Heifer In-trust schemes and incomes of smallholder households in the Highland and Semi-arid regions of Tanzania

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Abstract

Poor household incomes are a major challenge to smallholder farming households' expenses in most of Tanzania Njombe and Shinyanga regions inclusive. The Heifer In-trust Schemes (HIS) were introduced in these regions purposely to enable vulnerable households to improve their food and income security hence raising such households' purchasing power. The study's main objective was to assess the role of the HIS to smallholder households' major expenditures in the above-mentioned areas. Specifically, the study aimed at exploring the assets and income acquired through the beneficiary household's involvement in the HIS and at examining their ability to meet children's educational and households' health costs. The study adopted a cross-sectional design whereby data were collected from 402 randomly selected HIS beneficiaries' households using a structured questionnaire. In addition, nine focus group discussions involving 135 discussants were conducted to complement information collected through the questionnaire.

Children's education, assets acquisition and food accounted for 36.2, 24.3 and 10.5% of the income accrued from the HIS dairy enterprise. The benefits in Njombe (a highland area) and Shinyanga (a semi-arid area) zones were similar.

Key words: *assets, food, dairying, development, livelihood, poverty*

Introduction

Rural poverty and access to capital is a major problem for smallholder farming households in most developing countries, including Tanzania. According to FAO/ILRI (2003) acquisition of assets and income are critical means of addressing rural poverty and improving the livelihood of smallholder farmers. In the literature smallholder farmers are defined differently depending on the context, sector and ecological zone. The term 'smallholder' is also used interchangeably with the terms 'small-scale', 'resource poor' and 'peasant '. According to Dixon et al (2005) smallholder refers to their limited resource endowment relative to other farmers in the sector. In Tanzania, most smallholder farmers are located in the rural areas, where both physical and institutional infrastructure limits their development and expansion. Generally, smallholder farmers lack access to proper roads and this in turn limits their ability to transport inputs and produce and gain access to information. In such circumstances, according to Delgado (1999), acquisition of agricultural resources becomes difficult and the supply of market services becomes limited. Lack of assets, agricultural information and technology, and of access to services, hinders the smallholders' participation in potentially lucrative markets and hence progress. For example, UN (2010) argues that poverty is a major factor in smallholder farmer households' development. Household poverty is manifested by inadequate year-round food supply, income, limited access to the children's education, ill health, inadequate housing and necessary productive resources sufficient to ensure sustainable livelihoods. This calls for pro-poor efforts to address poverty-related challenges in Tanzania.

The above-mentioned issues are a major concern of various governments and development partners, Heifer Project International (HPI) and Heifer International Tanzania (HITz) included. Enhancing food security, poverty reduction and promoting ability of smallholder farmers to oover major expenses have been a central goal of the above organizations through the Heifer In-trust Scheme (HIS) in communities with limited resource where hunger persists (Dixon and Minae 2006). Globally, the HIS is a rural poverty reduction model initiated by Dan West (1893-1971). West was a Midwestern farmer in Spain and was ladling out rations of milk to orphans and refugees during the Spanish Civil War when this idea of reducing dependency and relief came to his thoughts. He founded the Heifers Project International (HPI) and HIS for Relief in 1944.

The Heifer-in-Trust Scheme (HIS) started in Africa in 1974 and Tanzania and Cameroon were the first countries to operate this model. Through the Heifer-in-Trust Scheme, farmers are advised to organize into groups for out-scaling in-kind the credit in the form of a heifer to be passed from one household to another. In Njombe and Shinyanga regions, HIS started in 1998 whereby 72 heifers were provided as seeds to each of these regions. It was expected that HIS would alleviate poverty in terms of, among other aspects, increased income and improved access to food, assets and quality educational and health services (Dixon and Minae 2006; Urassa 2005; HITz 2011).

The HIS model has been adopted as one of the initiatives for alleviating poverty among smallholder farmers in Tanzania for several years now, but there is a dearth of information how this model achieves the aim of improving the life standards of the target beneficiaries. This study therefore aims at contributing to filling this gap by investigating on how Heifer-in-Trust Scheme has influenced the capacity of smallholder farmers to meet their major expenses. Since HIS has been implemented in different agro-ecological regions, this study considers the dimension of agro-ecology by selecting highland (Njombe) and lowland dryland (Shinyanga) regions as representative case studies. The study is in agreement with the Tanzanian strategies for alleviation of poverty such as National Strategy for Growth and Reduction of Poverty (NSGRP) (URT 2006). It is imperative that in order to make strategies which are informed by field realities, applied research should be conducted on various pro-poor issues including the in-kind credit models such as The Heifer-in-Trust Scheme

The study's main objective was to assess the contribution of HIS to smallholder households' major expenditures in the highlands and semi-arid areas of Tanzania using Njombe and Shinyanga regions as the case study. Specifically, the study aimed at exploring the assets acquired through the beneficiary household's involvement in the HIS and examining their ability to meet children's educational and households' health costs.

It is hoped that the findings will inform researchers, academicians and other stakeholders interested in the well-being of vulnerable rural households on how small scale dairy enterprises may or may not help in promoting the capacity of farmers to cover their household expenses. Lastly, the findings may also provide insