Also, model specification, skewness in distribution of regressors and data functional forms heteroskedasticity were detected using Breusch-Pagan/Cook-Weisberg test.

Table 3: Variables specified in health status analytical model

Variable	Definition
Partic (Participation =1 or otherwise)	Taking part in the intervention activities is a key indicator for respondents to have access to assets created to meet dietary requirements. A positive outcome was expected as participants earned their livelihoods to sustain their health status.
Location (Rungwe =1 or otherwise)	The site or position where an intervention is established to serve needy communities is determined by vulnerability of recipients. Participants can exploit intervention opportunities depending on the nature of projects established. As a result positive / negative outcome was expected
Benage (Beneficiary age) (Years)	The age is an important indicator for vulnerable people to participate in created assets. Thus, a positive/ negative correlation between age and health status was expected.
Mstatus (Marital status, married =1 or otherwise)	The indicator of being unmarried, married or formerly married determines the extent of health awareness, thus positive/negative coefficient was expected as a result of participation in created assets.
Benincome (Beneficiary income) (Tshs)	Income determines the ability of participants to access health health services through cost sharing. As income increases the household purchasing power of health services increases, thus a positive relationship between income and health status was expected.
Educ (Education level) (Number of years)	Better education of recipients is assumed to be a key indicator of health awareness and accessibility. It was expected that better educated participants had better health which has been achieved through participation
Femhhd (Female household head =1 or otherwise)	The sex of the household head was also an important factor for determining the effects of participation in TASAF intervention. Female household head was compared to male household head as a result a positive or negative relationship between household heads and health status was expected since their participation is a trade-off between family and community commitments
Mktprice (Market food prices) in Tshs	The price of goods or services determines recipients ability to access food to sustain their consumption pattern. The lower the market food prices increase the purchasing power of the households, thus a negative relationship between food prices and health status was expected.
Dhserv (Distance from health service centre in Km) Recipients	Length of the space between household residential area and health service centre is an indicator of recipients' to access health services. Thus, a negative relationship between distance and health status was expected A positive or negative relationship between recipients and health status was expected, as the ability of accessing health services is not homogeneous among vulnerable needy people.
Projects	Scheduled health service activities is assumed to be a solution to communitys' health problems. A positive relationship between created assets and health status of recipients was expected
Properatime(Project operation time, years)	Period of involvement in a given activity from inception to the eventual survey time was expected to have a positive relationship between project duration and health status.
Health status (1= improved or otherwise)	Positive attitude towards life and acceptance of the responsibilities in meeting needs and realizing goals and objectives indicates the success of TASAF projects.

To this end, the hypothesis that productive assets created for poverty reduction through TASAF intervention are not sustainable was also tested by using IV/2SLS models and this model was ideal for analysis similar to the first hypotheses. Thus, the equation was specified, see section 4.8.5 and appendix 2.4:

$$\begin{aligned}
Y_{ps} = & \beta_0 + \beta_1 Partic + \beta_2 Locat + \beta_3 properatime + \beta_4 Femhhd + \beta_5 Benage + \beta_6 Mstatus + \\
& \beta_7 Educ + \beta_8 prrepovred + \beta_9 prgsneed + \beta_{10} primnnd + \beta_{11} pprpimp + \beta_{12} prgendis + \\
& \beta_{13} prouputs + \beta_{14} Dprpart + \sum_{i=1}^5 \beta_i projects + \lambda_i (\alpha_u) + e_{ps} \dots\dots\dots(17)
\end{aligned}$$

Present study expectations were: ($\beta_1 > 0$) participation had influence on project sustainability, ($\beta_{8-14} > 0$) factors under consideration influenced project sustainability and that ($\beta_i > 0$) project(s) created were sustainable as elaborated in Table 4. Based on this model and expectations, pseudo R-squared, link test and Breusch-Pagan estimators were employed. The estimates were then tested for model fit, fitted values and heteroskedasticity as shown in appendix 2.4.

Table 4: Variables specified in project sustainability analytical model

Variable	Definition
Partic (Participation =1 or otherwise)	Taking part in the intervention activities is a key indicator for project sustainability. A positive/ negative relationship between participation and project sustainability was expected .
Location (Makete/Rungwe =1 or otherwise)	The site where created assets are established to serve needy communities predicts project sustainability. Thus, a positive/negative coefficient of the location of assets was expected.
Benage(Beneficiary age) (Years)	The age is an important indicator for sustenance of created assets for the target people. Therefore, a negative relationship between age of participants and project sustainability was expected, implying that active age enhance project performance and sustainability
Mstatus (Marital status, married =1 or otherwise)	The indicator of extent of trade-off between binding family responsibilities and project sustainability. Thus, a positive/negative coefficient was expected.
Edulevel (Education level) (Number of years)	Better education is assumed to be an indicator for project sustainability. It was expected that assets performed by better educated participants have a positive relationship with project sustainability.
Femhhd (Female household head =1 or otherwise)	The sex of the household head is also an important factor for determining sustainability of TASAF intervention. A positive or negative coefficient between the sex of the household head and project sustainability was expected.
Primneed (Project ability to meet immediate needs =1 or otherwise)	Short term delivery of goods and services is a key indicator of project relevance and sustenance, thus positive relationship was expected.
Pbenplmpl(Participation of beneficiaries in project planning and implementation =1 or otherwise)	Participation in project preparation and execution are assumed factors for project relevancy hence a positive relationship with project sustainability was also expected
Prdepart (Project degree of participation =1 or otherwise)	Extent of involvement in projects is a key indicator for project sustainability as participants imprints their ownership. Thus a positive relationship between project participation and sustenance was expected.
Prgendis(Project gender issues = 1or otherwise)	Inclusive of both male and female needs in a scheduled plan of activities is a sign of joint of efforts for project sustenance, thus a positive relationship was expected.
Prgsneed (Project goal related to social needs =1 or otherwise)	Ability of project goal in addressing community wants was expected to have a positive relationship with project sustainability.
Prinputime (Project inputs timing =1 or otherwise)	Time taken to deliver project inputs is an indicator of project efficiency. Thus, a positive relationship between project efficiency and sustainability was expected.
Prouputs(Project outputs achievement =1 or otherwise)	Products or services which result from an intervention indicates project effectiveness, thus a positive relationship with project sustainability was expected
Pprelpovred(Project relevance to poverty reduction =1 or otherwise)	Significance of intervention in relation to income and non-income poverty implies relevancy of TASAF intervention. A positive relationship between project relevance and its sustainability was expected.
Properatime(Project operation time, years)	Period of involvement in a given activity from inception to the eventual survey time was expected to have a positive relationship with socio-economic status.
Projects	Planned activities were expected to have variable effects on participants livelihood

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Socio-economic characteristics of respondents

4.1.1 Age categories for respondents

Table 5 shows that 33.4% and 29.7% of the respondents are aged between 30-44 and 45-59, respectively. This indicates that respondents in these age categories are most likely to participate in production as compared to those aged 15-29 and 75-89 that form 10.3% and 7.3% respectively. When compared between districts, findings show that age composition of respondents is slightly different from each district, but, extremely different for the age groups 15-29 and 30-44. Probably, this is because each district uses different selection criteria for participants to be engaged in various projects.

4.1.2 Sex composition of respondents

Among the respondents interviewed from Makete and Rungwe districts (Table 5) 46.3% are female and 53.7% are male. However, while the proportion of both male and female involved in the project in Makete district is the same that in Rungwe district is 43.4% female and 56.6% male. Equal distribution of the number of male and female respondents in Makete district suggests that both men and women have an equal chance of participation while in Rungwe district men have a greater chance than women. Their difference in participation is most likely attributed by the nature of projects created in both districts.

Table 5: Makete and Rungwe Districts: Socio-economic characteristics of the respondents

Respondents	Districts (n =300)					
	Makete		Rungwe		Total	
	n	%	n	%	n	%
Participants	73	54.5	119	71.7	192	64
Non participants	61	45.5	47	28.3	108	36
Total	134	100.0	166	100.0	300	100.0
Age category						
15-29	6	4.5	25	15.1	31	10.3
30-44	41	30.6	59	35.5	100	33.4
45-59	46	34.3	43	25.9	89	29.7
60-74	30	22.4	28	16.9	58	19.3
75-89	11	8.2	11	6.6	22	7.3
Total	134	100.0	166	100.0	300	100
Sex						
Female	67	50.0	72	43.4	139	46.3
Male	67	50.0	94	56.6	161	53.7
Total	134	100.0	166	100.0	300	100.0
Household heads						
Male	73	54.5	96	57.8	169	56.3
Female	32	23.9	37	22.3	69	23
Single parent	29	21.6	33	19.9	62	20.7
Total	134	100.0	166	100.0	300	100.0
Marital status						
Single	6	4.5	11	6.6	17	5.7
Married	76	56.7	123	74.1	199	66.3
Widow	4	3	12	7.2	16	5.3
Widower	5	3.7	2	1.2	7	2.3
Separated	43	32.1	18	10.8	61	20.3
Total	134	100.0	166	100.0	300	100.0

Furthermore, Table 5 shows that in both districts 56.3% and 20.7% of the households interviewed are male headed and single parents respectively. Survey results on female headed households agree with NBS (2009) findings on household budget survey.

4.1.3 Respondents marital status

Table 5 shows that in both districts 66.3% are married and 2.3% are widowers. However, when the distribution of households' marital status is compared by district,

findings confirm that 56.7% and 74.1% are married and 3.7% and 1.2% are widower in Makete and Rungwe districts, respectively. These suggest that married counterparts are the most recipients of TASAF intervention. Therefore, differences in project participation by the beneficiary groups could be attributed to their vulnerability status.

4.1.4 Level of education attained by respondents

Table 6 shows that 63.3% of respondents completed primary education while 0.3% had acquired post-secondary education. On the other hand. When compared between the districts, 50% and 74.1% completed primary education while 0.0% and 0.6% had achieved post secondary education in Makete and Rungwe districts, respectively. This shows that primary school leaver's constitute a large proportion of beneficiaries in both districts which implies that the majority of participants could be flexible and able to learn new skills needed by the established projects so as to sustain their livelihoods.

4.1.5 Occupation status of respondents

Table 6 shows that 94% of the respondents interviewed depend on agricultural activities to earn their livelihood. Thus, agricultural sector remains the main employer of the majority of respondents in the study area.

Table 6: Makete and Rungwe Districts: Socio-economic characteristics of the respondents

Respondents	Districts (n =300)					
	Makete		Rungwe		Total	
	n	%	n	%	n	%
Educational level						
Non formal education	45	33.6	17	10.2	62	20.7
Adult education	15	11.2	14	8.4	29	9.7
Primary education	67	50.0	123	74.1	190	63.3
Middle school	2	1.5	2	1.2	4	1.3
Secondary education	5	3.7	9	5.4	14	4.7
Post sec. education	0	0.0	1	0.6	1	0.3
Total	134	100.0	166	100.0	300	100.0
Occupation status						
Peasant/Farmer	126	94.0	156	94.0	282	94.0
Other activities	8	6.0	10	6.0	18	6.0
Total	134	100.0	166	100.0	300	100.0
Respondent groups						
Orphan	2	1.5	0	0	2	0.7
Widow/widowers	8	6.0	5	3.0	13	4.3
Elder	44	32.8	41	24.7	85	28.3
Chronic diseased	6	4.5	1	0.6	7	2.3
Able-bodied	35	26.1	116	69.9	151	50.3
HIV/AIDS infected	39	29.1	3	1.8	42	14.0
Total	134	100	166	100.0	300	100.0

However, Table 6 show that 50.3% and 0.7% of respondents are able-bodied and orphans, respectively. Meaning that, able-bodied have a greater opportunity to participate in projects established than orphans. This could be attributed to the type of projects which need active labour force participation such as rural road construction in service poor communities.

4.1.6 Sources of income for the households

Results in Table 7 show that 94% and 30.7% of respondents depend on farm and off-farm employment respectively. This suggests that the majority of respondents entirely depend on farm activities, thus less have off-farm activities as their sources of income. Probably, this is caused by the lack of off-farm employment opportunities in the study

area. A similar cross-country study by Davis *et al.* (2009) found less multiple activities in rural households in African countries compared to other continents. On the other hand, observations made by Barbieri and Mahoney (2009) found that off-farm activities were driven by complex motives which are economic and intrinsic in nature.

Table 7: Makete and Rungwe Districts: Main sources of income for households

Main Source of income	Farming	Off-farm	Both	TASAF		
Response	n (%)	n (%)	n (%)	n (%)		
Yes	282(94)	92(30.7)	46(15.3)	77(25.7)		
No	18(6)	208(69.3)	254(84.7)	223(74.3)		
Total	300(100)	300(100)	300(100)	300(100)		
Average monthly income (Tshs)						
	Beneficiaries			Non beneficiaries		
Source	n	mean	std dev.	n	mean	std dev.
Farm	33	43 212	56 093.54	22	32 590.91	19 087.91
Off-farm	15	47 933.33	47 404.74	8	62 250	101 392.80
Both	8	59 375	66 517.32	10	36 100	20 256.41
TASAF	14	53 946.43	35 600.91			
Beneficiaries Vs non beneficiaries						
Monthly mean income: Farm: $t=0.854$; Off-farm: $-t=0.466$; Casual: $t=1.054$; TASAF: $t=8.475^{**}$						

****Significant at $P<0.01$. Figures in brackets are percentages**

Moreover, survey findings in Table 7 show that the mean monthly income earned between participants and non participants is statistically significant ($P<0.01$). This implies that TASAF participants earn more income than non participants apart from other sources of income in which they have an equal opportunity.

4.1.7 Household asset possession

The possession of durable assets is a good indicator of a rural households' socio-economic status. However, particular assets owned have specific benefits (Table 8). Moreover, the mean possession of spray pump by beneficiaries is significantly higher ($P<0.05$) than that of non beneficiaries (Table 8). This proposes that dairy cattle participants are empowered to fight against tick borne diseases. Survey results are

congruent to that of Panda (2009) who observed that the rural poor microfinance households' participants recorded higher assets value over the non participants.

Table 8: Makete and Rungwe Districts: Assets possession of sampled households

Assets	Beneficiaries(n=192)		Non beneficiaries(n=108)	
	Proportion mean	std dev.	Proportion mean	std dev.
House	0.940	0.233	0.940	0.230
Hand hoe	0.940	0.243	0.960	0.190
Radio	0.530	0.500	0.590	0.494
Television (Tv)	0.020	0.143	0.000	0.000
Mobile phone	0.360	0.483	0.350	0.480
Spray pump	0.110	0.319	0.050	0.211
Ox-plough	0.020	0.124	0.040	0.190
Ox-cart	0.010	0.102	0.000	0.000
Donkey	0.020	0.124	0.140	0.347
Bicycle	0.300	0.458	0.310	0.467
Vehicle	0.020	0.143	0.000	0.000
Tractor	0.010	0.072	0.000	0.000

Beneficiaries Vs non beneficiaries

Assets owned: House:-t=0.062, Hand-hoe:-t=0.940; Radio:-t =1.024; Tv: t=1.511;

Mob.phone:t=0.220; Spray- pump:t=1.990; Ox-plough:-t=1.178; Ox-cart: t=1.063; donkey:-t=4.441**, Bicycle:-t=0.323; Vehicle: t=1.51; and Tractor: t=0.749.*

*Significant at $P<0.05$; **Significant at $P<0.01$

4.1.8 Households land possession

Table 9 shows that an average land possessed and land used for maize production in particular is statistically significant at ($P<0.01$) and ($P<0.05$) levels respectively. This indicates that the mean acres of land possessed and used for maize cultivation among non participants is much more and variable than those of participants. Probably, this could be attributed by variation in geographical location and resource endowment. Therefore, high standard deviation specifies the dispersion of an average land possessed from the mean value in both groups.

Table 9: Makete and Rungwe Districts: Average land possessed and land used for maize cultivation

Aspects	Beneficiaries			Non beneficiaries		
	n	Mean (acres)	std dev.	n	mean (acres)	std dev.
Land owned	144	2.12	1.608	91	3.305	2.496
Land for maize prodn	38	1.55	1.067	29	2.250	1.503

*Land owned: -t = 4.435**;* *Land used for maize production: -t=2.143**

*Significant at $P < 0.05$, **Significant at $P < 0.01$

4.1.9 Staple food and cash crops grown

Survey results in Table 10 show a variety of food and cash crops grown. The analysis shows that mean production of wheat ($P < 0.05$) and round potato ($P < 0.05$) by non-beneficiaries significantly exceed those of beneficiaries. On the other hand, the average production of beans ($P < 0.05$), cassava ($P < 0.05$), yams ($P < 0.01$) and bananas ($P < 0.01$) grown by recipients significantly exceed non recipients. These suggest that, differences in crops grown by respondents could be attributed to ecological variations. Moreover, the findings suggest that beneficiaries have a broad range of crops including drought resistant crops to earn their living. Therefore, crops productivity by beneficiaries is significant and positively associated with TASAF intervention contrary to non beneficiaries. Godfray *et al.* (2010) observed a wide geographic variation in crop productivity across regions that experience similar climates. Probably, yield variation occurs because of technical constraints in use of farm inputs and market opportunities.

Table 10: Makete and Rungwe Districts: Staple food and cash crops grown

Crops grown	Beneficiaries(n=192)		Non beneficiaries(n=108)		Phi
	Mean proportion	std dev.	Mean proportion	std dev.	
Maize	0.990	0.102	0.980	0.135	0.034
Wheat	0.370	0.484	0.510	0.502	-0.136
Beans	0.940	1.433	0.660	0.477	0.214
Cassava	0.430	0.496	0.310	0.463	0.120
Yams	0.470	0.501	0.260	0.44	0.211
Round potato	0.400	0.490	0.530	0.502	-0.127
Bananas	0.640	0.483	0.380	0.488	0.246
Maize yield/100kg	7.270	11.798	0.620	7.546	

Beneficiaries Vs non beneficiaries

food crops/cash crops grown: Maize: t=0.586; wheat: -t = 2.363; Beans: t=2.006*;
cassava: t = 2.086*; Yams: t= 3.720**; R/potato:-t=2.219*; banana: t=4.390**; and
Maize yield/100kgs: t = 0.358.*

*Significant at $P < 0.05$, **significant at $P < 0.01$

4.1.10 Households daily mean time allocation during farming and off-season

Table 11 shows that the daily mean time allocation by both beneficiaries and non-beneficiaries is relatively similar. This indicates that both participants and non participants have a comparable pattern in both seasons contrary to the expectation. This is because other productive assets created need to devote much time all the year around, thus there could be a difference in time allocations such as dairy cattle in particular. In contrary, findings obtained by Ito and Kurosaki (2007) in developing countries found that off-farm labour supply pattern increased two-to-three more during the off-season compared to farming season.

Table 11: Makete and Rungwe Districts: Households daily time allocation (hours) during farming and off-season

Seasons	Beneficiaries(n=192)		Non-beneficiaries(n=108)	
	mean (hrs)	Std dev.	mean(hrs)	std dev.
Farming season				
Farm work	5.28	4.684	5.25	2.488
Off farm	1.66	2.553	1.52	1.993
House activities	2.30	1.974	2.06	2.199
Leisure	1.84	1.599	1.93	1.551
Off- season	n		n	
Farm work	46	3.74	20	3.53
Off-farm work	18	4.44	18	3.56
House activities	38	3.55	22	3.36
Leisure	37	3.38	24	3.50

Beneficiaries Vs non beneficiaries
Farming season: Farm work: $t=0.064$; off-farm work: $t=0.484$; House activities: $t=0.997$; and leisure/recreation: $-t=0.457$.
Off-season: Farm work: $t=0.628$; off-farm work: $t=1.015$; House activities: $t=0.447$; and leisure/recreation: $-t=0.259$.

4.1.11 Effect of TASAF support on household farm input

Table 12 shows that TASAF support on household has a significant ($P<0.01$) effect on farm inputs. Meaning that, TASAF intervention has a positive association with participants' farm inputs. This suggests that beneficiaries use their earned income from PWP and other vulnerable projects to buy farm inputs.

Table 12: Makete and Rungwe Districts: Households source of farm inputs

Source	Beneficiaries (n=192)		Non beneficiaries(n=108)		Phi
	Mean proportion	std dev.	Mean proportion	std dev.	
TASAF assistance	0.180	0.388	0.000	0.000	0.240
Government subsidies	0.450	0.499	0.470	0.502	-0.023
Private traders	0.460	0.500	0.470	0.502	-0.013

Source of farm inputs:
TASAF assistance: $t = 4.266^{**}$; **Government subsidies:** $-t=0.404$;
Private traders: $-t=0.231$.

****Significant at $P < 0.01$**

4.2 Description of TASAF projects intervention

4.2.1 Types of projects supported by TASAF

A total of seven projects were evaluated from both districts (Table 13a). Results show that of all the projects supported by TASAF, dairy cattle projects formed 36.5% followed by environmental conservation and PWPs. This could be attributed to the nature of participants and their projects' priorities. This suggests that recipients with dietary requirements in order to meet their health status constitute a large proportion of participants followed by food insecure who are able-bodied individuals.

Table 13a: Makete and Rungwe Districts: TASAF projects distribution (n=192)

Projects distribution	Makete		Rungwe		Total	
	n	%	n	%	n	%
PWPs-Local roads	12	16.4	12	10.1	24	12.5
Dispensary (SP)	0	0	9	7.6	9.0	4.7
Dairy cattle(VG)	27	37	43	36.1	70	36.5
Env cons(FI &VG)	16	21.9	44	37	60	31.2
Poultry (VG)	14	19.2	0.0	0.0	14	7.3
Water (CDI)	0	0.0	11	9.2	11	5.7
Carpentry(VG)	4	5.5	0.0	0.0	4.0	2.1
Total	73	100	119	100	192	100

4.2.2 TASAF projects target groups distribution

Table 13b shows that among 192 participants, 50% were able-bodied while 0.5% were orphans. The reason for the able-bodied group is that physical infrastructure assets created in rural areas require active labour force participation to sustain their livelihoods through cash-for-work programs. Hitherto, carpentry projects aims to create long-term employment for the orphan group.

Table 13b: Makete and Rungwe Districts: TASAF projects and beneficiaries distribution

Vulnerable groups in both districts (n=192)							
Projects	Orphan	Widow	Elder	C/dis.	Able-bod.	HIV/inf.	Total
PWPs (FI)	-	-	-	-	24	-	24
Disp. (SP)	-	-	-	-	9	-	9
Dairy cat.	-	11	23	7	18	11	70
Env.cons	-	0	29	-	31	-	60
Poultry	-	2	6	-	1	5	14
Water (CDI)	-	-	1	-	10	-	11
Carpentry	1	-	-	-	3	-	4
Total (%)	1(0.5)	13(6.8)	59(30.7)	7(3.6)	96(50)	16(8.3)	192(100)

C/dis= chronic diseased, Able-bod = Able-bodied, HIV/inf = HIV infected

4.2.3 TASAF projects and marital status of participants

Table 14a shows that 64.6% of participants are married, 22.4% are separated while 2.1% are widowers. This suggests that the majority of married recipients are able-bodied and they have an opportunity to participate. Probably, this difference could be attributed to the selection criteria basing on the vulnerability of the target group(s). Abubakar *et al.* (2012) had similar observations that majority of participants in rural development activities were married. This similarity could be attributed to the nature of projects and participants.

Table 14a: Makete and Rungwe Districts: Projects distribution based on marital status and gender of beneficiaries

Beneficiaries marital status (n=192)						
Project	Single	Married	Separated	Widow	Widower	Total
Local roads (FI)	0	21	2	0	1	24
Dispensary (SP)	2	7	0	0	0	9
Dairy cattle(VG)	2	40	21	6	1	70
Env cons(FI &VG)	3	41	13	2	1	60
Poultry (VG)	0	5	7	1	1	14
Water (CDI)	3	8	0	0	0	11
Carpentry(VG)	2	2	0	0	0	4
Total, n (%)	12(6.2)	124(64.6)	43(22.4)	9(4.7)	4(2.1)	192(100)

Figures in brackets are percentages

4.2.4 TASAF projects and gender status of participants

Table 14b shows that 44.4% and 27.8% of male, 29.4% and 34.3% of female participants are beneficiaries of dairy cattle and environmental conservation projects, respectively. However, about 2% of both women and men recipients are involved in carpentry projects. This suggests that both male and female have likelihood in project participation by intervention. However, the present study findings contradict with Tanga and Maliehe (2011) who observed that handicraft project was dominated by disadvantaged group of women. Therefore, the difference in project participation by gender could be attributed to their differences in felt and expressed needs.

Table 14b: Makete and Rungwe Districts: Projects distribution based on gender of participants (n=192)

Projects	Female		Male		Total	
	n	%	n	%	n	%
PWPs-Local roads(FI)	9	8.8	15	16.7	24	12.5
Dispensary (SP)	9	8.8	0	0.0	9	6.5
Dairy cattle(VG)	30	29.4	40	44.4	70	36.5
Env cons(FI &VG)	35	34.3	25	27.8	60	31.3
Poultry (VG)	10	9.8	4	4.4	14	7.3
Water (CDI)	7	6.9	4	4.4	11	5.7
Carpentry(VG)	2	2.0	2	2.2	4	2.1
Total	102	100	90	100	192	100

4.3 Attributes considered by households when planning for agriculture

activities

The present study wanted to know attributes the respondents consider when planning for agricultural activities and possible reasons for their choice. Table 15 shows that the average plan to use manure on their farms by recipients significantly ($P<0.05$) exceed non-recipients. The differences in the use of manure between the two groups can be attributed to the fact that recipients have a prior plan to use organic manure differently from non recipients. Therefore, the variation in use of manure by recipients is accounted for 1.96% to intervention. Similar observations were obtained by Zerfu and Larson

(2011) that raising fertilizer prices and low farm-gate prices for farm produce reduces the use of fertilizers by farmers.

Table 15 also shows that on average prior plan for market price of farm produce, availability of input subsidies, weeds and weeding problems are insignificantly different from zero. This suggests that all respondents are equally likely to have no prior farm plan on these attributes. However, Mittal *et al.* (2010) reported that farmers had a prior search for market information on farm inputs and outputs before decision making.

Table 15: Makete and Rungwe Districts: Attributes considered by households when planning for agricultural activities

Attributes	Beneficiaries (n=192)		Non beneficiaries (n=108)		Phi
	mean	std dev.	mean	std dev.	
Availability of subsidies	0.33	0.471	0.31	0.467	0.014
Availability of manures	0.71	0.454	0.57	0.497	0.14
Market price of produce	0.44	0.497	0.43	0.497	-0.016
Weeding problems	0.87	0.337	0.82	0.383	0.062

Planning for agricultural activities:

Availability of subsidies: $t = 0.236$; availability of manure: $t = 2.439^$; market price of produce: $t = 0.280$; and, weeding: $t = 1.073$.*

*Significant at $P < 0.05$

4.3.1 Households average food production pattern

Households' daily mean time allocation, source of farm inputs, and plan for agricultural activities are important factors for food production. The present study wanted to know whether there is an increase of food production in the past five years since intervention. Study analysis shows that the mean food productions of 0.44 and 0.43 over the past five years were equally likely between participants and non participants respectively. This suggests that both participants and non participants have a similar food production trend.

4.3.2 Households marketing orientation of farm products

Both recipients and non recipients were asked to indicate their marketing channels for their farm produce. Table 16 shows that the marketing of wheat ($p < 0.01$), round potatoes ($p < 0.01$) and bananas ($p < 0.05$) are statistically significant and that there is a difference between participants and non participants on the level of selling the crops, however non participants sell 45.4% of round potatoes and 40.7% of wheat higher than the participants who sell 47.9% of bananas more than non recipients.

Table 16: Makete and Rungwe Districts: Marketing channels for households

Mkt channels	TASAF Beneficiaries (n=192)				Non beneficiaries(n=108)			
	M/men	P/traders	Market	Total	M/men	P/traders	Market	Total
Crops	n %	n %	n %	n %	n %	n %	n %	n %
Maize	52(17.6)	28(9.5)	44(14.9)	124(64.6)	20(6.8)	16(5.4)	42(14.2)	78(72.2)
Wheat	5(3.8)	8(6.1)	14(10.6)	27(14.1)	4(3.0)	8(6.1)	32(24.2)	40(40.7)
Bananas	69(51.9)	17(12.8)	6(4.5)	92(47.9)	16(12)	0(0)	1(0.8)	17(15.7)
R/potatoe	6(4.5)	10(7.5)	10(7.5)	26(13.5)	4(3)	8(6)	37(27.6)	49(45.4)
Rice	5(18.5)	0(0.0)	8(29.6)	13(6.8)	3(11.1)	1(3.7)	1(3.7)	5(4.6)
Total	137(71.3)	63(32.8)	82(42.7)	282(146.9)	47(43.5)	33(30.5)	113(104.6)	189(175)

Beneficiaries Vs non beneficiaries:

Maize: $\chi^2 = 9.310$, $df = 4$; *wheat:* $\chi^2 = 18.454$, $df = 4$; $p < 0.01$; *banana:* $\chi^2 = 10.389$, $df = 4$, $p < 0.05$;

R/pataato: $\chi^2 = 36.111$, $df = 3$, $p < 0.01$; *and Rice:* $\chi^2 = 7.564$, $df = 4$.

Note: Mkt = Market; M/men= Middle men; P/traders = Private traders. Figures in brackets are percentages

The present study shows that about 52% of beneficiaries who grow bananas sell it to the middlemen. Probably, this is because the crop is perishable contrary to other storable grain foods. The present findings are similar to the observations by Muto (2008). Of all the market channels surveyed, results show that 104.6%, 47% of non beneficiaries and 71.3%, 42.7% of beneficiaries sell their various crops direct to the market or through the middle-men respectively (Table 16). These findings are consistent with findings obtained by Taylor *et al.* (2008) who observed that different market channels matter for different poor people in rural areas to maximize their welfare and the path out of poverty trap.

4.3.3 Average market price of crops

Table 17 shows that the mean prices are equally likely for those crops grown by beneficiaries and non beneficiaries. This suggests that the market prices do not distinguish between crops grown by beneficiaries or non beneficiaries. Thus, beneficiaries could have an advantage over non beneficiaries through increased production.

Table 17: Makete and Rungwe Districts: Average market price of crops (in Tshs).

Crops /100Kg	Beneficiaries (n=192)			Non beneficiaries (n=108)		
	n	Mean prices(Tshs)	Std dev.	n	Mean Prices(Tshs)	Std dev.
Maize	105	26 047.62	10 030.13	78	26 116.70	8944.7
Wheat	27	51 444.44	13 027.60	43	46 186.05	12 226.54
Bananas	69	2949.3	27 65.52	16	2500	547.72
Round potato	26	17 980.80	5223.9	49	20 408.20	19 333.60
Rice	9	43 333.33	26 457.51	5	33 600	3286.33

Beneficiaries Vs Non beneficiaries:

Mean price of maize: -t= 0.048; Mean price of wheat: t = 1.708; Mean price of banana: t =0.644; Mean price of R/potato: -t = 0.626 and mean price of rice: t = 0.805.

4.3.4 Households average distance from marketing point

Respondents were asked to indicate a distance from marketing point and means of transport they use. Table 18 shows that the mean distance from marketing point is significantly different ($P < 0.01$) between participants and non participants. This suggests that beneficiaries operate in areas which are near to the market centres than non beneficiaries. This could be attributed to TASAF projects establishment.

Table 18: Makete and Rungwe Districts: Households average distance from marketing point

Distance	Beneficiaries			Non beneficiaries			Phi
	n	mean(Km)	std dev.	n	mean(Km)	std dev.	
	169	7.509	6.925	104	13.615	9.058	-0.343

*Beneficiaries Vs Non beneficiaries: -t=6.278**.*

**significant at $P < 0.01$

However, findings in Table 19 confirm that the means of transport to the marketing points is statistically significant ($p < 0.01$) and that among other means of transport, 66.1% of participants access market services on foot compared to 47.2% of non participants. Therefore, easy access to the marketing point by beneficiaries is accounted for 11.76% to TASAF intervention. In a similar way, Pinstrup-Andersen (2009) observed that market accessibility address the rural household welfare of food security.

Table 19: Makete and Rungwe Districts: Households means of transport

Means of transport	Beneficiaries(n=192)		Non beneficiaries(n=108)		Total	
	n	%	n	%	n	%
Car	9	4.7	11	10.2	20	6.7
Bicycle	26	13.5	14	13.0	40	13.3
Donkey	2	1.0	4	3.7	6	2.0
Foot	127	66.1	51	47.2	178	59.3
Either of the above	9	4.7	17	15.7	26	8.7
None	16	8.3	11	10.2	27	9.0
Total	189	98.4	108	100	297	99

Beneficiaries Vs non beneficiaries

Means of transport: $\chi^2 = 35.964$, df = 10, P < 0.01, Phi= 0.348

4.3.5 Livestock production

Table 20 shows that the mean ownership of livestock by beneficiaries exceeds non beneficiaries. This suggests that both respondents are equally likely to own livestock. About 51.1% of the beneficiaries said they got the animals through their families while 15.6% reported to get the animals through TASAF support. With regard to animals ownership it is observed that most of participants had more livestock than non participants.

Table 20: Makete and Rungwe Districts: Source of animals owned and assistance offered to others in case of food shortage

	Beneficiaries(n=192)		Non beneficiaries(n=108)	
	mean	std dev.	mean	std dev.
Animals ownership	0.82	0.383	0.78	0.418
Source of animals	n	%	n	%
TASAF relief	30	15.6	0	0
Family	98	51.1	82	75.9
Both	26	13.5	0	0.0
Others	4	2.1	0	0.0
Total	158	82.3	82	75.9
Use of animals during food shortage				
Response				
Yes	108	56.2	67	62.1
No	81	42.2	40	37.0
Total	189	98.4	107	99.1
Beneficiaries Vs non beneficiaries: Animals ownership: $t=0.949$; Source of animals: $\chi^2 = 0.903$, $df=1$; food shortage $\chi^2 = 0.847$, $df=1$				

With regard to ability to assist others in times of food shortages 62.1% and 56.2% of non participants and participants respectively who possess livestock reported to be helpful in case of food scarcity. This result agrees with Godfray *et al.* (2010) that livestock are used for local supply of manure and dietary intake as well as a vital source of income for many poorer communities.

4.3.6 Households average annual food insecurity pattern

Table 21 shows that food insecurity pattern reaches its peak in January and tends to diminish as far as in March and increases again from September to December. Of all these months reported, September ($P<0.01$) and December ($P<0.05$) are statistically significant in food insecurity. Meaning that participants face more food shortage than non participants and this might be associated with low production hence poor precautionary food saving.

Table 21: Makete and Rungwe Districts: Households' average food insecurity trend

Months	Beneficiaries (n=192)		Non beneficiaries (n=108)	
	Mean proportion	std dev.	Mean proportion	std dev.
January	0.690	0.463	0.600	0.492
February	0.590	0.492	0.590	0.494
March	0.250	0.434	0.340	0.477
September	0.170	0.378	0.060	0.247
October	0.230	0.421	0.170	0.374
November	0.420	0.495	0.360	0.483
December	0.570	0.496	0.440	0.498

Beneficiaries Vs non-beneficiaries food shortage

*January: t=1.596; February: t=0.02; March: -t=1.711; September: t=2.640**; October: t=1.283; November: t=1.030; and December: t=2.305**

* Significant at $P < 0.05$, **Significant at $P < 0.01$ (2-tailed significant levels)

Similarly, observations made by Gedamu (2006) found that food-for-work intervention negatively affected time and resource allocations for participants' own production. Consequently, the following coping strategies were reported to be adopted by households as food security measures: work-for-food to their neighbours who are food secure, tea leaves picking, head-loading of timbers on daily basis, making local brewed alcohol, chopping firewood, making woodcharcoal for exchange of food and migration to other areas where they can work and earn their livelihood.

4.3.7 Main source of households' food products in a year

Table 22 shows that there are insignificant sources of food among respondents in the course of the year. This reveals that beneficiaries like non beneficiaries equally depend on other sources of food away from farm to complement their dietary requirements.

Table 22: Makete and Rungwe Districts: Households' main source of food items in the year

Source of food	Beneficiaries(n=192)		Non beneficiaries(108)		Total	
	n	%	n	%	N	%
Farm	18	9.4	8	7.4	26	8.7
Farm and shops	4	2.1	1	0.9	5	1.7
Farm and market	134	69.8	67	62.0	201	67
Farm and relief	1	0.5	4	3.7	5	1.7
Farm and others	0	0	2	1.9	2	0.7
Farm, shops , Market	28	14.6	24	22.2	52	17.3
Farm, market and relief	5	2.6	2	1.9	7	2.3
Total	190	99.0	108	100	298	99.3

$\chi^2 = 12.861, df = 8. \text{Phi} = 0.207.$

Of all the sources of food surveyed, 70% and 62% of recipients and non recipients respectively depend on farm and market as their main source of food items. This suggests that farm and market dependency indicates food surpluses or food insecurity of the respondents. Similarly, Pinstrup-Andersen (2009) observed that availability of food was linked to the production capacity of the households for consumption and market.

4.3.8 Number of meals and average meals per day

Table 23 shows that there is equally likely in number and average meals consumed per day between beneficiaries and non beneficiaries. This indicates that both have a likelihood consumption pattern; however 60% and 57.4% of recipients and non recipients have two meals per day, respectively while only 2.6% of participants have one meal per day.

Table 23: Makete and Rungwe Districts: Households number and average meals/day

	Beneficiaries (n=192)		Non beneficiaries(n=108)		Total	
Meals /day	n	%	n	%	n	%
Three times	72	37.5	46	42.6	118	39.3
Two times	115	59.9	62	57.4	177	59
One times	5	2.6	0	0	5	1.7
Total	192	100	108	100	300	100
Average meals/day	mean	std dev.	mean	std dev.		
	1.65	0.530	1.57	0.497		
<i>Beneficiaries Vs non beneficiaries</i>						
<i>Meals /day $\chi^2 = 3.341$, df=2; Average meals /day: $t = 1.235$</i>						

4.3.9 Varieties of food consumed by a household per week

In addition to the number and average meals consumed per day, respondents were asked to indicate the frequency of food cooked or consumed in a household per week from a given food items. As a result, Table 24 shows that beneficiaries significantly consume (frequently) different varieties of food items: banana ($P < 0.01$); beans ($P < 0.01$); milk ($P < 0.05$) and fruits ($P < 0.01$) than non beneficiaries per week. This shows that the recipients are endowed with a variety of and availability of food items. Thus, recipients' choices are made between varieties of foods consumed and prevalent health issues to meet their dietary requirements as observed by (Babatunde and Adejobi, 2010; Smith, 2010). Therefore, this accounts for TASAF intervention to mitigate health problems of participants.

Table 24: Makete and Rungwe Districts: Varieties of food intake by household per week

Food items	Beneficiaries (n=192)		Non beneficiaries (n=108)	
	mean	std dev.	mean	std dev.
Thick porridge	6.020	1.933	6.060	1.718
Green vegetables	5.790	1.979	5.790	2.087
Bananas	3.150	2.894	1.710	2.348
Beans	3.620	2.576	2.800	2.468
Meat	0.910	1.059	1.170	1.329
Milk	1.990	2.623	1.230	2.147
Fruits	3.900	2.918	2.490	2.702
Rice	1.040	0.959	1.060	1.101
Sweet /round potato	2.380	2.425	3.460	2.850
Mixture maize/beans	1.090	1.093	1.810	2.155

Beneficiaries Vs Non beneficiaries

*Thick porridge: -t =0.155; green vegetables: t=0.019; banana: t=4.394**; beans: t =2.715**;
meat: -t =1.861; milk: t=2.559*; fruits: t=4.110**; rice: -t=0.114; sweet/round potato: -t=
3.482**; and ,mixture of maize and beans: -t=3.793***

*Significant at P < 0.05, **Significant at P < 0.01

On the contrary, non beneficiaries significantly consume sweet / round potato ($P < 0.01$) and mixture of maize and beans ($P < 0.01$) more than beneficiaries. This shows that non participants depend mostly on cheap foods which are rich in carbohydrate and protein. A similar study by Sarries and Rapsomanikis (2009) observed that a low income household was more likely to shift consumption from normal towards inferior and less expensive foods.

Moreover, all respondents are most likely to consume thick porridge and green vegetables at most six times and less meat intake per week. This suggests that both beneficiaries and non beneficiaries equally maximize dietary and calorific intake by eating more green vegetables and thick porridge respectively. Results conform to Godfray *et al.* (2010) and Wen *et al.* (2010) who support that a well-balanced diet rich in grains and vegetable products are healthful than meat and dairy products.

Although, meat is regarded as superior food item, respondents reported it to be expensive thus they can not afford to buy it even once per month. They normally eat meat once a

year particularly during the Christmas or New Year celebration day. Inevitably they eat meat from wild animals or in case an animal has died unexpectedly as narrated below.

“....an elder woman (80 years old in 2010) said, I used to eat meat of wild animals weekly when my husband and my sons were hunting. Unfortunately, my husband died and my sons also died because of HIV/AIDS, now I am alone with no body to take care of me” (Translated from Kinga Vernacular language).

Hitherto, Godfray *et al.* (2010) reported that meat represents the most concentrated source of vitamins and minerals important for young children. However, they discourage frequent intake of meat and other dairy products to avoid obesity problems. Therefore, respondents in the study area are involuntarily safe from obesity health problems. Nonetheless, consumption variations within respondents indicate differences in households' purchasing power. Thus, dietary intake basing on food varieties reveals that beneficiaries are healthier than non beneficiaries. Inevitably, an improvement of recipients' health status could be attributed to TASAF intervention as revealed by the estimation model.

4.4 Analysis of health status

4.4.1 Availability and accessibility of health services

Table 25 shows that health services support from TASAF ($P < 0.05$) and the problem of accessing it ($P < 0.01$) is statistically significant. This suggests that only 4.7% of recipients' access health services supported through intervention, even though 54.2% of recipients reported that distance is not a problem in accessing health services contrary to 65.7% of non recipients. Thus, 66.1% and 63% of participants and non participants respectively access health services within two to 10 kilometres contrary to five

kilometres of the government goal within a household reach to health service units (URT, 2005a; 2010). Accordingly, this confirms a negative weak association with TASAF intervention.

Table 25: Makete and Rungwe Districts: Health services availability and distance effect on its accessibility

Beneficiaries(n=192)			Non beneficiaries(n=108)	
Does TASAF support health services?				
Response	n	%	n	%
Yes	9	4.7	0	0.0
No	183	95.3	108	100
Proble of a distance to access health service				
Yes	88	45.8	71	65.7
No	104	54.2	37	19.3
Distance(Km)				
Less than 2Km	63	32.8	36	33.3
2Km to 10Km	127	66.1	68	63.0
More than 10Km	2	1.0	4	3.7

Beneficiaries Vs non beneficiaries

Health services: $\chi^2 = 5.219$, $df=1$, $P<0.05$, $\Phi=0.132$; Accessibility problem:

$\chi^2 = 10.997$, $df=1$, $P<0.01$, $-\Phi=0.191$

*Significant at $P<0.05$, **Significant at $P<0.01$

4.4.2 Incidence of diseases and water accessibility

Based on accessibility of health services, respondents were asked to indicate diseases that frequently threaten the under five years' children then again indicate the status of clean and safe water availability. Table 26 shows that the health status of the under five years of age children is statistically significant ($P<0.01$). This suggests that 51.6% of participants' under five years children suffer more from malaria incidences compared to 38% of non participants. Probably, more parents mis-use the treated mosquito nets provided to fight against malaria because of low health knowledge. However, treated mosquito nets are not a panacea of malaria because parasites are not transmitted only during the sleeping time.

Table 26: Makete and Rungwe Districts: Incidences of diseases for under five years' of age and water accessibility

Disease	Beneficiaries (n=192)		Non beneficiaries(n=108)	
	n	%	n	%
Malaria	99	51.6	41	38.0
Measles	4	2.1	9	8.3
Diarrhea	60	31.3	42	38.9
Pneumonia	6	3.1	6	5.6
Kwashiorkor	4	2.1	7	6.5
None	19	9.9	3	2.8
Total	192	100.0	108	100.0
Access to clean and safe water				
Sufficient	95	49.5	56	51.9
Not sufficient	40	20.8	10	9.3
Not available	57	29.7	42	38.9
Total	192	100.0	108	100.0

Beneficiaries Vs non beneficiaries

Incidences of diseases: $\chi^2 = 19.599$, $df = 5$, $P < 0.01$; Access to clean and safe water:

$\chi^2 = 7.406$, $df = 2$, $P < 0.05$, $\Phi = 0.157$

*Significant at $P < 0.05$, **Significant at $P < 0.01$

This argument explained earlier contradicts with following view:

...A woman (35 years old in 2010) said "Our income is low, we have no beds where we can hang treated nets for our children... others sell mosquito nets at a low price to get money so that they can buy a packet of salt... the problem is income" she narrated.

On the other hand, Table 26 reveals that accessibility to clean and safe water is significantly different ($P < 0.05$) between recipients and non recipients. This indicates that 52% of non participants have sufficient access to clean and safe water compared to 49.5% of participants. Hitherto, 29.7% and 38.9% of both beneficiaries and non beneficiaries respectively have no access at all, thus they are susceptible to infectious diseases. This is evidenced by 31.3% and 38.9% of participants and non participants under five year's children respectively who suffer from diarrhea. Thus infectious diseases constitute a major burden to the communities; although they can be prevented by intervention through provision of safe and clean water as observed by (Ahs *et al.*,

2010). Moreover, Ahs *et al.* (2010) argue that children's dying from diarrhoea disorders is a sign of an inequality in distribution of community resources.

4.4.3 HIV/AIDS awareness, source of information and control

Table 27 shows that HIV/ AIDS awareness, source of information and control methods are equally likely among those respondents. This suggests that almost 99% of recipients and 97.2% of non recipients respectively have health knowledge on the disease. Probably, this is because of symmetrical information flow through campaigns and mass media regardless of intervention. Similarly, URT (2005b) noted that majority of women and men listen to the radio at least once per week. This is evidenced by 46.9% and 40.7% of participants and non participants in that order who reported that they are trustful to their partners followed by equally likelihood of abstinence and use of condoms in the study area (Table 27). Despite all the efforts made to control HIV/AIDS, 4.7% and 3.7% of beneficiaries and non beneficiaries respectively reported that they neither use them.

Table 27: Makete and Rungwe Districts: HIV/AIDS awareness, source of information and control

HIV/AIDS awareness	Beneficiaries(n=192)		Non beneficiaries(n=108)	
	n	%	n	%
Yes	190	99.0	105	97.2
No	2	1.0	3	2.8
Source of information				
Radio	33	17.2	20	18.5
Television	1	0.5	1	0.9
Public campaigns	62	32.3	28	25.9
Radio and Television	8	4.2	0	0.0
Radio and campaign	64	33.3	45	41.7
None	24	12.5	14	13.0
Total	192	100.0	108	100.0
Methods used to control				
Abstain	49	25.5	30	27.8
Trustful	90	46.9	44	40.7
Condoms	44	22.9	30	27.8
None	9	4.7	4	3.7
Total	192	100.0	108	100.0
<i>Beneficiaries Vs non beneficiaries</i>				
<i>HIV/AIDS awareness: $\chi^2 = 1.271$, $df=1$, $\Phi = 0.065$; Source of information: $\chi^2 = 10.828$, $df = 12$, $\Phi = 0.190$, and Methods used to control: $\chi^2 = 1.978$, $df=4$, $\Phi=0.081$</i>				

4.4.4 Free access to health services by vulnerable groups

Table 28 shows that the source of health services improvements is statistically significant ($P < 0.01$). This proposes that there are different sources of health services support other than TASAF. This is confirmed by almost 83.9% of participants and 100% of non participants that improvements could not be attributed to TASAF intervention and this concludes that intervention accounts for 6.6% of beneficiaries' health.

Table 28: Makete and Rungwe Districts: Proportions of vulnerables that had free access to healthservices

Vulnerable groups	Beneficiaries(n=192)		Non beneficiaries(n=108)	
	mean	std dev.	Mean	std dev.
Orphaned children	0.380	0.486	0.550	0.661
Elders	0.130	0.335	0.250	0.471
Widows /widowers	0.110	0.311	0.250	0.438
HIV infected	0.700	0.459	0.590	0.496
Source of improvement				
TASAF	n	%	N	%
Yes	31	16.1	0	0
No	161	83.9	108	100
Total	192	100	108	100

Beneficiaries Vs non beneficiaries

Vulnerable groups: Orphaned children: -t=2.098; Elders: -t = 2.122*; Widows/widowers: -t = 2.743**; and HIV infected: t=1.737; Source of improvement: $\chi^2 = 19.779$, df=1, P<0.01, Phi=0.258,*

**Significant at P<0.05, **Significant at P<0.01*

Table 28 shows that there is a significant difference between vulnerable participants ((orphaned children and elders (P<0.05), widow/widowers (P<0.01)) and non participants to access free health services. Findings suggest that vulnerable participants' have less opportunity to access free health services than non participants. Probably, the difference between the two groups can be attributed by scarce resources to meet the demand. These findings clearly show that the NSGRP goal of providing free medical care by 2010 to eligible older has not been attained (URT, 2005a).

4.5 Analysis of the impact of TASAF assets acquired for poverty reduction

4.5.1 TASAF project on women empowerment

Accordingly CARE (2005) women empowerment is a tremendous resource for social change and a pre-requisite in the broader fight against poverty alleviation. Table 29a shows that on average women empowerment with business skills is statistically significant at (P<0.05) level. This suggests that there is a difference in business skills between recipient and non recipient women. Probably, the difference is due to the level

Table 29b: Makete and Rungwe Districts: Unemployed youth empowerment degree under TASAF participants

Changes in	Beneficiaries(n=192)		Non beneficiaries(n=108)	
	Mean	std dev.	mean	std dev.
Youth dependency	1.990	0.938	1.885	0.935
Income generating activities (IGA)	1.550	0.685	1.630	0.744
Sports and recreation programs	1.670	0.807	1.850	0.783
Youth health clubs	1.720	0.688	1.990	0.704
HIV/AIDS and reproductive services (RHS)	1.340	0.635	1.630	0.838
Criminal issues	1.960	0.903	1.790	0.876

Beneficiaries Vs Non beneficiaries

*Youth dependency: t=1.222; IGA: -t=0.974; Sports and recreation: -t=1.874; Youth health clubs: -t=3.198**; HIV/AIDS and RHS: -t=3.387**, and Criminal issues: t=1.594.*

**Significant at P<0.01

Hitherto, Table 29b shows that the average youth dependency, income generating activities, sports and recreation programs contrary to criminal issues of non recipients are the same between the two groups. Guntoro (2010) and UN (2010) observed that employment opportunities and appropriate leisure programs for youth inhibits dependency and social ills, respectively. However, Abrar *et al.* (2010); Sobel and Osoba (2008) found that high rate of youth unemployment and less income youths were more involved in crimes and violence regardless of education level. Also, Hossain (2010); Carswell *et al.* (2009); Cohen and Piquero, 2009) observed that criminal characteristics have a likelihood of intergenerational transfer and consequently full lifetime costs in a society. Therefore, assets created for poverty reduction through intervention has a meagre socio-economic impact on unemployed youth.

4.6 Sustainability of assets created for poverty reduction in community

Table 30 shows that 36.5% of participants followed by 31.2% are supported through dairy cattle and environmental conservation respectively while 2.1% benefit through carpentry project. These suggest that majority of participants benefit through cattle projects and environmental conservation projects. This could be attributed to the nature

of participants and their felt needs so as to sustain their livelihood. Meaning that most of participants sustain their lifetime livelihood through dietary acquisition from both direct and indirect produce from dairy cattle while able-bodied who are food insecure earn their livelihood through cash-for-work so as to purchase their needs.

Table 30: Makete and Rungwe Districts: Vulnerable groups projects support under TASAF intervention

Response	Beneficiaries(192)		Non beneficiaries(108)	
	n	%	n	%
Yes	192	100	0	0.0
No	0	0.0	108	100
Projects specified				
PWPs-Local roads(FI)	24	12.5		
Dispensary (SP)	9	4.7		
Dairy cattle(VG)	70	36.5		
Env cons(FI & VG)	60	31.2		
Poultry (VG)	14	7.3		
Water (CDI)	11	5.7		
Carpentry(VG)	4	2.1		
Total	192	100		

4.6.1 TASAF projects on Public Works Programs (PWPs)

This section presents the effects of TASAF rural roads and dispensary projects for food insecure and service poor participants, respectively.

4.6.1.1 TASAF rural roads project

Table 31 shows that 24% are supported to earn their livelihoods through rural roads construction and that the support is significant at ($P < 0.01$) level. This suggests that food insecure recipients benefit through TASAF intervention on rural roads. However, rural roads investment accounts for 10.18% of TASAF intervention. Similarly, Walton (2010); Yigitcanlar and Baum (2009) and Del Ninno *et al.*, (2009) observed that community participation in rural roads construction helps to build solidarity and influence the impact of intervention in mitigating income shocks as an anti-poverty instrument.

Table 31: Makete and Rungwe Districts: Proportion of participants that had TASAF support on rural roads in their village and if they benefited

Response	Beneficiaries(192)		Non beneficiaries(n=108)	
	n	%	n	%
Yes	46	24.0	0	0
No	146	76.0	108	100
Were you paid when participated?				
Yes	25	54.3		
No	21	45.7		
What was your wage per day?				
800Tshs	12	26.1		
2500Tshs	13	28.3		
Does participation help you in case of food shortage?				
Yes	18	39.1		
No	28	60.9		
<i>Beneficiaries Vs non beneficiaries</i>				
<i>Local roads support: $\chi^2 = 30.56$, $df = 1$, $P < 0.01$, $Phi = 0.319$</i>				
<i>Help in case of food shortage: $\chi^2 = 10.771$, $df = 1$, $P < 0.01$, $Phi = 0.189$</i>				

However, 54.3% of those who participated in local roads were paid 800Tshs and 2500Tshs per day in different projects operational periods and locations. Moreover, participation in projects is significantly ($P < 0.01$) different in case of food shortage among recipients. This suggests that 61% of road participants are food insecure while 39.1% of other participants reported that they are food secure. Probably, the difference in food security among participants could be attributed to their variation in daily wage and market food prices. The present study findings disagree with observations made by Nega *et al.* (2010) that intervention on food-for-work significantly reduced total and chronic food poverty. This difference could be attributed to the nature of projects, duration of participation and vulnerability status of participants.

However, according to the logic theory, intervention had short term effects thus beneficiaries enjoyed temporary constant off-farm income through participation. Thus far, they are unable to sustain their consumption path after termination of the project. The present study results differ from findings obtained by Winters *et al.* (2009) and Dercon *et al.* (2008) who found that public works activities were closely linked to non

agricultural wage employment, yet had potential contribution in facilitating increased growth and faster poverty reduction.

Also, it was reported that TASAF road construction as depicted in Appendix 3.1 is useful for easy access to health and market services, crops and timber trucking, instead of head-loading the year round as project evaluation theory states. Similarly, Dercon *et al.* (2008) observed that better roads in rural villages made it easier for households to access local markets linked to towns. However, the majority of beneficiaries, key informants and focus group discussions reported that roads prioritized are incomplete and needs rehabilitation so as to enhance multiple benefits to the society.

4.6.1.2 Basic health services for service poor (SP)

About five percent of beneficiaries' who participated in the health project at Lukasi village in Rungwe district reported that they contribute through in-kind participation so as to minimize costs and they were not paid. Moreover, recipients reported that they also contribute a meagre cash amount of money for security purpose of their dispensary. These arguments are supported by FGD who reported that the project utilized local labour and the degree of participation of beneficiaries was sufficient and community enjoys health services through cost sharing. Similarly, observations obtained by Church and Mayhew (2009) found that health service intervention improves organizational effectiveness of service provision and cost-effectiveness of the community.

However, key informant reported that at the beginning men were reluctant to join family planning as they worried that it could make their wives infertile and being unable to conceive and bear young ones. However, as a result of intervention, women have more time to participate in productive activities with their husbands and take care of their

children. These arguments concur with Church and Mayhew (2009) and Upret *et al.* (2009) observations that community health services intervention increased community satisfaction, improved service uptake by expanding the range of services provided.

According to the Project Theory Evaluation (PTE), FGD viewed that the health status of beneficiaries has improved whereas most household size is decreasing after adoption of family planning and they devote much time in productive activities. Thus, family members are food secure and healthier. Similarly, findings obtained by Church and Mayhew (2009) show that health intervention has influence on behavioural, health and social outcomes including positive change in maternal, infant and under fives children mortality rates which were rarely reported (see Appendix 3.1).

On the other hand, during the focus group discussion it was noted that there is a two in one house for the doctor and nurse house (two-in-one) and dispensary has no rest room for patients who might be waiting for health diagnosis and treatment particularly for pregnant mothers. Beneficiaries proposed for the improvement of a dispensary and construction of houses for nurses.

Interventions proposed by beneficiaries include: provision of electricity, motor vehicle for a dispensary, milling machine, livestock keeping, roads construction, secondary school and establishment of a market place. Therefore, health service provision through TASAF intervention at this village is realized. This achievement is on line with NSGRP cluster II and millennium development goals (MDGs 4, 5 & 6) (URT, 2005a).

4.6.2 TASAF dairy cattle project

Table 32 shows that 36.5% of recipients are supported to meet their dietary intake and earn a livelihood from the sale of surplus milk and that the support is significant at ($P < 0.01$) level. Meaning that there is a difference between participants themselves who participate and benefit from the created project. Participants in dairy cattle enjoy multiple benefits from participation in which they get milk, meat and cowdung as well as cash earned by selling surplus milk so as to maximize their social welfare. Similarly, observations made by Lukuyu *et al.* (2009) pointed out that dairy cattle provide a unique development strategy.

Table 32: Makete and Rungwe Districts: Proportion of sampled vulnerable participants that had TASAF support in dairy cattle and if they benefited

Beneficiaries(n=192)						
Response	n	%				
Yes	70	36.5				
No	122	63.5				
$\chi^2 = 46.4, df = 5, P < 0.01, Phi = 0.491$						
Descriptive statistics	n	Max.	Min.	Mean	std dev.	Skewness
Cows owned for milk purpose	48	20	1	2.17	3.509	4.089
Milk produced per day(litres)	44	14	0	4.45	3.406	0.556
Milk sold per day(litres)	44	8	0	2.3	2.298	0.631
Milk for household use/day(litres)	44	8	0	1.7	1.825	1.496
Price of one litre of milk(Tshs)	46	600	400	489	37.878	-1.212

Positive skewness distribution (Table 32) shows that vulnerable recipients own less than the average number of dairy cattle, that is they own one cow which is below the mean (see Appendix 3.2). Moreover, an average of 4.45 and 1.70 litres of milk are produced and consumed per day respectively while the majority produce and consume less than the average. Inevitably, others neither produce, sell nor consume some milk. Probably, poor feeding, poor dairy breed type and lack of knowledge on animal husbandry affect milk production. These results concur with findings obtained by Lukuyu *et al.* (2009) who found that smallholder farmers lack technical knowledge of

production, management and feeds for cattle. In a different view, FDGs reported that, it is an achievement even if they get one litre of milk per day, since they had nothing before, yet:

...A woman (48 years old) said ..."an average of four litres per day is so little to pay those costs incurred for feeding a cow per day... CMC bought a local breed of cattle with poor traits for milk production, feeds supplement are expensive, grass are scarce during the dry season and I pay Tshs 2000 per day as labour costs for cutting grass. The source of this problem is CMC aggravated by TASAF leaders' failure in visiting projects."

Also, FDGs reported that CMC bought cows within their village and from the neighbour villages. However, cows purchased lack good traits as a result cows produce two litres per day regardless of proper feeding. These arguments are similar to the findings by Lukuyu *et al.* (2009) who observed that small East African Short Horned Zebu, Ankole Longhorn and Karamajong in Uganda yield one to four litres per day excluding milk consumed by suckling calf. However, Py-Smith (2010) found that an average of seven to eight litres of milk are produced a day for each cow in intensive smallholder production systems using improved breeds of cattle. Place *et al.* (2009) and Py-Smith (2010) argue that this low average production could be attributed to the animal breed, health and diet.

Moreover, Table 32 shows that beneficiaries variably sell milk above the mean price per litre as indicated by a negative skewness which measures the deviation from a normal distribution. McDermott *et al.* (2010) observed that the market demand for milk in rural areas is high and smallholder producers sell their milk via informal markets. Similarly, Kocturk (2009); Melesse and Beyene (2009) noted that dairy farming project had a

positive impact on rural life standards and income growth and played an important role in achieving food security.

4.6.3 TASAF project and environmental conservation

Table 33 shows that 31.25% of participants had TASAF support to meet their daily needs for participating through the sale of tree seedlings and that the support is significant at ($P < 0.01$) level. This suggests that participants benefit through participation in environmental protection. These findings agree with observations made by Rios and Pagiola (2009) that participants in environmental conservation had more income than non participants.

Table 33: Makete and Rungwe Districts: Proportion of participants that had TASAF support in environmental conservation in their village and if they benefited

Beneficiaries(n=192)						
Response	n	%				
Yes	60	31.25				
No	132	68.75				
$\chi^2 = 42.2, df=1, P<0.01, Phi= 0.375$						
Were you trained before?						
Yes	59	98.3				
No	1	1.7				
Descriptive statistics		Max.	Min.	Mean	std dev.	Skewness
Nmber of training days	60	3	0	2.14	0.511	-0.587
Price of one seedling(Tshs)	60	0	0	26.7	44.594	1.083
Income level per day (Tshs)	60	1400	500	1160	401.354	-1.083

Table 33 also shows that, on average one tree seedling of tree is sold at Tshs 26.70 at the time of transplanting. Results are associated with high standard deviation and positive skewness reflecting that the price of one seedling is below its average price and varies between project locations. Probably, either seedlings are distributed freely as a bonus to participants and the society at large or sold at a subsidized price to encourage environmental conservation. Equally, Cole (2010) observed that participants planted a broader diversity of tree species and had positive environmental benefits.

Thus far, intervention is biased particularly in Makete district where all participants are elders (see Appendix 3.3) contrary to the project objective. However, TASAF intervention project on environmental conservation influence on food security and socio-economic impacts for the vulnerable people is verified by the estimation model.

4.6.4 TASAF and poultry project

Table 34 shows that 7.3% of beneficiaries had TASAF support to meet their health dietary food and protein requirements for participating through eating meat, eggs and sale of surplus eggs and that the support is significant at ($P < 0.01$) level. These findings agree with observations by Islam *et al.* (2010) and Kingori *et al.*, (2010).

Table 34: Makete and Rungwe Districts: Proportion of participants that had TASAF support in poultry in their village and if they benefited

Beneficiaries(n=192)					
Response	n	%			
Yes	14	7.3			
No	178	92.7			
$\chi^2=50.8, df=1, Phi=0.515, P<0.01$					
Descriptive statistics	Max.	Min.	Mean	std dev.	Skewness
Number of chicken provided	40	10	16.43	12.774	1.566
Current number of chicken	27	3	11	6.312	1.122
Number of eggs laid /week	10	0	2.64	3.104	1.056
Number of eggs sold /month	20	0	6	8.521	0.975
Number of eggs consumed /day	4	0	1.21	1.369	0.602
Price per egg(Tshs)	250	200	246.43	13.363	-3.742

Table 34 also shows that, initially each participant has an average of about 16 chickens however, it is positively skewed and variably. This suggests that most of participants own chickens below the mean from the inception. Moreover, currently each recipient has an average of 11 chickens, indicating that most beneficiaries have less than the mean number of chickens possessed. Probably, either chicken possessed from the inception died from diseases or eaten by predators. However, Dinker *et al.* (2010) found that major constraints of rural poultry production were partly due to prevailing diseases, lack of

proper health care and poor feeding due to lack of knowledge. Also, poultry recipients are not provided with comprehensive and objective information about different poultry husbandry systems and types of management (Gue'ye, 2009).

Moreover, Table 34 shows that on average about three eggs are laid weekly, with the most beneficiaries collecting below the mean number. Suggesting that other beneficiaries do not collect any egg per week, probably chickens' feeds are insufficient and inappropriate for egg production.

Furthermore, Table 34 shows that the mean monthly income from the sale of eggs varies among recipients and is meagre. Even though they sell eggs at a higher price than the mean price, their income is too little to sustain their livelihoods. This suggests that beneficiaries need to acquire extra income from other sources to maintain their livelihoods for their entire lifetime. However, this study results disagree with findings obtained by Fakinola and George (2008) who observed that poultry are valuable asset to vulnerable people as they contribute significantly to food security and poverty alleviation.

Table 34 also shows that an average of one egg is consumed daily by TASAF participants, which implies that their diet is improved since many households in rural areas do not eat eggs daily. Moreover, key informants reported that the project have improved their diet contrary to the income which is scanty to sustain their livelihood as opposed to NSGRP (URT, 2005a) cluster II on poverty alleviation and improvement of vulnerable rural livelihoods (see Appendix 3.4). To this end, both key informants and FGD reported that lack of knowledge on poultry keeping and making feeds from local

available foods are bottlenecks to the project performance. However, the significance of this project on health status of recipients is confirmed by the estimation model.

4.6.5 TASAF and Community Development Investment (CDI) - water project

Table 35 shows that 5.7% of beneficiaries had TASAF support to access clean and safe water for households use. This suggests that TASAF intervention on water has no significant effect on participants. Probably, this is because poor water infrastructure created to beneficiaries has unreliable water supply. Narcisse (2010) in Côte d'Ivoire and Momba *et al.* (2009) found similar results that rural communities were depending on unprotected traditional water sources.

Table 35: Makete and Rungwe Districts: Proportion of participants that had TASAF support in water investment in their village and if they benefited

Beneficiaries(n=192)					
Response	n	%			
Yes	11	5.7			
No	181	94.3			
$\chi^2 = 6.423, df=1, Phi = 0.146$					
Has income increased?					
Yes	8	72.7			
No	3	27.3			
Descriptive statistics	Max.	Min.	Mean	std dev.	Skewness
Distance from the waterpoint (metres)	300	10	130.91	134.941	0.613
Monthly contribution(Tshs)	200.00	200.00	200.00	0.000	0.000
Income level /month (Tshs)	600 000	40 000	50 000	14 142.00	-0.534

Table 35 also shows that TASAF participants access water at a less than the average distance (130.94 metres) from individuals' household to the water point. Suggesting that the distance from water point varies depending on community distribution as prioritized by beneficiaries through voting. However, observations made by Whittington *et al.* (2009) in Bolivia, Peru and Ghana reported that households in villages under project accessed water at distance from the infrastructure created.

With respect to the effect on income, 72.7% of recipients reported an increase of income, suggesting that water intervention improved their livelihoods as indicated by negative skewness. Possibly, more people use water for irrigating their gardens, dairy cattle and moulding bricks activities thus they earn their livelihood through sales of green vegetables, milk and milk products. Ludi (2009) and Rob de Loë *et al.* (2007) observed that increased water availability and reliability in agriculture through crops irrigation was the preferred option to increase productivity and contribute to poverty reduction.

In FGD it was reported that, the Tshs 200 monthly contribution per household is insufficient for the project sustainability. Whittington *et al.* (2009) had the same observations that projects' villages paid very little for the improved water services as a result the finances of many project villages' water committees were in poor profile for sustainability because maintenance and repair of the water infrastructure required specialist skills, tools, materials in stock and transport since the project has broad multi-dimensional use for social and economic activities (Rob de Loë *et al.*, 2007; Narcisse, 2010).

With regard to the effect of TASAF on labour and time spent, project has significantly reduced labour and time on accessing water (see Appendix 3.5) and thus enhanced agricultural productivity. Also, KI noted that accessing water close to homes has reduced households' conflicts between wives and husbands and sanitation has reduced occurrence of infectious diseases like diarrhoea and dysentery. In addition, FGD reported that community voice was heard by financier, since water is for everybody use and the degree of participation of the community was sufficient during the implementation process. However, key informants and FGD reported that water is not

reliable. Thus rehabilitation of water infrastructure is required. Their argument is similar to the findings by Rosegrant *et al.* (2009) and Abdullaev *et al.* (2009) who observed that water demand increases because of population growth and income changes in communities.

4.6.6 Carpentry works for Vulnerable orphans project

Table 36 shows that 2.1% of recipients had TASAF support to earn their livelihoods and that the support is statistically significant at ($P < 0.01$) level. These results are similar to the observations by Imoro and Nti (2009) who pointed out that only 3% of recipients acquired carpentry skills supported by Social Investment Funds (SIF) on mitigation of unemployment, poverty and migration of vulnerable unemployed youth on a demand-driven basis.

Table 36: Makete and Rungwe Districts: Proportion of participants that had TASAF support in carpentry works in their village and if they benefited

Beneficiaries (n =192)					
Response	n	%			
Yes	4	2.1			
No	188	97.9			
$\chi^2=3.00E2$, $df=1$, $Phi=1.00$, $P<0.01$					
Changes in income					
Yes	4	100			
No	0	0.0			
Descriptive statistics	Max.	Min.	Mean	std dev.	Skewness
Training costs (Tshs)	0	0	0	0	
Average income per month(Tshs)	150 000	150 000	150 000	0	

It is worth reporting that beneficiaries are trained through on-the-job carpentry works, therefore no training costs were incurred at the inception of the project. Attanasio *et al.* (2009) found that the disadvantaged youth program offered vocational training for a period of six months; however benefits were greater when beneficiaries spent more time doing on-the-job training than in classes. Equally, Hossain (2010) reported that the duration of training period from seven days to one month and three months for special

trade was insufficient to learn properly and adequately develop the skills for the trainee. In conclusion, the approach of learning-by-doing is more effective than attending classes in any intervention depending on the nature of activities.

With regard to effect of TASAF on participants' income, FGDs reported that on average their income has increased per recipient depending on the works performed. In FGD it was reported that they have executed various activities including Ward health centre project, secondary and primary school buildings contracts. For this reason, study findings concur with observations made by Jamali *et al.* (2011) and Attanasio *et al.* (2009) that intervention increased wage and salaried earnings of recipients.

Moreover, key informants reported that the project has successfully paid secondary school fees and school uniforms for 20 primary school orphaned children worth Tshs 160 000 in 2010. Furthermore, beneficiary group leader stated that the project has reduced time spent to search for the same service in the neighbour villages. Also, it was reported that the project has influenced unemployed youth not to take risky activities. Also, findings obtained by Imoro and Nti (2009) and Attanasio *et al.* (2009) reported that intervention created viable alternative sources of livelihood.

Hitherto, FGD reported that the project face some problems such as poor workshop with grass thatched roof (see Appendix 3.6), lack of motor (5Khp), lack of wire for connecting alternator and switch, poor working bench, scarcity of timbers, fewer carpentry working tools and lack of carpentry skills. Imoro and Nti (2009) noted that start up capital and equipments were a major challenge for the sustainability of the SIF apprenticeship graduates. Equally, Hossain (2010) found that credit utilization and marketing of the products was not fruitful for the welfare of disadvantaged youth

community. Though, the project is not pro-female participants since they tend to abandon participation as they get married, however tailoring mart could be a viable alternative for them. In conclusion, the significant influence on food security and health status, impact on socio-economic activities and its sustainability is revealed by the estimation model.

4.6.7 TASAF projects relevance, effectiveness and efficiency

4.6.7.1 TASAF projects relevance

Table 37 shows that on average project relevance to poverty reduction and addressing social related needs between Makete and Rungwe districts are statistically significant at ($P<0.05$) and ($P<0.01$) levels respectively. Suggesting that there is a difference between the two districts, probably the variation can be attributed to the fact that Rungwe has more experience in implementing TASAF projects than Makete district.

Table 37: Makete and Rungwe Districts: Attributes on project relevance

Project attributes	Beneficiaries (n=192)				F-value
	Makete		Rungwe		
	Mean proportion	std dev.	Mean proportion	std dev.	
Is the project relevant to poverty reduction?	0.850	0.360	0.940	0.236	4.554*
Is the project goal addressing poverty related needs?	0.580	0.498	0.970	0.181	60.575**
Involvement in planning and implementation?	0.850	0.360	0.890	0.313	0.706
Is the project addressing the gender issue adequately?	0.930	0.254	0.890	0.291	0.337
Does the project purpose meet the immediate needs?	0.450	0.501	0.880	0.324	52.298**
Are the project results attractive to the beneficiaries?	0.580	0.498	0.940	0.236	47.106**

*Significant at $P<0.05$, **significant at $P<0.01$, $df=1$

Table 37 also shows that the average proportion in meeting the immediate social needs and attractiveness of project results between Makete and Rungwe districts are both significantly different at ($P<0.01$) level. The differences between Makete and Rugwe

districts could be attributed to the districts' success or failure to identify felt and expressed recipients' needs at the inception of the project intervention. However, Kutsch and Hall (2010) noted that irrelevant projects might become counterproductive to recipients.

4.6.7.2 TASAF project effectiveness

With regard to effectiveness, recipients were asked to indicate whether project activities were implemented as planned, whether project outputs were achieved as expected and existence of any constraints that hindered implementation or otherwise. Table 38 shows that on average both project activities and project outputs between Makete and Rungwe districts are statistically significant at ($P<0.05$) and ($P<0.01$) levels respectively. These suggest that there are differences in implementing project activities and consequently different project outputs are achieved between the two districts. Probably, the variations in project activities and project outcomes between Makete and Rungwe districts can be attributed to weakness in monitoring and evaluation during the implementation process which has an adverse effect in the expected outputs and agree with observations made by (Lecy, 2010; ILO, 1997).

Table 38: Makete and Rungwe Districts: Attributes on project effectiveness

Project attributes	Beneficiaries (n=192)				
	Makete		Rungwe		F-value
	Mean proportion	Std dev.	Mean proportion	std dev.	
Are the project activities implemented as planned?	0.850	0.360	0.940	0.236	4.554*
Are the project outputs achieved as expected?	0.620	0.490	0.890	0.313	22.43**
Any constraints hindered implementation?	0.470	0.502	0.410	0.494	0.533

*Significant at $P<0.05$, **significant at $P<0.01$, $df = 1$

4.6.7.3 TASAF projects efficiency and sustainability

Project participants were asked to indicate whether inputs delivery was appropriate, whether the project utilized the existing human resources and the degree of participation of beneficiaries, or otherwise. Table 39 shows that the average time taken to get inputs at the project location and the degree of recipients participation for Makete and Rungwe districts are both statistically significant at ($P<0.01$) and ($P<0.05$) levels. Suggesting that there are differences in timing of inputs delivery and the extent of recipients' involvements in projects implementation in the two districts. The differences in time taken to deliver the inputs and beneficiaries' involvement between the two districts can be attributed to TASAF procurement procedures, poor infrastructure net work to the project location and low awareness of recipients on project ownership. Kusek and Rist (2004) noted that without ownership, recipients are not willing to invest their time and other resources in the project. In this case both districts maximize the use of local human resources available, meaning that target groups earn their livelihood while they minimize projects costs, respectively.

Table 39: Makete and Rungwe Districts: Attributes on project efficiency

Beneficiaries (n=192)					
Project attributes	Makete		Rungwe		F-value
	Mean proportion	std dev.	Mean proportion	std dev.	
Is the timing of inputs appropriate?	0.410	0.495	0.700	0.461	16.496**
Does the project utilize the existing human resources?	0.930	0.254	0.970	0.157	2.124
Does the degree of participation of beneficiaries sufficient?	0.860	0.346	0.950	0.220	4.496*

*Significant at $P<0.05$, **significant at $P<0.01$, $df=1$

In summary, projects results discussed and presented so far ascertain the sustainability of TASAF project after the withdrawal of TASAF resources as shown in the estimation model used. Influential factors identified for sustainability are based on the priorities

reflected in project goals in addressing poverty and related social needs, achieving immediate needs, attractiveness of projects results and the degree of participation by the beneficiaries. Since, the purpose of the TASAF intervention was to provide immediate support rather than longer-term benefits, TASAF project is more focused on outputs rather than outcomes. The following section presents quantitative estimation of impact of intervention to confirm the above observed facts on impact of the project to the livelihood of the vulnerable people.

4.7 Quantitative estimation procedures for hypotheses testing

4.7.1 Multi-collinearity diagnosis of continuous and dummy variables

Tolerance (TOL) and Variance Inflation Factor (VIF) and pair-wise correlation are useful in determining the degree of linear relationship of explanatory variables. Table 40 shows that both TOL and VIF of continuous variables do not suffer from multicollinearity problem. The results are in accordance with the rule of thumb that any variable with TOL value above 0.19 or below a VIF value of 5.3 indicates the absence of multicollinearity problems (Hair *et al.*, 2005; Gujarati, 2004; Studenmund, 2000).

Table 40: Multicollinearity diagnostic result for continuous variables (n =300)

Collinearity statistics		
Variable	TOL	VIF
Beneficiary age	0.683	1.464
House hold size	0.870	1.149
House hold assets	0.810	1.235
Education level	0.715	1.399
Beneficiary income	0.906	1.104
Farm inputs	0.807	1.239
Time allocation	0.933	1.072
Market price	0.864	1.157
Market distance	0.925	1.081

Table 41 indicates an absolute interval between 0.013 and 0.499 of pair-wise correlation coefficient between dummy variables. This suggests an existence of internal consistence,

strength and direction of and presence of non-zero correlations among regressors. Gujarati (2004) notes that the low absolute value (below 0.8) of correlation confirms the same as in the earlier section, therefore these results indicate precise estimates of coefficients and standard errors of explanatory variables in the next sections.

Table 41: Pair-wise matrix correlation of dummy variables

Variable	1	2	3	4	5	6	7	8	9
1.Partic	1.000								
2. Femhhd	0.010	1.000							
3. Mstatus	-0.130	-0.022	1.000						
4.Pwpr	0.329	0.022	0.028	1.000					
5.Dcatproj	0.477	-0.128	-0.085	0.207	1.000				
6.Envconspr	0.291	0.107	0.018	-0.196	-0.301	1.000			
7.Pproj	0.292	-0.013	-0.104	0.499	0.100	-0.147	1.000		
8.Watproj	0.026	0.064	0.025	-0.076	-0.118	-0.097	-0.057	1.000	
9.Carproj	0.053	-0.063	-0.041	-0.046	-0.070	-0.058	-0.034	-0.023	1.000

4.7.2 Estimation of impact of assets created on socio-economic status

Table 42 shows that result on participation (partic) variable indicate that the estimate difference is statistically significant. This confirms that the variable is an endogenous explanatory, thus causes endogeneity problem. Therefore, the use of 2SLS procedures is necessary to solve the problem.

Table 42: Test for endogeneity of continuous and dummy variables

Variable	OLS	2SLS
Participation	0.078	0.353***
Rungwe	-0.042	0.015
Project peration time	0.036*	-0.011
Female house hold headd	-0.156**	-0.165**
Beneficiary age	-0.003	-0.003
Marital status	0.013	0.056
Education level	-0.002	-0.008

Significance levels: *, ** and *** are $P < 0.1$, $P < 0.05$ and $P < 0.01$, respectively

Based on the results in Table 43, IV/2SLS model is used to estimate the socio-economic impact and sustainability of assets. For this purpose, model fit, regression specification error (RAMSEY RESET) and heteroscedasticity tests have been carried out as shown in

Appendix 2.1. Findings indicate that Wald test is statistically significant consequently pseudo R-squared (24.6%) shows that the model is suitable for data analysis and instruments are relevant and adequately correlated with endogenous explanatory variable respectively. However, both RAMSEY RESET and heteroskedasticity test are insignificant reflecting that the model has no specification errors and variances are constant as presented in Appendix 2.1.

Table 43 shows that health and reproductive services have significant negative effects ($P < 0.01$) on socio-economic status. Suggesting that both intertwined services reduced socio-economic impact of participants. Probably, this observation can be attributed to the fact that there is inadequate provision of both services in the study area which affect their participation in created assets. Similar observations made by Ugwu (2009) reported that the impact of HIV/AIDS on the farm women experienced loss of feminine agricultural labour supply, reduced household income and agricultural production.

Also, Table 43 shows that there are positive significant correlation among women associations ($P < 0.01$), women participation and income generating activities ($P < 0.05$) with socio economic status through participation ($P < 0.05$). Results suggest that formation of women associations through their involvement in the established sustainable sources of income have positive effects on socio economic outcomes. Therefore, participation of beneficiaries in established projects is a kick-start that enhances their livelihoods. Results are consistency with Hashim *et al.* (2010); Husain *et al.* (2009); and Snetro-Plewman (2007) who noted that participation of women in created assets facilitate a greater pool of knowledge and supplement their meagre family income.

Table 43: Makete and Rungwe Districts: Instrumental variables (2SLS) regression of socio-economic status

Variables	Coef.	Std. Err.	z	dy/dx
Instrumented				
Participation	0.353	0.170	2.070**	0.078
Instruments				
Rungwe (Location)	0.015	0.079	0.180	-0.042
Project operation period	-0.011	0.035	-0.320	0.036
Female household head	-0.165	0.063	-2.620***	-0.156
Beneficiary age	-0.003	0.002	-1.670	-0.003
Marital status	0.056	0.062	0.910	0.013
Education level	-0.008	0.032	-0.250	-0.002
Women participation	0.211	0.087	2.430**	0.229
Women associations	0.333	0.055	6.010***	0.323
Loans disbursement	0.084	0.058	1.450	0.093
Women decision	0.060	0.069	0.870	0.070
Youth dependency	0.027	0.052	0.520	0.023
Income generating activities	0.126	0.055	2.270**	0.104
HIV reproductive health services	-0.272	0.057	-4.750***	-0.255
Public works	-0.098	0.106	-0.920	-0.005
Dairy cattle project	-0.232	0.142	-1.640*	-0.034
Environmental conservation proj	-0.278	0.145	-1.920	-0.081
Poultry project	-0.190	0.148	-1.280	-0.029
Carpentry project	-0.070	0.263	-0.270	0.153
Constant	0.281	0.173	1.620	

Significance levels: *, ** and *** are $P < 0.1$, $P < 0.05$ and $P < 0.01$, respectively.

Table 43 also shows that female headed households have a negative significant ($P < 0.05$) relationship with socio-economic status. This suggests that a 1% increase in female head participation in projects reduces its socio economic effects by 0.156% than male household heads participants. Probably, their participation in projects keeps them away from other important socio-economic activities, though they have less access to productive resources than male counterparts. URT (2006b) supports that women do not usually own assets and rarely have the ability for autonomous decision making. In conclusion, these findings confirm that participation have positive significant ($P < 0.05$) influence in socio-economic activities of recipients through assets created for poverty reduction contrary to hypotheses one, this could be attributed to new skills and

knowledge acquired. In the same way, Wichinsky *et al.* (2012) had similar observations that home organization enabled participants to plan and work together.

4.7.3 Estimation of food security

The result shows that the coefficient of the inverse mill's ratio variable (λ) obtained is statistically significant ($P < 0.05$), suggesting that its inclusion was necessary to avoid sample selection bias (Khalid and Temu, 2009). Table 44 shows that projects in Makete district have a negative significant ($P < 0.01$) correlation with food security. This suggests that recipients in Makete district are food insecure than their counterparts in Rungwe district. Probably, this can be attributed by differences in resources endowment and benefits accrued to participants caused by ecological variation. This conforms to findings obtained by Dontsop *et al.* (2011) who noted that across ecologies the impact was highest in rain fed upland, followed by rain fed lowland and irrigated ecology.

Table 44 also, shows that female household head have negative significant ($P < 0.05$) relationship with food security. This suggests that female heads are food insecure than male headed families. Probably, this is because they have binding prioritized projects and family responsibilities as observed by Ahmad and Talib (2010); Lecy (2010); Fernandez-Covnejo *et al.* (2007) as they are less endowed with resources for production. Present study findings contradict with observation made by Wetengere (2009) who found that the probability of female farmers to adopt fish farming was higher than male farmers.

Moreover, Table 44 shows that there is a positive significant ($P < 0.01$) relationship between farm inputs and food security. Meaning that, an increase in farm inputs enhances food security. Conversely, market food prices ($P < 0.05$) and proximity to the

market ($P < 0.01$) both have a negative significant association with food security. These suggest that decrease in market food prices and market distances improve food security of recipients, *ceteris paribus*. In the same way, Charles and Godfray (2010) noted that patterns in food prices are indicators of trends in the food availability and extension of social grants to eligible rural households is likely to improve food security of the hungry people (Altman *et al.*, 2009).

Table 44: Makete and Rungwe Districts: Heckman selection model - two-step estimation of food security

Variables	Coef.	Std. Err	z	dy/dx
Outcome equation				
Participation	-0.114	0.138	-0.830	-1.243
Makete (Location)	-1.379	0.153	-8.990***	-1.386
Female household head	-0.315	0.138	-2.270**	-0.065
Beneficiary age	0.006	0.005	1.260	0.007
Marital status	0.021	0.144	0.140	-0.151
Education level	-0.066	0.078	-0.840	0.001
Household size	-0.011	0.020	-0.550	0.044
Household assets	-0.025	0.027	-0.910	-0.035
Farm inputs	0.231	0.062	3.700***	0.343
Market price	-0.317	0.131	-2.410**	0.107
Market distance	-0.049	0.010	5.010***	0.004
Carpentry project	1.606	0.453	3.540***	2.369
Public works	0.507	0.177	2.870***	1.251
Dairy cattle project	0.271	0.178	1.520	1.297
Environmental conservation	1.124	0.202	5.560***	2.070
Water project	0.612	0.309	1.980**	1.014
Constant	2.862	0.487	5.880	
Selection equation				
Widowers	5.188	0.222	2.87***	
Elder	-0.411	0.465	-0.880	
Able-bodied	-0.568	0.452	-1.260	
HIV-infected	-1.205	0.472	-2.550**	
Constant	0.918	0.443	2.070**	
Inverse Mills ratio				
Lambda	0.665	0.331	2.010**	
Rho	0.737			
Sigma	0.902			

Significance levels: *, ** and *** are $P < 0.1$, $P < 0.05$ and $P < 0.01$, respectively.

Furthermore, among six projects surveyed, poultry project is chosen as a base for comparison against other projects in order to avoid perfect collinearity problem. Thus carpentry, environmental conservation, public works ($P<0.01$) and water ($P<0.05$) have a positive and significant association with food security than a control unit. This suggests that, one unit increase in each project has a significant positive influence on food security, *ceteris paribus*. This is because their participation enables them to earn their livelihoods. In the same way, observations made by Agba *et al.* (2010); Brussard *et al.* (2010); IDA (2008) and Burney *et al.* (2010) reported that wealth and employment creation and biodiversity conservation significantly improved the livelihoods of the rural people.

Along with the participant groups, the chronic diseased group is also chosen as a control for comparison purpose in order to avoid perfect collinearity problem. Table 44 shows that widowers are significantly ($P<0.01$) associated with food security. Suggesting that widowers are more likely to be food secure than other participants. This indicates that their participation in the projects established have an influence on food security. The difference in food security between widowers and other recipient groups can be attributed to widowers' ability to maximize the use of projects' resources to attain and sustain their family's livelihoods. These study findings contradict with observations made by Holmes *et al.* (2009) on gender vulnerability those women precautionary save food as emergence during food crisis within their households than male. Also, Erhabour and Ojogho (2011) revealed that low income earners in rural households spent more income on food consumption.

On the other hand, Table 44 shows that HIV infected have a negative significant ($P<0.05$) relationship with food security. This suggests that HIV infected recipients are

food insecure. Their food insecurity status can be attributed to the fact that their participation in the projects keep them away from accessing other food resources to complement their dietary intake compared to the chronic diseased group. Similarly, Wiser *et al.* (2010) and Weiser *et al.* (2009) observed that HIV-infected and marginally participants experienced food insecurity. In conclusion, there is no difference in food security between participants and non-participants suggesting that the later are “catching up” over the longer-term. Therefore, there is no evidence to reject the hypothesis that there is no statistically significant difference in food security between the community with and without intervention. DANIDA (2003) reported that non recipients changed dramatically and increased fish production as cited in the literature. Present findings contradict with observations made by Crowe and Smith (2012) that participants were more likely to have a variety of food because of network with outside communities.

4.7.4 Analysis of health status of participants

Results in Appendix 2.3 show that Breusch-Pagan/Cook-Weisberg test and regression specification error test (RAMSEY RESET) are both insignificant, meaning that the model has homogeneous variance with no specification error, respectively. Also, Table 45 shows that the coefficient of the correction factor for selection bias, the inverse mill's ratio is statistically significant ($P < 0.05$) suggesting that the model is appropriate and there is no selection bias the same to findings obtained by (Khalid and Temu, 2009).

Table 45 shows that among the projects surveyed water is selected as a base, however, both poultry and public works have positive significant ($P < 0.05$) influence on health status of participants contrary to carpentry works ($P < 0.01$) against a control project. This suggests that health status of participants in poultry and public works is better-off than those in carpentry works and a base. Perhaps, participants get their balanced diet to meet

dietary requirements by eating eggs and meat and use their earned income to access needs which enhances their health outcomes respectively.

Table 45: Makere and Rungwe Districts: Heckman's- two-step selection model regression on health status

Variable	Coeff.	Std. Err.	z
Outcome equation			
Participation	0.071	0.033	2.170**
Rungwe (Location)	0.158	0.066	2.400**
Project operational period	0.038	0.018	2.080**
Female household head	0.027	0.035	0.750
Beneficiary age	-0.002	0.001	-2.060**
Marital status	-0.051	0.033	-1.550
Education level	-0.003	0.018	-0.140
Distance from health services	0.085	0.050	1.680*
Food security	0.028	0.017	1.670*
Market food prices	-0.031	0.032	-0.990
Public works	0.117	0.046	2.560***
Dairy cattle project	-0.047	0.060	-0.780
Environmental conservation project	-0.072	0.054	-1.330
Poultry project	0.148	0.066	2.230**
Carpentry project	-0.681	0.115	-5.940***
Constant	0.703	0.141	4.980***
Selection equation			
Elder	-0.866	0.401	-2.160**
HIV infected	-1.610	0.411	-3.920***
Able bodied	-1.014	0.386	-2.630***
Constant	1.374	0.374	3.670
Inverse Mills' Ratio			
Lambda	-0.214	0.092	-2.320**
Rho	-0.874		
Sigma	0.245		

Significance levels: *, ** and *** are P<0.1, P<0.05 and P<0.01, respectively.

Moreover, assets created including rural roads and dispensary stimulates socio-economic growth such as income, food production, health services through reduction of time spent in accessing social services hence improves health status as cited in the literature by (Ahmed, 2009; Gue'ye, 2009; IDA, 2008; Lombard and Coetzer, 2007; Ochieng, 2002).

Also, Table 45 shows that beneficiary age and project operation period have significant ($P < 0.05$) influence on health status. This suggests that the time of operation since the inception of the project has a positive effect on outcome, while participation of recipients' decreases as age increases hence affecting health status negatively. Probably, as long time as recipients take part they gain more from project returns because of accumulated experience overtime, thus senior age inhibits them to access physical and financial resources to enhance health status. Bourne and Rhule (2009) had similar results and noted that age of respondents were statistically significant predictors of health status of rural people.

The present study findings confirm that TASAF participation improves health status of beneficiaries though it varies significantly at ($P < 0.05$) level in the two locations all of which widowers are significantly healthier than others. Most likely, this is contributed by differences in resources and benefits accrued to participants caused by ecological variation. A similar study by Bourne (2009) observed that geographical location of residence of recipients was a significant predictor of health status. In contrast, Friel and Baker (2009) observed that human and poverty reduction can not be achieved without improving nutrition in an equitable way.

4.7.5 Sustainability of TASAF assets

Results in Appendix 2.4 show that there is a significant Wald statistic test and pseudo R-squared of 84.92% indicating that the model is appropriate and instruments are relevant and sufficiently correlated with endogenous explanatory variables respectively. Furthermore, the hat-square variable for fitted values ($P > |t| = 0.346$) and constant variance are both not statistically significant as shown in Appendix 1.4 suggesting that the model is appropriate with no specification error and heteroskedasticity problems.

Also, Table 45 shows that beneficiary age and project operation period have significant ($P < 0.05$) influence on health status. This suggests that the time of operation since the inception of the project has a positive effect on outcome, while participation of recipients' decreases as age increases hence affecting health status negatively. Probably, as long time as recipients take part they gain more from project returns because of accumulated experience overtime, thus senior age inhibits them to access physical and financial resources to enhance health status. Bourne and Rhule (2009) had similar results and noted that age of respondents were statistically significant predictors of health status of rural people.

The present study findings confirm that TASAF participation improves health status of beneficiaries though it varies significantly at ($P < 0.05$) level in the two locations all of which widowers are significantly healthier than others. Most likely, this is contributed by differences in resources and benefits accrued to participants caused by ecological variation. A similar study by Bourne (2009) observed that geographical location of residence of recipients was a significant predictor of health status. In contrast, Friel and Baker (2009) observed that human and poverty reduction can not be achieved without improving nutrition in an equitable way.

4.7.5 Sustainability of TASAF assets

Results in Appendix 2.4 show that there is a significant Wald statistic test and pseudo R-squared of 84.92% indicating that the model is appropriate and instruments are relevant and sufficiently correlated with endogenous explanatory variables respectively. Furthermore, the hat-square variable for fitted values ($P > |t| = 0.346$) and constant variance are both not statistically significant as shown in Appendix 1.4 suggesting that the model is appropriate with no specification error and heteroskedasticity problems.

Also, Table 45 shows that beneficiary age and project operation period have significant ($P < 0.05$) influence on health status. This suggests that the time of operation since the inception of the project has a positive effect on outcome, while participation of recipients' decreases as age increases hence affecting health status negatively. Probably, as long time as recipients take part they gain more from project returns because of accumulated experience overtime, thus senior age inhibits them to access physical and financial resources to enhance health status. Bourne and Rhule (2009) had similar results and noted that age of respondents were statistically significant predictors of health status of rural people.

The present study findings confirm that TASAF participation improves health status of beneficiaries though it varies significantly at ($P < 0.05$) level in the two locations all of which widowers are significantly healthier than others. Most likely, this is contributed by differences in resources and benefits accrued to participants caused by ecological variation. A similar study by Bourne (2009) observed that geographical location of residence of recipients was a significant predictor of health status. In contrast, Friel and Baker (2009) observed that human and poverty reduction can not be achieved without improving nutrition in an equitable way.

4.7.5 Sustainability of TASAF assets

Results in Appendix 2.4 show that there is a significant Wald statistic test and pseudo R-squared of 84.92% indicating that the model is appropriate and instruments are relevant and sufficiently correlated with endogenous explanatory variables respectively. Furthermore, the hat-square variable for fitted values ($P > |t| = 0.346$) and constant variance are both not statistically significant as shown in Appendix 1.4 suggesting that the model is appropriate with no specification error and heteroskedasticity problems.

Analysis in Table 46 shows that of all the projects surveyed only carpentry works is statistically significant at ($P < 0.05$) level and sustainable. This implies that the project continues to deliver long-term benefits to recipients after the departure of external funding contrary to observations made by Batkin (2001; Lau-Jorgensen and Van-Domelen, 1999). Table 46 also shows that relevance of the project to poverty reduction and project goal related to social needs are both significant at ($P < 0.05$) and ($P < 0.01$) levels respectively and they are positively related with project sustainability. These suggest that the likelihood of project sustainability is determined by its relevance on addressing recipients' poverty so as to meet their needs. Perhaps, recipients' needs assessment is a key factor at the inception of project implementation.

Table 46: Makete and Rungwe Districts: Instrumental variables (2SLS) regression of project sustainability

Variable	Coefficient	Std. Err.	z
Instrumented			
Participation	-0.189	0.122	-1.550
Instruments			
Makete	0.049	0.035	1.410
Project operation period	0.063	0.014	4.570***
Female household head	-0.005	0.029	-0.180
Beneficiary age	0.001	0.001	1.090
Marital status	0.057	0.030	1.890*
Education level	0.021	0.015	1.390
Relevance on poverty reduction	0.134	0.057	2.340**
Project goal on social needs	0.251	0.062	4.070***
Ability to meet Immediate needs	0.223	0.059	3.760***
Planning and implementation	-0.081	0.049	-1.660*
Gender issues	0.087	0.068	1.280
Project outputs	0.180	0.046	3.930***
Time of inputs delivery	0.025	0.042	0.580
Degree of participation	0.192	0.066	2.910***
Public works	0.067	0.045	1.480
Carpentry project	0.266	0.124	2.130**
Dairy cattle project	0.001	0.057	0.010
Poultry project	0.107	0.071	1.500
Environmental conservation.	0.021	0.057	0.380
Constant	-0.159	0.073	-2.190

Significance levels: *, ** and *** are $P < 0.1$, $P < 0.05$ and $P < 0.01$, respectively.

Also, the analysis result (Table 46) shows that the degree of participation, project outputs and project ability to meet immediate needs of target group(s) are significant at ($P < 0.01$) level and they are positively related with project sustainability. These suggest that recipients' involvement is motivated by the expected products or services from the project implementation which have a likelihood of addressing their short-term and long-term social needs thus enhancing project sustainability as defined by (Spath, 2004) in the literature. Probably, this is enhanced by transparency in project ownership, management, maintenance, and credibility (Kusek and Rist, 2004). In the same way, Shaheen *et al.* (2009) observed that sustainability of projects is achieved through participatory approach in development by involvement of beneficiaries at all stages.

It can be stated that, project operational time ever since inauguration has positive significant ($P < 0.01$) influence on project sustainability. This advocates that as time passes through participation participants appreciate benefits from the projects established as their livelihoods improve thus project ownership is imprinted. Similarly, Mubangizi (2009) observed that poverty alleviation projects are successful if they promote sustainable livelihoods. In conclusion, sustainability of assets created for poverty reduction is influenced by relevance, effectiveness, efficiency and operational time of the project since inception.

CHAPTER FIVE

5.0 CONCLUSIONS AND RECOMMENDATIONS

The general objective of the study was to assess the impact of community empowerment by TASAF on effective and efficient utilisation of livelihood assets created for poverty reduction in order to contribute to the methodological approaches and the understanding on the best way to intervene so as to maximize the impact on welfare. Specifically, the study intended to: (i) evaluate the impact of TASAF empowerment on socio-economic status of participants, (ii) assess the impact of TASAF intervention on food security and health status of beneficiaries, and (iii) examine the sustainability of productive assets created by TASAF for food insecure, service poor and vulnerable groups.

Stratified non random sampling technique was employed to obtain a representative sample for this study with minimal selection bias. A with and without TASAF intervention households sample of 354 respondents was collected in Makete and Rungwe districts. The study was conceptualized using the sustainable livelihood framework approach for analysis while vulnerability context was based on shocks, trends and seasonality that affected the livelihoods of the rural people. Both descriptive and quantitative techniques were used to analyze the cross sectional data using SPSS version 16 and STATA version 10 and Heckman's (1979) two-stage and IV/2SLS models were used to estimate the intervention effects.

5.1 Conclusions

The present study found that participation on productive assets created had positive influence on socio economic status of recipients. Thus it is concluded that inadequate provision of both health and reproductive services reduced socio-economic outcomes while formation of women associations and creation of sustainable sources of income

through involvements had positive influence on their livelihoods contrary to female headed household as it kept them away from other socio-economic activities.

Also, the present study analysis of the second objective showed that both participants and non participants had no difference in food security. However, it is concluded that variation in food security among recipients was attributed by differences in locations and resource endowment and that participation on assets created by recipients kept them away from other food resources. Also, it is concluded that food security of recipients depend on the nature of the project and participants involved. Moreover, it was found that participation had positive influence on health status of beneficiaries. Therefore it is concluded that health status of participants in poultry and public works were better-off than those in carpentry works and water projects while time of operation since the inception of the project and the degree of involvement in established productive assets had positive influence on recipients' health status. Thus, it is also concluded that variation in locations have effect on intervention outcomes of beneficiaries' health status. In addition, it is concluded that of all participants, HIV infected recipients were the most affected by participation followed by able-bodied and elders.

The analysis of third objective observed that participation had influence on assets sustainability. Therefore it is concluded that sustainability of assets created for poverty reduction was influenced by its relevance, effectiveness, efficiency, duration of operation and the nature of projects and recipients involved.

5.2 Recommendations

Based on the findings of the first objective, it is recommended that the government should enforce equitable provision of health and reproductive health services. Also, the

government should put into effect formation of women associations and sustainable sources of income that will enhance socio-economic activities so as to sustain their livelihoods and those recipients should prioritize on assets that improve their livelihoods.

Also, from the findings of the second objective, it is recommended that the government should enforce creation of assets which enhance food security and it should enforce training and regular visiting of recipients on prevention basis rather than coping strategies to contain food insecurity risk. Also, it is recommended that local government authorities should distribute and supervise project assets which enhance food security based on geographical location and beneficiaries should prioritize project assets that capitalize on farm inputs. Moreover, it is recommended that the government should enforce creation of assets through participation in which recipients should prioritize creating assets that have likelihood to sustain their health.

From the findings on the third objective, it is recommended that the government should enforce thorough involvement of participants in identifying assets relevant to them. Also, local government authorities should enforce projects sustainability through training, supervision and regular field exchange visits for long-term benefits with possibilities of scaling up so as to achieve its sustainance period and be credible for other assets. Thus, recipients should have a binding contract on assets so as to enhance livelihood sustainability subject to payback of assets handled over rather than being an income re-distribution.

In order to ascertain the viability of created assets, the author recommends an economic study analysis to be carried on so as to assess the opportunity cost of TASAF projects assets among other economic alternatives of resource use.

REFERENCES

- Abrar, N., Baloch, A. and Ghauri, A. (2010). Main attributes and features affecting juvenile delinquents: Evidence from Karchi, Pakistan. *European Journal Of Social Sciences*, 15(4):530-536.
- Abdullaev, I., Fraiture, C., Giordano, M., Yakubov, M. and Rasulov, A. (2009). Agricultural water use and trade in Uzbekistan: situation and potential impacts of market liberalization. *Journal of Water Resources Development*, 25(1):47-63.
- Adam, S. (2006). *Evaluating Social Funds*. Social Protection. World Bank. 76pp.
- Adams, J. (2001). *Non-governmental organizations and impact assessment*. NGO policy briefing paper for the sector analysis programme. 8pp.
- ADB (2006). *Impact evaluation methodological and operational issues*. Asian Development Bank (ADB). 39pp.
- Adeoti, A., Barry, B., Namara, R. and Kamara, A. (2009). The impacts of treadle pump irrigation technology adoption on poverty in Ghana. *Journal of Agricultural Education and Extension*, 15(4):357-369.
- African Development Bank Group (2006). *Review of Bank group assistance strategy to the agriculture and rural development sector*. Operations Evaluation Department, Tanzania. 78pp.

- Agba, M., Agba, O., Okoro, J. and Agba, G. (2010). Wealth and employment creation among women in Idah local government area of Kogi State, Nigeria. *Canadian Social Science*, 6(1):08-16.
- Ahmad, M.S. and Talib, N.B. (2010). Improvement of project sustainability by community participation: A case of Abbottabad district in Pakistan. *African Journal of Business Management*, 4(17): 3761-3768.
- Ahmed, N. (2009). The sustainable livelihood approach to the development of fish farming in rural Bangladesh. *Journal of International Farm Management*, 4(4). 18pp.
- Ahs, J., Tao, W., Löfgren, J. and Forsberg, B. (2010). Diarrhea diseases in low and middle income countries: Incidence, prevention, and management. *Open Infectious Disease Journal*, 4:113-124.
- Altman, M., Hart, T. and Jacobs, P. (2009). Household food security status in South Africa. *Agrekon*, 48(4):345-361.
- Anandajayasekeram, P., Martella, D. R. and Rukuni, M. (1996). *A training manual for Biological scientists on impact assessment of investment in agricultural resources research*. 230pp.
- Aruna, B. and Alabi, A. (2006). Technical efficiency of family poultry production in Nigeria- Delta, Nigeria. *Journal of Central European Agriculture*, 6(4):531-538.

Asgedom, A. (2007). *Village Poultry in Ethiopia*. Social technical analysis and learning farmers. Wageningen University, Netherlands. 192pp.

Ashley, C. and Hussein, K. (2000). *Developing methodologies for livelihood impact assessment: Experience of the African wildlife foundation in East Africa*. Overseas Development Institute. London, UK. 61pp.

Attanasio, O., Kugler, A. and Meghir, C. (2009). *Subsidizing vocational training for disadvantaged youth in developing countries: Evidence from a randomized trial*. 50pp.

Babatunde, R. and Adejobi, A. (2010). Income and calorie intake among farming households in Rural Nigeria: Results of Parametric and Nonparametric Analysis. *Journal of Agricultural Science*, 2(2):135-146.

Baker, J. (2000). *Evaluating the impact of development projects on poverty*. A handbook for practitioners. Directions in development. World Bank. Washington DC. 225pp.

Baker, J. (1999). *Evaluating the Poverty Impact of Projects: A handbook for practitioners*. World Bank. Washington DC. 85pp.

Bakhtiari, S. (2006). Microfinance and poverty reduction: Some international evidence. *International Business and Economics Research Journal*, 5(12). 7pp

Barbieri, C. and Mahoney, E. (2009). Why is diversification an attractive farm adjustment strategy? Insights from Texas farmers and ranchers. *Journal of Rural Studies*, 25(1): 58-66.

Barnes, C. and Sebstad, J. (2000). *Guideline for microfinance impact assessments*. Discussion paper. 75pp.

Batkin, A. (2001). *Social funds: Theoretical Background*. Social Protection in Asia and the Pacific. Asian Development Bank. 31pp.

Baur, H., Bosch, M., Krall, S., Kuby, T., Lobb-Rabe, A., Schrtz, P. and Springer – Heinze, A. (2001). *Establishing plausibility in impact assessment*. Assessing the impact of agricultural research in development. [<http://www.gtz.de/de/dokumente>]. Visited on 23/5/2012. 19pp.

Barnes, C. and Sebstad, J. (2000). *Guideline for microfinance impact assessments*. Management Systems International. *In*: Discussion paper for the consultative group to assist the poorest virtual meeting in October 18-29,1999. Washington DC. 75pp.

Bellamy, M. (2000). *Approaches to impact assessment in agricultural information management*. Technical Centre for Agricultural and Rural Cooperation. 36pp.

Block, J., Hoogerheide, L. and Thurik, R. (2009). *Education and entrepreneurial choice: An Instrumental Variables Analysis*. Tinbergen Institute Discussion Paper. 10pp.

- Blondal, N. (2007). *Evaluating the impact of Rural Roads in Nicaragua*. Ministry of Foreign Affairs of Denmark. DANIDA. 55pp.
- Blundell, R., Dearden, L. and Sianess, B. (2005). Evaluating the effect of education on earnings: Models, methods and results from the National Child Development Survey. *Journal of Royal Statistical Society*, 168(3): 473-512.
- Blundell, R. and Costa Dias, M. (2002). Alternative approaches to evaluate in empirical microeconomies. University College London and Institute for Fiscal Studies. 40pp.
- Bound, J., Jaeger, D. and Baker, R. (1995). Problems with instrumental variables estimation when the correlation between the instruments and the endogenous explanatory variable is weak. *Journal of the American Statistical Association*, 90(430): 443-450.
- Bourne, P. (2009). Good health status of older and oldest elderly in Jamaica: Are there differences between Rural and Urban Areas? *Open Geriatric Medicine journal*, 2:18-27.
- Bourne, P. and Rhule, J. (2009). Good health status of rural women in the reproductive ages. *International Journal of Collaborative Research on Internal Medicine and Public Health*, 1(5):132-155.

Brussard, L., Caron, P., Campbell, B., Lipper, L., Mainka, S., Rabbinge, R., Babin, D. and Pulleman, M. (2010). Reconciling Biodiversity Conservation and Food Security: Scientific Challenges for a New Agriculture. *Environmental Sustainability*, 2:34-42.

Bryman, A. and Cramer, D. (1997). *Quantitative data analysis with minitabs. A guide for Social Scientists*. London and New York. 288pp.

Burney, J., Woltering, L., Burke, M., Naylor, R. and Pasternak, D. (2010). Solar – powered drip irrigation enhances food security in the Sudano-Sahel. *Journal of Sustainability Science*, 107(5):1848-1853.

Cameron, A.C. and Trivedi, P.K. (2005). *Microeconometrics methods and applications*. Cambridge University Press. 1058pp.

CARE (2005). Women's empowerment.

[<http://www.care.org/newsroom/publications/whitepapers/woman.pdf>]. Visited on 23/5/2012. 14pp.

Carswell, S, Hanlon, T., O'Grady, K., Watts, A. and Pothong, B. (2009). A Preventive intervention program for urban African Americans Youth attending an Alternative Education Program: Background, Implementation, and Feasibility. *Education Treat Children*, 32(3):445-469.

Catley, A. (1999). *Monitoring and impact assessment of community based animal health projects in Southern Sudan towards participatory approaches and methods.* Sudan. 56pp.

Chambers, R. and Conway, G. (1991). *Sustainable rural livelihoods: Practical concepts for the 21st century.* Institute of development studies, discussion paper 296. 33pp.

Charles, H. and Godfray, J. (2010). Food security: The challenge of feeding nine billion people. *Science*, 327:812-818.

Church, K. and Mayhew, S. (2009). Integration of STI and HIV Prevention, Care, and Treatment into Family planning Services. *Studies in Family Planning*, 40(3):171-186.

Clay, E. (2002). Food Security: Concepts and measurement. In: *Paper for FAO Expert Consultation on Trade and Food Security.* Rome, 11-12 July 2002.8pp.

Cohen, M. and Piquero, A. (2009). New evidence on the monetary value of saving a high risk youth. *Journal of Quart Criminal*, 25:25-49.

Cole, R. (2010). Social and environmental impacts of payments for environmental services for agroforestry on small-scale farms in Southern Costa Rica. *International Journal of Sustainable Development and World Ecology*, 17(3):208-216.

Cherry, T., Kroll, S. and Shogren, J. (2005). The impact of endowment heterogeneity and origin on public good contributions Evidence from the lab. *Journal of Economic Behaviour and Organization*, 57: 357-365.

Chovwen, A., Orebiyi, O., Savadogo, A., Afere, T. and Afolayan (2009). *Ikarama _ Ibaran Millenium Village Project*, Ondo state, Nigeria. 8pp.

Conway, T., and Haan, A. and Norton, A. (2000). *Social protection: New directions of donor agencies.* [<http://www.odi.org.uk/resources/docs/2233.pdf>] Visited on 23/5/2012. 89pp.

Creevey, L. and DAI (2008). *Common problems in impact assessment research.* Impact assessment primer series number 7. Private Sector Development Impact Assessment. Assessment initiative. USAID. 11pp.

Crowe, J. and Smith, J. (2012). Community's capacity to respond to food insecurity. *Journal of Community Development*, 43(2): 169-186.

DANIDA (2008). *Impact evaluation of aquaculture interventions in Bangladesh.* Ministry of Foreign Affairs of Denmark. Management Services. 96pp.

Davis, B., Winters, P., Carletto, G., Covarrubias, K., Quinones, E, Zezza, A. Stamoulis, K., Azzarri, C. and DisGiuseppe, S. (2009). A cross- country comparison of rural income generating activities. *Journal of World Development*, 38(1):48-63.

- Del-Ninno, C., Subbarao, K. and Milazzo, A. (2009). *How to make public works work: A Review of the Experiences*. Social Protection and Labour. World Bank. 93pp.
- Dercon, S., Gilligan, D., Hoddinott, J. and Woldehanna, T. (2008). *The Impact of Agricultural Extension and Roads on Poverty and Consumption Growth in Fifteen Ethiopian Villages*. International Food Policy Research Institute (IFPRI) discussion paper 00840. 28pp.
- De Silva, S. and Sum, J. (2008). *Social funds as an instrument of social protection: An analysis of lending trends*. Discussion paper, No. 0809. Social Protection and Labour Unit. World Bank. 50pp.
- DFID (1999). *Sustainable livelihoods guidance sheets*.
[\[http://www.enonline.net/pool/files/ife/dfid-sustainable-livelihood\]](http://www.enonline.net/pool/files/ife/dfid-sustainable-livelihood). Visted on 23/5/2012. 10pp.
- Dinker, H., Challa, R., Dawo, F., Bekana, E. and Leta, S. (2010). Major Constraints and Health Management of Village Poultry Production in Rift Valley of Oromia, Ethiopia: *American-Eurasian Journal of Agriculture and Environment Science*, 9(5):529-533.
- Doan, T. and Gibson, J. (2009). *Do returns to schooling go up during transition? The Not so contrary case of Vietnam*. Working paper in economics, 08/09. 18pp.

Dolisca, F., McDaniel, J., Shannon, D. and Jolly, C. (2008). Modeling farm households for estimating the efficiency of policy instruments on sustainable land use in Haiti. *Journal of Land Use Policy*, 26:130-138.

Dontsop, N., Diagne, A., Okurwa, V. and Ojehomon, V. (2011). Impact of improved rice technology on income and poverty among rice farming household in Nigeria: A local average treatment effect approach: In: *paper for the 25th conference of the centre for the studies of African economies (CSAE)*, St Catherine College, University of Oxford 22-22 March, 2011. 31pp.

Dubin, J.A. (1990). Selection bias in linear regression, Logit and Tobit models. *Sociological Methods and Research*, 18(3):360-390.

Edun, A. (2000). The role of evaluation in accountability in donor funded projects. *Journal of IDS Bulletin* 31(1):48-52.

Environmental health directorate (2007). Health impact assessment. Western Australia. 58pp.

Erensein, O., Hellin, J. and Chandna, P. (2007). *Livelihoods, poverty and targeting in the Indo-Gangetic Plains*. A spatial mapping approach. A CIMMYT and RWC Research Report. New Delhi, India. 56pp.

Erhabour, P. and Ojogho, O. (2011). Effect of quality on the demand for rice in Nigeria. *Agricultural Journal*, 6(5):207-212.

Fakinola, L. and George, O. (2008). Small-scale family poultry production as a substantial source of animal protein in selected local government areas in Rivers State. *Journal of Agriculture and Social Research*, 8(2):114-118.

FAO (2008). *Nutrition Country Profile*, Tanzania.

[<ftp://ftp.fao.org/ag/agn/nutrition/ncp/tza.pdf>]. Visted on 23/5/2012. 48pp.

FAO (2000). Impact assessment of agricultural research: In: *Workshop on Impact Assessment of Agricultural Research in Eastern and Central Africa in Uganda*. November, 1999. 46pp.

Fernandez-Covnejo, J., Mishra, A., Nehring, R., Hendricks, C., Southern, M. and Gregory, A. (2007). Off-farm income, technology adoption and farm economic performance. Economic research service report number 36. Department of Agriculture, United States. 7pp.

Florens, J., Heckman, J., Meghir, C. and Vytlacil, E. (2008). Identification of treatment effects using control functions in models with continuous, endogenous treatment and heterogeneous effects. *Journal of the Econometric Society*, 76(5):1191-1206.

Frankenberger, T. R., Drinkwater, M. and Maxwell, D. (2000). *Operationalizing Household Livelihood Security: A holistic approach for addressing Poverty and Vulnerability*. CARE, Georgia. 34pp.

Friel, S. and Baker, P. (2009). Equity, food security and health equity in the Asia Pacific Region. *Asia Pacific Journal of Clinic Nutrition*, 18(4):620-632.

- Garbarino, S. and Holland, J. (2009). *Quantitative and qualitative methods in impact evaluation and measuring results*. Governance and Social Development Resource Centre. 51pp.
- Gedamu, A. (2006). Food for work program and its implications on food security: A critical review with a practical example from the Amhara region, Ethiopia. *Journal of Agriculture and Rural Development in the Tropics and Subtropics*, 107(2):177-188.
- Godfray, H., Bedington, J., Crute, I., Haddad, L., Lawrence, D., Muir, J., Pretty, J., Robison, S., Thomas, S. and Toulmin, C. (2010). Food Security: The Challenge of Feeding 9 billion people. *Journal of Science*, 327:812-818.
- Greenstone, M. and Gayer, T. (2007). *Quasi experimental and experimental approaches to environmental economics*. The frontiers of Environmental Economies. Discussion paper. Washington, DC. 60pp.
- Grossman, M. (2005). *The impact challenge: Conducting impact assessments for the EMPRETEC programme*. Oxford University. 21pp.
- Gue'ye, E. (2009). *Small scale poultry production: The role of networks in information dissemination to family poultry farmers*. *World's Poultry Science Journal*. 65:115-124.
- Gujarati, D.N. (2004). *Basic econometrics*. Fourth edition. McGraw Hill companies. 1004pp.

- Guntoro, B. (2010). Community Development plan: Rural Livestock, Agriculture, and Livelihood in Indonesia. *Journal for Geography*, 5(2):109-119.
- Haidar, M. (2009). *Sustainable livelihood approach*. The framework, lessons learnt From practice and policy recommendations. In: *expert group meeting on adopting the sustainable livelihoods approach for promoting Rural Development in the Economic and Social Commission for Western Asia*. Beirut. 18pp.
- Hair, J., Black, W., Babin, B., Anderson, R. and Tathan, R. (2006). *Multivariate Data Analysis*. Pearson Prentice, sixth edition. 899pp.
- Hashim, F., Alam, G. and Siraj, S. (2010). Information and communication technology for participatory based decision-making e-management for administrative efficiency in Higher Education. *International Journal of Physical Sciences*, 5(4):383-392.
- HBS (2000). Household Budget Survey in Tanzania. Presidents' office. Planning and Privatization. Dar es Salaam. 24pp.
- Heckman, J. (2001). Micro data, heterogeneity and the evaluation of public policy: Nobel lecture. *Journal of Political Economy*, 109(4):673-745.
- Heckman, J. (1979). Sample selection bias as a specification error. *Econometrica*, 47(1):153-161.

Holmes, R., Jones, N. and Marsden, H. (2009). *Gender vulnerability, food price shocks and social protection responses*. Overseas Development Institute. 12pp.

Hoetker, G. (2007). The use of logit and probit models in strategic management research: Critical Issues. *Strategic Management Journal*, 28:331-343.

Hossain, A. (2010). Youth problems, their development and empowerment in Bangladesh. *Antrocom*, 6(1):65-77.

Hulme, D. (2000). *Impact assessment methodologies for microfinance: Theory, experience and better practice*. University of Manchester. 34pp.

Husain, Z., Mukerjee, D. and Dutta, M. (2009). *Self help groups and empowerment of women: Self-selection or actual benefits?* Delhi, India. 31pp.

IDA (2008). *Rural roads: Linking people to markets and services*. Available at <http://siteresources.worldbank.org/IDA/Resources/IDA-Transport.pdf>. 9pp.

International Federation of Red Cross (2007). *Sustainable livelihood approach*. Provention Consortium. Geneva, Switzerland. 11pp.

Ignatowski, C., Rodrigues, C. and Balastino, R. (2006). *Youth assistance in Angola*. USAID. [<http://www.usaid.gov/ao/youthassessment.pdf>]. Visted on 23/5/2012. 59pp.

- Ike, P. and Ugwumba, C. (2010). Profitability of small scale broiler production in Onitsha north local government area of Anambra State, Nigeria. *International Journal of Poultry Science*, 10(2):106-109.
- ILO (1997). *Guidelines for the preparation of independent evaluations of ILO programmes and projects*. Evaluation Unit, Bureau of Programming and Management. 8pp.
- Imoro, B. and Nti, K. (2009). Sustainable vocational skills development for poverty reduction in Northern Ghana. *Journal of Sustainable Development in Africa*, 10(4):250-267.
- Islam, S., Takashi, S. and Chhabi, K. (2010). Current scenario of the small-scale broiler farming in Bangladesh: Potentials for the future projection. *International Journal of Poultry Science*, 9(5):440-445.
- Ito, T. and Kurosaki, T. (2007). *Weather risk, in kind, and the off-farm labour supply of agricultural households in developing country*. Hitotsubashi University. Working paper series 226. 34pp.
- Jamali, M., Shah, S., Shah, A., Shafique, K. and Shaikh, F. (2011). Impact Analysis of Public Sector and NGOs to Improvement of Rural Livelihoods in Sindh, Pakistan. *International Journal of Business and Management*, 6(2):236-247.

- Janvary, A. and Sadoulet, E. (2001). Income strategies among rural households in Mexico. The role of off-farm activities. *Journal of World Development*, 29(3): 467-480.
- Juana, J. and Mabugu, R. (2010). Assessment of small-holder agriculture's contribution to the economy of Zimbabwe: *A Social Accounting Matrix Multiplier Analysis*, 44(3):344 -362.
- Kammersgaard, J. (1999). *Causalities between social capital and social funds. Labor Markets, Pensions, Social Assistance*. World Bank discussion paper number 9908. 48pp.
- Kaseke, E. (1997). Social security in Eastern and Southern Africa: Organization, issues and concepts in modern and traditional arrangements. *Journal of Social Development in Africa*, 12(2):39- 47.
- Kellogg, W. K. Foundation (2004). *Logic model development guide*. Using logic models to bring together planning, evaluation and action. 71pp.
- Khalidi, S. M. and Temu, A. E. (2009). Assessing the influence of socio economic characteristics of farm household in acces to formal credit in Zanzibar. *Eastern and Southern Africa Journal of Agricultural Economics and Development*. 6:50-71.
- King, E. and Samii, C. (2009). *International initiative for impact evaluation*. Interventions to promote social cohesion in Sub-Saharan Africa. Columbia University, New York. 14pp.

Kiiru, J. (2010). *Remittances and Poverty in Kenya*.

[<http://erd.eui.eu/media/2010/Kiiru>]. Visted on 23/5/2012. 22pp.

Kingori, A., Wachira, A. and Tuitoek, J. (2010). Indigenous chicken production in Kenya. *International Journal of Poultry Science*, 9(4):309-316.

Koçturk, O. (2009). A case of increasing income of dairy cattle in rural area in Western part of Turkey. *Journal of Animal and Veterinary Advances*, 8(9):1685-1688.

Kombe, W. and Limbumba, T. (2008). *Rural-Urban migration and urban land governance: The case of Dar es Salaam, Tanzania. In: Metropolis Conference, Bonn*. 11pp.

Kollmair, M. and Juli, G. (2002). A sustainable livelihood approaches. In: *paper for integrated training course of NCCR North-South Aeschiried*, Switzerland, 9-20, September 2002.

Kothari, C. (2004). *Research methodology. Methods and techniques*, second edition. New Age International (P) Limited. New Delhi, India. 401pp.

Kuby, T., Van-de Fliert, E. and Schutz, S. (2003). Impact pathway evaluations: An approach for achieving and attributing impact in complex systems. *Agricultural Systems*, 78: 243-265.

Kusek, J. and Rist, R. (2004). *Results based monitoring and evaluation system*.

World Bank. 264pp.

Kutsch, E. and Hall, M. (2010). Deliberate ignorance in project risk management.

International Journal of Project Management, 28(3):245-255.

Krantz, L. (2001). *The sustainable livelihood approach to poverty reduction*.

Division for Policy and Socio-economic Analysis. SIDA. 44pp.

Larcker, D. F. and Rusticus, T. O. (2004). On the use of instrumental variables in

accounting research. University of Pennsylvania. 49pp.

Lau-Jorgensen, S. and Van-Domelen, J. (1999). *Helping the poor manage risk*

better: The role of social funds. Social protection discussion paper series

number 9934. World Bank. 26pp.

La Rovere, R. and Dixon, J. (2007). *Operational guidelines for accessing the*

impact of agricultural research on livelihoods. Impacts targeting and

Assessment Unit. Mexico. 103pp.

Layfield, K. and Flagg, S. (2004). The impact of service learning: A quasi experimental

assessment of student performance in an introductory microcomputer

course. *Journal of Southern Agricultural Research*, 54(1):147-155.

Lecy, J. (2010). New approaches to evaluation: Comparative impact assessment.

Journal of Civil Society and Social Transformation. 1:26-37.

Lenneiye, N. (2006). *The Tanzania social action fund: Owning the process of measuring impact*. 4pp.

Lenneiye, N. (2005). *Who has the yam and who has the knife? Social action funds and decentralization in Malawi, Tanzania, and Uganda*. Social protection unit. Human development network. World Bank. Social protection discussion paper number 518. 88pp.

Lombard, P. and Coetzer, L. (2007). *The estimation of the impact of rural roads investments on socio economic development*. 14pp.

Ludi, E. (2009). *Climate change, water and food security*.
[<http://www.odi.org.uk/resources/docs/4116.pdf>]. Visited on 23/5/2012. 18pp.

Lukuyu, B., Kitalyi, A., Franzel, S., Duncan, A. and Baltenweek, I. (2009).
Constraints and options to enhancing production of high quality feed in dairy production in Kenya, Uganda, and Rwanda. Working paper. 34pp.

Lund-Thomsen, P. (2007). *Assessing the impact of the public private partnerships in the Global South: The Case of the Kasur Tanneries*. Pollution control project. United Nations. 40pp.

Lee, D. (2008). Randomized experiments from non-random selection in U.S. House Elections. *Journal of Econometrics*, 142:675-697.

- Manyong, V. and Gerken, A. (2009). *Promoting regional trade to reduce food security: A case study on the boarder region of Tanzania and Zambia*. Berlin and Dar es Salaam. GTZ, IITA and SLE. 134pp.
- McDermott, J., Staal, S., Freeman, H., Herrero, M. and Van de Steeg, J. (2010). *Sustaining intensification of smallholder livestock systems in the tropics*. Livestock Science, 30:15pp.
- Melesse, K. and Beyene, F. (2009). Consumption pattern of milk products in Ada'a woreda, East Shoa zone central Ethiopia. 14pp.
- Mittal, S., Gandhi, S. and Tripathi, G. (2010). *Socio-economic impact of mobile phones on Indian Agriculture*. Working paper number 246. 53pp.
- Mngodo, J. (2008). Bioenergy and food security. In: *Second FAO Technical Consultation on Bioenergy of Food Security*. Rome, 5 -6 February, 2008. 19pp.
- Moreki, J. Dickem, R. and Poroga, B. (2010). *The Role of Village Poultry in Food Security and HIV/AIDS Mitigation in Chobe District of Botswana*. 9pp.
- Mozumdar, L., Farid, K., Ahmed, J. and Rahman, M. (2009). Broiler farming: An approach to improve livelihood. *Journal of Bangladesh Agricultural University*, 7(2):395-402.

- Momba, M., Tyafa, Z., Makal, N., Broukaert, B., and Obi, C. (2009). Safe drinking water still a dream in Rural Areas of South Africa. Case Study: The Eastern Cape Province. *Water South Africa*, 32(5): 715-720.
- Mubangizi, B. (2009). Poverty alleviation and service delivery: Developing a conceptual framework for South Africa's service delivery system. *International NGO Journal*, 4(10):446-455.
- Mugenda, O. and Mugenda, A. (2003). *Research Methods. Quantitative and qualitative approaches*. African centre for technology studies. Nairobi, Kenya. 256pp.
- Musamali, B., Walingo, M. and Mbagaya, G. (2007). Impact of school lunch programmes on nutritional status of children in Vihiga District, Western Kenya. *African Journal of Food Agriculture Nutrition and Development*, 7(6). 14pp.
- Muto, M. (2008). *Impacts of mobile phone coverage expansion on market participation: Panel data evidence from Uganda*. Japan Bank for International Cooperative. 38pp.
- Narcisse, K. (2010). *Water Security and the Poor: Evidence from Rural Areas in Côte d'Ivoire*. 24pp.
- Nazir, Z., Bastian, G., Wang, X., Armenta, G., Thompson, C. and Stone, C. (2010). *Food Security in Tanzania: Seven Original Concept Papers*. 78pp.

NBS. (2009). Household Budget Survey 2007. Tanzania Mainland.

[www.nbs.go.tz/tnada/index.php/ddibrowser/2/download/39]. Visited on 23/5/2012. 111pp.

Nega, F., Mathijs, E., Deckers, J., Haile, M., Nyssen, J. and Tallens, E. (2010). Rural Poverty Dynamics and Impact of Intervention Programs up on Chronic and Transitory Poverty in Northern Ethiopia. *African Development Review*, 22(1):92-114.

Newman, J. (2002). Impact evaluation of social funds: An impact evaluation of education, Health and water supply investments by the Bolivian Social Investment Fund. *Journal of the World Bank Economic Review* 16(2): 241-274.

Ngasongwa, J. (1988). *Evaluation of externally funded regions integration development programmes* (RIDEPs). University of East Anglia. Norwich, United Kingdom. 502pp.

Norton, A., Conway, T. and Foster, M. (2001). *Social protection concepts and approaches*: Implications for policy and practice in International development. Overseas Development Institute, London. 76pp.

Norton, A. and Foster, M. (2001). *The potential of using sustainable livelihoods approaches in poverty reduction strategy papers*. Working paper 148. 44pp.

- Ochieng, G. (2002). *Socioeconomic impact of assessment of rural roads*. Methodology and questionnaires. 92pp.
- Olwedo, M., Mworosi, E., Bachou, H. and Orach, C. (2008). Factors associated with malnutrition among children in internally displaced person's camps, Northern Uganda. *African Health Sciences*, 8(4):244-252.
- Panda, D. (2009). Participation in the group based microfinance and its impact on rural households: A quasi-experimental evidence from an Indian State. *Global Journal of Finance and Management*, 1(2):171-183.
- Pattanayak, S. (2009). *Rough guide to impact evaluation of environmental and development programs*. South Asia Network for development and environmental economics. Duke University. Kathmandu, Nepal. Working paper number 40-09. 42pp.
- Parveen, J.A. (2009). Sustainability issues of interest free micro-finance institutions in rural development and poverty alleviation. *Bangladesh Perspective*, 2(11):112-133.
- Pinstrup - Andersen, P. (2009). Food security: definition and measurement. *Journal of Food Security*, 1:5-7pp.

- Place, F., Roothaert, R., Maina, L. Fracel, S., Sinja, J. and Wanjiku, J. (2009). The impact of fodder trees on milk production and income among smallholder dairy farmers in East Africa and the Role of Research. In: *ICRAF occasional paper No 12*. World Agro-Forestry Centre. Nairobi, Kenya. 55pp.
- Poon, W. and Chan, K. (2010). *Solicited and unsolicited credit ratings: A global perspective*. Asian Development Bank Institute. 26pp.
- Power, R. and Riddell, M. (1998). *Quasi – experimental evaluation*. Evaluation and Data Development Strategy Policy. Canada. 40pp.
- Py-Smith, C. (2010). *How agroforestry is helping to transform the lives of smallholder dairy farmers in East Africa*. World Agro-Forestry Centre, Nairobi Kenya. 44pp.
- Ramdas, S. (2009). Reclaiming endangered livelihoods: Untold stories of indigenous women and back yard poultry. *Worlds' Poultry Science Journal*, 65:241-250.
- Randler, C. and Bogner, F. (2008). Planning experiments in science education research Comparison of a quasi-experimental approach with a matched pair tandem design. University of Leipzig, German. *International Journal of Environmental and Science Education*, 3(3):95-103.
- Rao, V. (2002). *The Social Impact of Social Fund in Jamaica: A mixed methods of participation, targeting and collective action in community driven development*. Washington. 40pp.

Rawlings, L., Bersley, G.M. and Burgess (2003). *Evaluating social funds: A cross-country analysis of community investments*. Regional and Sectoral Studies. World Bank, Washington, DC. 64pp.

Rios, A. and Pagiola, S. (2009). *Poor household participation in payments for environmental services in Nicaragua and Colombia*. 28pp.

Rob de Loë, Varghese, J., Ferreyra, C. and Kreutzwiser, R. (2007). Water allocation and water security in Canada: Initiating a policy dialogue for the 21st century. In: *prepared for the Walter and Duncan Gordon Foundation*. 84pp.

Rocha, R. and Soares, R. (2009). *Evaluating the impact of community based health interventions*. Evidence from Brazil's family health program. Germany. 60pp.

Roche, C. (2010). *Participatory Impact Assessment Workshop*. Oxfarm, Australia. 37pp.

Rogers, P.J. (2008). Using program theory to evaluate complicated and complex aspects of intervention. Australia. *Evaluation*, 14(1):29-48.

Rosegrant, M., Ringler, C. and Zhu, T. (2009). *Water for Agriculture: Maintaining Food Security under growing scarcity*, 34: 205-222.

Rosssem and Meckers, D. (2007). *The reach and impact of social marketing and reproductive health communication campaigns in Zambia*. BioMed Ltd, Zambia. 33pp.

Rovere, R., Marthema, S., Dixon, J., Aquino - Mecardo, P., Gurung, K., Hodson, D. and Flores, D. (2008). *Economic and livelihood impacts of maize research in hill regions, Mexico and Nepal*. 33pp.

Royal Tropical Institute (2011). *From sorghum to shrimp: A Journey through commodity projects*. KIT Publishers, Netherlands. 150pp.

Roy, A. (1951). Some thoughts on the distribution of earnings. Oxford economic papers, *New Series*, 3(2):135-146.

Rubin, D. (1974). Estimating causal effects of treatments in randomized and non – randomized studies. *Journal of Educational Psychology*, 66(5):688-701.

Rungwe District Council (2009). *District Investment Profile*. 36pp.

Ryan, A., Spash, C. and Measham, T. (2009). *Household water collection in Canberra*. Socio-economics and environment in discussion paper. 29pp.

Sajeev, M. and Singha, A. (2010). Capacity building through Krishi Vigyan Kendras: Training analysis of farmers of Arunachal Pradesh. *Journal of Extension Education*, 10(1):83-90.

- Sarries, A. and Raspsomanikis, G. (2009). *Agricultural food commodity markets and vulnerability of African economies*. Food and Agriculture Organization (FAO). 50pp.
- Scoones, I. (2009). Livelihoods and Rural Development. *Journal of Peasant Studies*, 36(1). 26pp.
- Scoones, I. (1998). *Sustainable rural livelihoods: A framework for analysis*. Working paper 72. Institute of Development Studies, 22pp.
- Sebstad, J. (1998). *Assessing the impact of microfinance services towards guidelines for lower cost impact assessment methodologies for micro-enterprise programs*. In: *Discussion paper the second virtual meeting of the CGAP working group on LA methodologies*. Washington, DC. 53pp.
- Shaheen, F.A., Joshi, P.K. and Wami, S. P. (2009). *Watershed Development in Northeast India: Impacts, opportunities, and problems*. Global theme on agroecosystems. Report number 55. 31pp.
- Sieber, N. (1996). *The economic impact of park donkeys in Makete, Tanzania*. International Forum for rural transport and development, London. 118 – 121pp.
- Sindhar, D. (2008). *Linkages between Nutrition, ill –health and education*. Overcoming inequality: why government matters. UNESCO. 18pp.

- Simester, D., Hauser, J., Wernerfelt, B. and Rust, R. (2000). Implementing quality improvement programmes designed to enhance customer satisfaction: Quasi-experiments in the United States and Spain. *Journal of Marketing Research*. 37:102-112.
- Smith, D. (2010). Health and the food crisis in developing countries. *Traditional Herbal Research Clinic*, 5(1):56pp.
- Sims, K. (2010). *Conservation and Development: Evidence from Thailand Projected Areas*. 45pp.
- Snetro - Plewman, G., Tapia, M., Uccellani, V., Brasington, A. and McNulty, M. (2007). Taking community empowerment to scale: Lessons from three successful experiences. Health Communication Partnership. USAID. 44pp.
- Sobel, R. and Osoba, B. (2008). *Youth gangs as pseudo –governments: Implications for violent crime*. 39pp.
- Spath, B. (2004). *Current state of the art in impact assessment: with special view on small enterprise development*. Switzerland. 40pp.
- Spitz, A. (2004). *Using methodology of treatment evaluation to estimate the wage effect of IT usage*. Discussion paper, No. 04 – 67. 38pp.
- Stocks, J. H. and Watson, M. W. (2003). *Introduction to econometrics*. Pearson International edition. Second edition. 798pp.

- Studenmund, A. (2000). *Using Econometrics: A practical guide*. Fourth edition. Addison Wesley Longman. 639pp.
- Swai, E. S., Karimuribo, E. D. and Kambarage, D. M. (2010). Risk factors for smallholder dairy cattle mortality in Tanzania. *Journal of South African Veterinary Association*. 8(4):241-246.
- Swan, R. (2004). *Is microfinance a good poverty alleviation strategy?* Evidence from impact assessment. Making financial markets work for the poor. SIDA. 38pp.
- Tanga, P.T. and Maliehe (2011). Analysis of community participation in handicraft projects in Lesotho. *Journal of Anthropologist*, 13(3):201-210.
- TASAF II (2005). *Operational manual*. Government project preparation team. Dar es Salaam, Tanzania. 81pp.
- TASAF II (2006a). *Quarterly Report*. TASAF management team. Dar es Salaam, Tanzania. 30pp.
- TASAF II (2006b). *Annual report*. TASAF management unit. Dar es Salaam, Tanzania. 39pp.
- TASAF II (2007a). *Third Quarter Progress Report*. TASAF Management Unit. Dar es Salaam, Tanzania. 48pp.

TASAF II (2007b). *Fourth Quarter Progress Report*. Project Implementation Progress. Dar es Salaam, Tanzania. 54pp.

Taylor, L. and Blair-Stevens, C. (2002). *Introducing health impact assessment: informing the decision-making process*. Health development agency, London, UK. 23pp.

Theresa, E. and Amarauche, C. (2011). Prevalence of malaria and diarrhea children under five years in two tertiary hospitals. *West African Journal of Pharmacy*, 22(1):102-113.

Ugwu, D. (2009). Socio-economic impact of HIV/AIDS on farm women in Nigeria: Evidence from Enugu State. *World Applied Sciences Journal*, 6(12):1617-1624.

UN (2010). *Action for Youth*. Economic and Social Affairs. New York. 45pp.

Upret, D., Regmni, P., Pant, P. and Simkhada, P. (2009). Young peoples' knowledge, attitude, and behaviour on STI /HIV/AIDS in the context of Nepal: A systematic review. *Medical Journal*, 7(4): 383 – 391.

UNESCO (2007). *Evaluation Handbook*. Internal oversight service evaluation section. 20pp.

UNPFA (2004). *Programme managers' planning monitoring and evaluation toolkit*.

[<http://www.unfpa.org/monitoring/toolkit/tool.pdf>]. Visited on 23/5/2012. 13pp.

Untied, G. (2009). Impact analysis and counterfactuals in practice: The case of structural funds support for enterprise. *In: improving evaluation methods, 6th conference of evaluation of cohesion policy*. Warsaw, Poland. 19pp

URT (2010). *National strategy for growth and reduction of poverty (NSGRP II)*. Ministry of Finance and Economic Affairs. 184pp.

URT (2009). *Poverty and Human Development Report*. Mkukuta monitoring system. Ministry of Finance and Economic Affairs. Dar es Salaam, Tanzania. 220pp.

URT (2008). *Makete District Socio-economic Profile*. Ministry of Finance and Economic Affairs, National Bureau of Statistics and Makete District. United Nations Children's Funds. 165pp.

URT (2006a). *Infant and Child Mortality Report*. Ministry of Planning, Economy and Empowerment. National Bureau of Statistics, Volume IX. 92pp.

URT(2006b). *Population, reproductive health and development*. Population Planning Section. Ministry of Planning, Economy and Empowerment. Dar es Salaam, Tanzania. 72pp.

URT (2005a). *National Strategy for Growth and Reduction of Poverty* (NSGRP).

Vice Presidents' Office, Dar es Salaam. 80pp.

URT (2005b). *Demographic and health survey 2004-2005*. National Bureau of

Statistics, Dar es Salaam. 381pp.

URT (2003). *Mbeya Region Socio-economic Profile*. National Bureau of Statistics and

Mbeya Regional Commissioner's Office. Second edition. 176pp.

URT (2002). *Tanzania participatory poverty assessment*. Mwami village, Singida.

Economic research foundation. 35pp.

URT (2001a) *Poverty Monitoring Master Plan*. Dar es Salaam, Tanzania. 80pp.

URT (2001b). *Rural Development Strategy*. Vice Presidents' Office. Dar es

Salaam, Tanzania. 84pp.

URT (2000a). *Poverty Reduction Strategy Paper* (PRSP). Dar es Salaam. 63pp.

URT (2000b). *The Tanzania Development Vision 2025*. Dar es Salaam, Tanzania.

31pp.

Vaessen, J. (2009). *Impact of micro-credit*. International Initiative for Impact

Evaluation (3ie). Maastricht University, Metajuridica. Netherlands. 12pp.

- Walton, O. (2010). *Youth, armed violence and job creation programmes*. A rapid mapping study, Noregian Peace Building Centre. 27pp.
- Wassenich, P. and Whiteside, K. (2004). *CDD impact assessment study: Optimizing evaluation design under constraints*. Community driven development. Social Development Papers, Number 51. 110pp.
- Wen, L., Flood, V., Simpson, J., Rissel, C. and Baur, L.(2010). *International Journal of Behavioural Nutrition and Physical Activity*, 7(13):7.
- Weissman, J (2001). *Review of Social Investment Fund Operations Manuals*. Social Protection Team. Human Development Network; World Bank. 48pp.
- Weiser, S., Bangsberg, D., Kegeles, S., Ragland, K., Kushel, M. and Frongillo, E. (2009). Food insecurity among homeless and marginally housed individuals living with HIV/AIDS in San Francisco. *Aids Behaviour*, 13: 841-848.
- Wichimsky, L., Thomhson, B. and Rennell, J. (2012). Exploring organizational culture and climate in community coalitions. *Journal of Development Community*, 43(2):133-146.
- Wiser, S., Tuller, D., Frongillo, E., Senkungu, J., Mukiibi, N. and Bangsberg, D. (2010). Food Insecurity as a Barrier to Sustained Antiretroviral Therapy Adherence in Uganda. *PLoS ONE* 5(4): 8pp.

- Wetengere, K. (2009). Socioeconomic factors critical for adoption of fish farming technology: the case of selected villages in Eastern Tanzania. *International Journal of Fisheries and Agriculture*. 1(3): 028-037.
- White, H. (2009). *Theory based impact evaluation*. Principles and Practice. Working paper. 21pp.
- White, S. (2009). *Well-being in Developing Countries*. Analyzing wellbeing: A Framework or Development practice. Working paper 09/44. 21pp.
- Whittington, D., Davis, J., Prokopy, L., Komives, K., Thorsten, R., Lukacs, H., Bakalian, A. and Wakeman, W. (2009). How well is the demand driven, community management model for rural water supply systems doing? Evidence from Bolivia, Peru, and Ghana. *Water Policy*, 11:696-718.
- Winters, P., Davis, B. and Carletto, G. (2009). Assets, activities, and rural income generation: Evidence from a multi-country analysis. *World Development* 37(9):1435-1452.
- Wooldridge, J.M. (2004). *Introductory Econometrics*. A modern approach, second edition. 819pp.
- Wooldridge, J.M. (2001). *Econometric analysis of cross section and panel data*. MIT press. 753pp.

- World Bank (2006). *The Tanzania Social Action Fund (TASAF)*. Owning the process of measuring impact and achievement results. 4pp.
- World Bank (2003a). *Users' guide to poverty and social impact analysis*. Poverty Reduction Group And Social Development. Washington. 98pp.
- World Bank (2003b). *The Millennium Development Goals: The contribution of social protection to the millennium development goals*. Social protection. World Bank. 37pp.
- World Bank (2001). *Early Child Development*. Impact of pre- schools. Brazil. 65pp.
- Yigitcanlar, T. and Baum, S. (2009). *Providing youth with skills, training, and Employment Opportunities through ICT Initiatives*. Brisbane Australia. 41pp.
- Zerfu, D. and Larson, D. (2011). *Incomplete Markets and Fertilizer Use: Evidence from Ethiopia*. Addis Ababa University. 31pp.

APPENDICES

Appendix 1: Instruments used for data collection

Appendix 1.1: Questionnaire to the households

Introductory remarks

This questionnaire intends to gather information that will facilitate a livelihood impact assessment of TASAF intervention in agriculture and basic health services in Makete and Rungwe districts for PhD award of Mr. Asheri M. Mwidege of Sokoine University of Agriculture. Any information that will be volunteered will be used purely for academic purposes and the confidentiality of the participants will not whatsoever be disclosed. However, the results of the evaluation may be made available to other institutions and individuals.

To be filled by the enumerator only.

A: Background information

Enumerator's name	Village	Ward	Division	District	Date	Questionnaire ID
				1 / 2		

Name of the project	Period project operated	TASAF
		Yes ☐ No ☐

Codes: 1= Makete, 2 = Rungwe; 1= Yes, 0 = No

B: Beneficiary group (please circle where appropriate).

Orphan	Widow	Widower	Elder	Disabled	Street youth	Able -bodied
1	2	3	4	5	6	7

C: Household information

Q01. Please, circle out the correct response from (i) – (v).

i	Household head	1= husband; 2 = wife; 3= single parent
ii	Gender ----- age	1= male, 0 = female

iii	Marital status: 1= single; 2 = married; 3= widower; 4 = widow; 5=separated;
-----	---

iv	Highest level of education attained: 1= Non formal education; 2 = adult education; 3 = primary education; 4= secondary education; 5= post secondary education with training courses
----	--

v	How long have you been in this village?years.
---	---

Q02. Household characteristics. Kindly fill in the information.

S/N	Description	Age	Sex: 1= male; 0 = female	Education as 1(v)	Activity
01	Spouse	1 2 3			
02	Children at home	1 2 3 4			
03	Relatives at home	1 2			
04	Orphans at home	1 2 3			

		4			
05	Others	1			
		2			

Codes for activity: 1= full time farming; 2= school children; 3= secondary student; 4 = too old to work; 5= under fives; 6= business; 7 = employed by GVT/ NGO; 8= Farming business; 9 =out-migrated; 10 = parish worker

Q03. Sources of household income

S/N	Source	Codes: 1= yes; 0 = No	Average monthly income in Tshs
01	Farm activities		
02	Off –farm activities		
03	Casual employment		
04	TASAF relief		
05	Family remittances		

D: ASSETS POSSESSION

Q04. Assets / resources owned.

S/N	Type of asset	Response: 1= yes; 0 = No	Number owned
01	Ox- plough		
02	Sprayer pump		
03	Bicycle		
04	Radio		
05	TV		
06	Mobile phone		
07	Ox cart		
08	Donkeys		
09	Hand hoe		

Q05. Land cultivated

(i) How much land is used for cultivation.....acre

(ii) Is the land cultivated increased in the past five years? 1= Yes, 0 = No

(iii) Otherwise, give reasons

E: FOOD SECURITY

Q06. Please indicate staple food and cash crops grown

S/N	Crops	If one grows: 1= yes, 0= No	Acreage	Amount produced Bags/100Kg
01	Maize			
02	Paddy			
03	Wheat			
04	Beans			
05	Cassava			
06	Bananas			
07	Others			

Q07. Indicate your daily time allocation (hours) during farming and off- season

S/N	Activity	Farming season hours/day	Off –season hours /day
01	Farm work		
02	Non - farm/off- farm work		
03	House activities		
04	Leisure / recreation		

Q08. Farmers' input requirements and output sales in the past five years:

(i) Please indicate the source of farm inputs

Source	Codes: 1 = Yes; 0 = No
TASAF relief	
Government subsidies (Voucher system)	
Traders	

(ii) Give reasons for not using farm inputs

Reasons	Codes: 1 = Yes; 0 = No
Very expensive	
Not available	
Not preferred	

Q09. When you are planning agricultural activities, do you take into consideration the following attributes?

(Please, explain how)

S/N	Attribute	Codes: 1 = Yes; 0 = No	Reasons
01	Expected rainfall distribution		
02	Availability of subsidized inputs		
03	Availability of manures		
04	Price and market of produce		
05	Weeds and weeding problems		

Q10. Did food production increased in the past five years? 1 = Yes; 0 = No

If yes give reasons, then go to 12. Otherwise answer the next question

Q11. Food shortage in the past five years: Experienced [] Did not experience []

Give reasons. (If you experienced go to question 14), otherwise go to 12

Codes: 1 = experienced, 0 = did not experience

Q12. Marketing of farm products information

S/N	Crop	Selling point	Price / unit of 100kg
01	Maize		
02	wheat		
03	Bananas /potatoes		
04	Rice		

Codes for selling points: 1 = Middlemen; 2 = private traders; 3 = market and 4 = others

Q13. Is the distance a problem in marketing food: Yes [] No []

For either response, answer part (i) - (iii).

(i) What is the distance from marketing point? () Kms

(ii) What transport do you use? Bicycle [] Car [] Donkey [] on foot []

Codes: 1 = bicycle, 2 = car, 3 = donkey, 4 = on foot

(iii) Give reasons for the choice of your transport in (ii) above

Q14. Do you own animals / chickens? Yes [] No [].

If yes, answer the following questions. Otherwise go to 18

Type of animal kept	1=Yes, 0 = No	Number	Rearing system	Estimate earnings/year
Cattle				
Goats				
sheep				
pigs				
chickens				
others				

Codes for rearing systems: 1= zero grazing/ deep litter for poultry; 2= semi intensive (grazing)/ free range for poultry; 3 = extensive / nomadic grazing

Q15. What is the source of animals kept: TASAF relief ☐ Family ☐ others specify...

[illegible]

Q16. Please, indicate income changes in the past five years: Increased [] No change [] Decreased [].

Reasons for income change.

Q17. Does livestock help you in case of food shortage? Yes ☐ No ☐. If yes, in what ways?

01	
02	

If No, why?.....

Q18. During which months of the year do you experience food insecurity?

g / y / i /

Q19. Where do you obtain your main food products in the course of the year? (*Please, cross where applicable for each month*).

[illegible]

Q20. How many times food is cooked in your household per day?

Codes: 1 = Three times; 2 = two times; 1 = once. (Please circle where appropriate).

Q21. Kindly indicate the frequency of food cooked in your household per week (specify units).

S/N	Food item	No. of times prepared/week	Quantity prepared/meal
01	Sweet / round potatoes		
02	Kande		
03	Ugali (thick porridge)		
04	Beans		
05	Bananas		
06	Meat		
07	Milk		
08	Vegetables		
09	Fruit		
10	Other (specify)		

Q22. What has been the source of food improvement?

Codes: 1 =TASAF intervention, 0 = family

F: HEALTH SERVICES

Q23. Do health services available at your village? Yes ☐ No ☐.

Q24. For either response, is the distance a problem to access health service? Yes ☐ No ☐

Q25. If yes, how far is it from the health centre, please circle it.

a. Less than 2Km	b. 2km – 10km.	c. more than 10Km.
------------------	----------------	--------------------

Q26. Health status

i) Please, indicate risk changes due to health service changes in the past five years

S/N	Beneficiaries	Codes for changes: 1 = Decreased, 2 = No change, 3= increased
01	Pregnant mothers' deaths	
02	Infants deaths	
03	Under five children deaths	

ii) Indicate the incidence of diseases that frequently affect children under five age in your area. (*Please circle where appropriate*).

Disease	Malaria	Measles	Diarrhea	Pneumonia	Kwashiorkor
Frequently	1	2	3	4	5

Q27. HIV/ AIDS and control:

Are you aware with HIV/AIDS and control measures? Yes ☐ No ☐

If yes, answer questions 28 and 29. If No, why?.....

Q28. Mention source of information in a preference order (1= most source of information)

<i>Codes for sources: 1= radio; 2= TV; 3= Campaigns; 4= Newspapers; 5=others</i>
--

Q29. What methods are readily used to control HIV/AIDS

<i>Codes: 1= Abstain; 2 = trustful; 3 = condoms; 4=Neither</i>
--

Q30. Kindly indicate whether the following vulnerable people have free access to health services at your village.

Orphans	Elders	Widows / widowers	HIV infected
Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐

In each case above:

i) If yes, who provides these services.....

ii) If No, why?

--

Q31. Can health improvements be attributed to the TASAF intervention? Yes ☐ No ☐.

G: SOCIO - ECONOMIC IMPACT OF ASSETS CREATED

Q32. Does TASAF support public works in your village? Yes ☐ No ☐

If yes, answer parts (a) – (c). (For roads, dispensary and water projects)

a)	State the productive project created.
b)	What was your contribution to the project?
c)	Were you paid when worked on it? Yes ☐ No ☐

If yes in (c) above, answer the next questions; otherwise go to 36.

Q33. If you worked and paid then:

a)	How much were you paid per day/month?
b)	If you were paid, how did you spend your income?
c)	What is the importance of the asset created to the economy of the community?

Q34. Has your income increased? Yes [] No [].

(a)	If No, why?
(b)	What is your income level per day/month?
(c)	What is the source of this income?

Q35. Does public works help you in case of food shortage? Yes [] No [].

If yes, in what ways?

01	
02	

H: SOCIAL WELL-BEING

Q36. Give your observations on the following issues in the past five years

(i) Women empowerment in your village:

S/N	Changes in	Codes: 1= Increased, 2 = decreased, 3 = No change
01	Women participation in decision making	
02	Women groups formed	
03	Number of women association members	
04	Number of loans disbursed for women groups	
05	Women's decision making capacity at household level	
05	Female enrolment in primary education	

(ii) Unemployed youth in your village

S/N	Changes in	Codes: 1= increased; 2 = No change; 3 = Decreased
01	Youth dependency	
02	Income generation activities	
03	Sports and recreational programme	
04	Youth health clubs	
05	HIV/AIDS and reproductive health services	
06	Criminal activities	

Q37. Kindly, indicate who benefited from the empowerment (*please circle where appropriate*).

Orphans	Widow	Widower	Elders	Handicapped	Street children	Able – bodied
1	2	3	4	5	6	7

Q38. State economic activities supported/created.

--

Q39. How can you describe your access to the following services?

S/N	Service	Access 1/ 2/3	If "not sufficient", kindly explain why
01	Safe water supply		
02	Business skills		

Codes for services: 1= sufficient; 2 = not sufficient; 3 = not available.

I: PROJECT EFFECTIVENESS, EFFICIENCY AND SUSTAINABILITY

Q40. Did TASAF support vulnerable groups through community projects? 1 =Yes; 0 =No

If yes, specify the project in (i) to (iii) and answer questions that follow. Otherwise go to question 47.

i) **Project 1:** Dairy cattle; Yes ☐ No ☐

S/N	Description	
01	Number of milking cows	
02	Number of calves	
03	Amount of milk produced per day	
04	Amount of milk sold per day	
05	Amount of milk for household use	
06	Price of one liter of milk	

a) What have you done with income earned? Mention.

b) Any problem(s) experienced?

(ii) **Project 2:** Poultry production; Yes ☐ No ☐

S/N	Description	Responses
01	Number of chickens provided	
02	Current number of chickens	
03	Amount of eggs laid per week	
03	Amount of eggs sold per week	
04	Amount of eggs for household use	
05	Price of one egg in Tshs	

a) What have you done with income earned? Mention.

b) Any problem(s) experienced

(iii) **Project 3:** Environmental conservation; Yes ☐ No ☐

S/N	Description	Responses
01	Number of seedlings grown	
02	Varieties of seedling species grown	
03	Price of one seedling sold	
04	Your income level per day/month	

a) What have you done with this income? Mention.

b) Any problem(s) experienced?

Q41: Project relevance

S/N	Attribute	1=Yes; 0 =No
01	Is the project relevant with regard to poverty reduction?	
02	Did the project goal address poverty reduction related social needs?	
03	Did the project purpose meet the immediate needs of the target group?	
04	Did target group involved in planning and implementation of the project?	
05	Did the project address the gender issue adequately?	
06	Were the results attractive for the beneficiaries?	

Q42. Project effectiveness

S/N	Attribute	1=Yes; 0 =No
01	Were the project outputs achieved as expected	
02	Were the project activities implemented as planned?	
03	Any constraints that hindered implementation of activities?	

Q43. Project efficiency

01	Attribute	1=Yes; 0=No
02	Was the timing of inputs appropriate?	
03	Was the project economical compared to other possible means?	
04	Did the project utilize the existing human resources as possible?	
05	Was the degree of participation of beneficiaries sufficient?	

Q44. How long did you participate in the project?

Q45. Kindly give the following information about your involvement in the project?

S/N	Project activities you participated in	Reason for your participation	Observed benefits of your participation
01			
02			
03			

Q46. Which of the project (specify project) activities would you highly recommend for extension in your village (in order of importance)?

Q47. What other / intervention activity would you recommend for a future project?

Appendix 1.2: Focus discussion groups' checklist**A: Background information**

Village	Ward	Division	District	Size of a focus group	FDG ID
				Male = []; Female = []	

B: TASAF intervention

Q01. Projects created in your village	Q16. Project relevancy to the target group
Q02. Participation in project identification, formulation and implementation	Q17. Implementation of planned project activities
Q03. Project objectives	Q18. Budget and degree of achievement proportionate
Q04. Community project objectives	Q19. Utilization of the existing human resource
Q05. Participation in decision making	Q20. Degree of participation of beneficiaries sufficient
Q06. Voice heard in a proposed project by financiers	Q21. Achievement of the project outputs as expected
Q07. Problems encountered in the decision – making process	Q22. Problems and challenges faced the implementation process
Q08. Selection of community management committee members (CMC)	Q23. Distribution of project benefits to the beneficiaries
Q09. CMC members gender balance	Q24. Target groups benefited.
Q10. Responsibilities of CMC	Q25. Current social well being of the beneficiaries
Q11. Problems / challenges of accountability faced the CMC	Q26. Project activities highly recommended for extension (in order of importance).
Q12. Projects you agreed with and did not agree with	Q27. Other intervention activity recommended for a future project (in order of importance)
Q13. Reasons for not agreeing with others on these projects	
Q14. Project successful implemented	
Q15. Reasons for success	

Q43. Project efficiency

01	Attribute	1=Yes; 0 =No
02	Was the timing of inputs appropriate?	
03	Was the project economical compared to other possible means?	
04	Did the project utilize the existing human resources as possible?	
05	Was the degree of participation of beneficiaries sufficient?	

Q44. How long did you participate in the project?

Q45. Kindly give the following information about your involvement in the project?

S/N	Project activities you participated in	Reason for your participation	Observed benefits of your participation
01			
02			
03			

Q46. Which of the project (specify project) activities would you highly recommend for extension in your village (in order of importance)?

Q47. What other / intervention activity would you recommend for a future project?

Appendix 1.2: Focus discussion groups' checklist**A: Background information**

Village	Ward	Division	District	Size of a focus group	FDG ID
				Male = []; Female = []	

B: TASAF intervention

Q01. Projects created in your village	Q16. Project relevancy to the target group
Q02. Participation in project identification, formulation and implementation	Q17. Implementation of planned project activities
Q03. Project objectives	Q18. Budget and degree of achievement proportionate
Q04. Community project objectives	Q19. Utilization of the existing human resource
Q05. Participation in decision making	Q20. Degree of participation of beneficiaries sufficient
Q06. Voice heard in a proposed project by financial	Q21. Achievement of the project outputs as expected
Q07. Problems encountered in the decision - making process	Q22. Problems and challenges faced the implementation process
Q08. Selection of community management committee members (CMC)	Q23. Distribution of project benefits to the beneficiaries
Q09. CMC members gender balance	Q24. Target groups benefited
Q10. Responsibilities of CMC	Q25. Current socio - well being of the beneficiaries
Q11. Problems / challenges of accountability faced the CMC	Q26. Project activities highly recommended for extension (in order of importance)
Q12. Projects you agreed with and do not agree with	Q27. Other intervention activity recommended for a future project (in order of importance)
Q13. Reasons for not agreeing with others on these projects	
Q14. Project successful implementation	
Q15. Reasons for success	

Appendix 1.3: Key informants' interview checklist

A: Background information

Village	Ward	Division	District	Key informant ID

B: TASAF intervention

Q01. Assets created	D: Effectiveness
Q02. The extent of achievements of created social services / investments.	Q12. Project outputs achievements
Q03. Kind of skills and opportunities created	Q13. Implementation of project activities
Q04. Kind of assistance to each vulnerable group.	E: Efficiency
Q05. Average level of income of the target people	Q14. Timing of project inputs
Q06. Status of food security in the past five years	Q15. Economical of project in comparison to other alternatives
Q07. Economic activities managed by vulnerable individuals	Q16. Degree of participation of beneficiaries
C: Relevance	Q17. Project activities and improvements of economic status of beneficiaries
Q08. Project relevancy with regard to poverty reduction	F: Sustainability
Q09. Participants' involvement in planning and implementation of the project	Q18. Project sustainability with available human resources
Q10. Project created and gender issues.	Q19. Project sustainability from a financial point of view
Q11. Results attractiveness to the beneficiaries	Q20. Observed direct /indirect livelihood impact after intervention (+/-/0).
	Q21. Lesson learnt / challenges / problems in implementation process

Appendix 1.4: Project coordinators' interview checklist

A: Project background information

Project name	Project type	Duration of the project	Target group
Beneficiary group	Location	District	Project coordinator ID

B: TASAF intervention

Q01. Assets created	H: Project outputs and outcomes
Q02. The extent of achievements of created social services / investments.	Q13. Outputs achievements
Q03. Kind of skills and opportunities created	Q14. Community outcomes
Q04. Kind of assistance to each vulnerable group.	I: Project effectiveness
Q05. Average level of income of the target people	Q15. In terms of set objectives
Q05. Status of food security in the past five years	Q16. In terms of food security
C: Objectives:	Q17. Spill-over effects
Q05. Community's objectives	Q18. Unexpected effects
Q06. Project's objectives?	J: Sustainability
D: Operational strategies	Q19. Conditions of sustainability of the effects
Q07. Project implementation strategies	Q20. Project relationship to other projects in the area
E: Acceptability	Q21. Project relationship to the development policy in the area
Q08. Project conformation to the local beliefs	Q22. Government involvement in the project
F: Feasibility	Q23. Issues enhanced or hindered project success
Q09. Stakeholder analysis	Q24. Pattern of food market prices in the past

	five years
G: Participation	Q25. Status of able-bodied individuals' food security in the past five years
Q10. Place of community participation	Q26. Project assistance efficiency on household with vulnerable people
Q11. Opportunity for participation	Q27. Challenges and lessons experienced
Q12. Opportunity for strengthening self-determination	

Thank you for your active participation

Appendix 2: Model summary of quantitative estimation

Appendix 2.1: Model summary for socio-economic impact analysis of assets created

Description	Attributes
Model and estimation	Instrumental variables (2SLS) regression
Dependent variable	Socio-economic impact
Number of observations	300
Software used	STATA
Wald chi2(19)	124.76
Prob > chi2	0.0000
Model fit test	
R-squared	0.2460
Fitted values test	Ramsey RESET test
F(3, 277)	2.49
Prob > F	0.0604
Heteroskedasticity test	Breusch-Pagan / Cook-Weisberg test
chi2(1)	0.30
Prob > chi2	0.5840

Appendix 2.2: Model summary for analysis of food security

Description	Attributes
Model and estimation	Heckman selection model - two-step estimation
Dependent variable	Food security
Number of observations	298
Software used	STATA
Wald chi2(17)	196.89
Prob > chi2	0.0000
Censoring observations	Censored = 108, and uncensored =190
Model fit test	Ramsey RESET test
F(3, 279)	1.92
Prob > F	0.1258
Heteroskedasticity test	Breusch-Pagan / Cook-Weisberg test
chi2(1)	0.01
Prob > chi2	0.9368

Appendix 2.3: Model summary for analysis of health status

Description	Attributes
Model and estimation	Heckman selection model - two-step estimation
Dependent variable	Health status
Number of observations	300
Software used	STATA
Wald chi2(17)	195.47
Prob > chi2	0.0000
Censoring observations	Censored obs = 108 Uncensored obs = 192
Model fit test	
Fitted values test	Ramsey RESET test
chi2(1)	1.51
Prob > F	0.2126
Heteroskedasticity test	Breusch-Pagan / Cook-Weisberg test
chi2(1)	1.24
Prob > chi2	0.2649

Appendix 2.4: Model summary for analysis of project sustainability

Description	Attributes
Model and estimation	Instrumental variables (2SLS) regression
Dependent variable	Project sustainability
Number of observations	299
Software used	STATA
Wald chi2(20)	1718.93
Prob > chi2	0.0000
Model fit test	
R-squared	0.8492
Root MSE	0.19413
Fitted values test	Link test
_hat	
P> t	0.000
_hatsq	
P> t	0.346
Heteroskedasticity test	Breusch-Pagan/Cook-Weisberg test
chi2(1)	0.36
Prob > chi2	0.5508

Appendix 3: Projects created and participants' pictures

Appendix 3.1: Local road and dispensary constructed through TASAF intervention



Appendix 3.2: Dairy cattle projects in Makete and Rungwe districts



Dairy cattle recipients at Nditu and Bugoba villages respectively, in Rungwe district.



Dairy cattle recipients at Iloilo and Ndulamo villages respectively, in Makete district.

Appendix 3.3: Environmental conservation in Makete district



Environmental conservation recipients at Mahanji village, Matamba.

Appendix 3.4: Poultry project in makete ditsrict



Appendix 3.4 shows poultry recipients at Kisinga, Mago and Ihela villages from left to right along the first and second row view respectively in Makete district.

Appendix 3.5: Community development investment in water in Rungwe district



Water accessibility reduces labour and time, as it was seen at Kalalo village

Appendix 3.6: Carpentry project in Makete district



Carpentry works recipients in their workshop at Ikuwo village, Ikuwo.

Appendix 4: Tanzania social action fund intervention phase I and II

Appendix 4.1: Tanzania social action fund intervention phase I

A4.1.1 Origins and design of TASAF

When the president of Tanzania, Mr. Benjamin, W. Mkapa visited Malawi in 1998 he observed communities projects supported by the Malawi social action fund (MASAF). This resulted in the Government of Tanzania (GOT) requesting the World Bank to send the same team to create a similar social fund to help communities contribute to their own development (WB, 2006). As a result, Tanzania action fund (TASAF) had two financing windows: A community development initiative to improve public social service infrastructure. Next, a public works program for local governments to target food insecure areas with cash-for-work in creation of productive assets.

Moreover, TASAF was also designed to assist communities cope with the consequences of HIV/AIDS. Conversely, orphans were expected to benefit indirectly from the safety nets elements. However, a community needs assessment had found that communities had low trust in the existing institutions (WB, 2006). As a result, this caused the authorities to create a new institution to manage the social fund. Implementation started in November, 2000. This was the first phase of implementation (TASAF I) and lasted till June, 2004. During its implementation, there were some successes as well as challenges.

A4.1.2 Success and challenges of TASAF I

i. Success

In the first phase of implementation, TASAF had significant results in education, health, water and rural roads in descending order (WB, 2006).

ii. Challenges

The assumed two financing windows faced some problems in its implementation: (a) It was reported that neither of the financing windows were able to respond in any significant way to address the needs of those affected by HIV/AIDS (WB, 2006). (b) However, in its implementation it was assumed that NGOs would respond by preparing proposals for community work. Hitherto, communities did not engage NGOs because their administrative overheads consumed a large share of the projects. (c) Health facilities built were not fully staffed; this was caused by the chronic shortages of healthcare personnel most notably in remote rural areas. (d) Yet, there was information inadequacy on sector strategies in a form that communities could understand and apply (WB, 2006) with regard to accountability in the decentralization process.

A4.1.3 Accountability and decentralization

TASAF requires that the recipient communities establish community management committees (CMC) to manage the funds and be accountable to the community. The Tanzanian decentralization of functions to local government level requires their elected and employed personnel to be accountable to the electorate (WB, 2006). In this process, accountability challenges raised since there was no clearly defined role for village government leadership. However, communities consistently expressed their satisfaction with the first phase of implementation (TASAF I). Thus far; based on phase one performance, phase two was introduced for a period 2005 -2009.

A4.2 Tanzania social action fund intervention phase II (TASAF II)

A4.2.1 Introduction

Poverty reduction strategy (PRS) has enabled the government to make some achievements in reducing poverty particularly to non-income poverty. However, income

ii. Challenges

The assumed two financing windows faced some problems in its implementation: (a) It was reported that neither of the financing windows were able to respond in any significant way to address the needs of those affected by HIV/AIDS (WB, 2006). (b) However, in its implementation it was assumed that NGOs would respond by preparing proposals for community work. Hitherto, communities did not engage NGOs because their administrative overheads consumed a large share of the projects. (c) Health facilities built were not fully staffed; this was caused by the chronic shortages of healthcare personnel most notably in remote rural areas. (d) Yet, there was information inadequacy on sector strategies in a form that communities could understand and apply (WB, 2006) with regard to accountability in the decentralization process.

A4.1.3 Accountability and decentralization

TASAF requires that the recipient communities establish community management committees (CMC) to manage the funds and be accountable to the community. The Tanzanian decentralization of functions to local government level requires their elected and employed personnel to be accountable to the electorate (WB, 2006). In this process, accountability challenges raised since there was no clearly defined role for village government leadership. However, communities consistently expressed their satisfaction with the first phase of implementation (TASAF I). Thus far; based on phase one performance, phase two was introduced for a period 2005 -2009.

A4.2 Tanzania social action fund intervention phase II (TASAF II)

A4.2.1 Introduction

Poverty reduction strategy (PRS) has enabled the government to make some achievements in reducing poverty particularly to non-income poverty. However, income

poverty was still wide spread both in rural and urban areas. TASAF II was an important intervention at community level within the framework of PRS with the aim of achieving the millennium development goals (MDGs) through project development objectives (TASAF II, 2005).

A4.2.2 Project development objective

The development objective of TASAF II was to empower communities to access opportunities so that they can request, implement and monitor sub-projects so as to contribute to improved livelihoods linked to MDGs indicators in the National strategy for growth and reduction of poverty (NSGRP) as per stated guiding principles (TASA II, 2005).

A4.2.3 Project components

TASAF II project comprised two major components:

a) National village fund (NVF).

The NVF component created rules for communities to:

- i. Access resources that can stimulate economic activities and allow poor households to increase their incomes;
- ii. Reduce vulnerability by empowering them with more instruments for ensuring against the risks they face and;
- iii. Improve access and use of social services.

Accordingly, the project provided a multi-sectoral response to the needs of communities whose activities would better prepare them to take advantage of market created opportunities. As well as utilize resources made available from the government (TASAF II, 2005). This was associated with capacity enhancement from grass roots.

b) Capacity enhancement

Communities and sectors were capacitated to undertake activities that assist them meet their targets (TASA II, 2005).

A4.2.4 Coverage

TASAF II operated nationally (TASAF II, 2005).

A4.2.5 Target groups

The target groups were under two components:

a) National village fund (NVF)

The principal targeted beneficiaries of the NVF were those communities who:

- i. Lack access to basic social and market services;
- ii. Have able-bodied, but food insecure households;
- iii. Have household with vulnerable individuals (TASA II, 2005).

A4.2.6 Eligibility criteria for accessing National village fund's

TASAF disbursed funds for subproject implemented direct to the CMC (TASA II, 2005).

A4.2.7 Safe guards

Communities were expected to implement sub-projects that were small in size and in specific sites chosen by them. However, implementation was required to comply with resettlement or relocation issues which were to be resolved before a sub-project was approved (TASA II, 2005).

A4.3 National village fund (NVF)

A4.3.1 Introduction

TASAF II set up a National village fund to finance sub-projects coming out of a community-driven development approach at the community level. All sub-projects were managed by CMC democratically elected by beneficiaries (TASA II, 2005) to achieve the following objectives.

A4.3.2 Objectives

The major objectives of NVF were to:

- i. Provide support to service poor communities that contributed to increased availability and use of basic social and environment services in line with specified MDGs targets. Such services include: education, water and sanitation, roads, banking and markets in line with MDGs targets.
- ii. Provide employment opportunities to able-bodied individuals in food insecure households. This aimed to increase their cash income, skills, and opportunities from working in NVF financed public works programs.
- iii. Provide assistance to households with vulnerable individuals which include: orphans, disabled, elderly, widows / widowers and those affected/infected by HIV/AIDS, among others to manage sustainable economic activities (TASAF II, 2005).

A4.3.3 Beneficiary target group

The NVF interventions focused on the target groups.

A4.3.4 Community service packages

Community service packages guided communities on activities that were eligible for funding and support from TASAF. The service packages, defined by the respective

sector ministries comprised a minimum set of interventions that were (a) affordable and suited to community level management and maintenance. (b) within national sector norms and standards. (c) contributed to specified MDG indicators targets and NSGRP.

A4.3.5 Implementation arrangements

According to TASAF II (2005) under the NVF communities managed sub-project with the oversight from the LGAs. Implementation of the sub-projects followed three main phases, namely: pre-subproject cycle, subproject cycle, and post-subproject cycle activities as detailed below:

A4.3.6 Pre-subproject cycle activities

Pre-subproject cycle activities included: awareness raising and sensitization, formation of relevant teams, determining LGA specific self-targeting wage rate and capacity building for relevant staff. Any interested community submitted a sub project interest form (SPIF).

A4.3.7 Sub-project cycle activities

Communities targeted for NVF support entered into the sub-project cycle through eight stages (TASAF II, 2005). These were project identification, desk appraisal, field appraisal, approval, launching, implementation, supervision and monitoring and completion and inauguration. Then again, post project activities followed.

A4.3.8 Post - subproject cycle activities

After subproject completion and inauguration, evaluation was proposed to be done on the following issues: (a) Performance of the facility. (b) The extent of use of the facility or service. (c) The degree to which the community has met its obligations to manage,

maintain and repair equipment or structures. Hitherto, collect user fees and promote the use of services. (d) The extent to which CMC/LGA has met its obligation. (e) The performance of any collaborators such as sectors in providing staff, operating funds and other inputs to support the community. (f) Skills developed during the course of implementation with a view of promoting further development for future use. (g) Overall assessment of impact of the intervention on poverty alleviation in contexts of MDGs and NSGRP. (h) Analysis of the number and composition of people benefiting from the subproject and the recipients own assessment of the value of the asset and the return on their investment through sub project evaluation (TASAF II, 2005).

A4.3.9 Sub-project evaluation

As noted above, the instruments proposed for carrying out evaluation were:

- (a) Community score card for every six months;
- (b) Citizen report card for every two years and
- (c) Social impact assessment, at the end of the project (TASAF II, 2005).

As has been explained, TASAF II contribution aimed at increasing cash income, skills and opportunities of communities to improve their livelihood in line with the MDGs and NSGRP strategies. TASAF II (2006a) report revealed that many communities shown their interests in implementing subprojects. However, their prioritized subprojects were selected through extended project rural appraisal (E-PRA) though the number of submitted SPIF posed a challenge to many LGAs in deciding communities for doing E-PRA (TASAF II, 2006b). This was due to two major reasons:

- i. Inadequate or lack of poverty data which could have guided them properly target communities that really need support.
- ii. Submission of SPIF by people who did not belong to any beneficiary groups whose qualifications did not need to be supported. Thus verification was required before making any decision.

On the other hand, TASAF II (2007a, 2007b) report revealed that elderly group had the highest number of beneficiaries than any other group, followed by the disabled, children and HIV /AIDS infected. Moreover, it was indicated that education sector was a leading in implementation followed by health, livestock, road, water, social welfare and food security in that order. However, there was a challenge in resources requirements as communities were mobilized to show interest for support thus allocated resources could not quench their thirst for development (TASAF II, 2007a).

Therefore, TASAF like other social funds was introduced to reduce the imbalances existed in Tanzania through demand-driven development of productive assets by the community. Though; Lenneiye (2006) argues that intervention has increased the emphasis on income poverty. However, there was no documented evidence on impact assessment as per report (TASAFII, 2005). Though measuring impacts also has been reported as a major weakness of global social funds (Lau Jorgensen and Van Domelen, 1999). Thus, this study performed the livelihood impact assessment of TASAF intervention to fill the gap.

SPE
HC79
1P63
MB5
2012
Copy3

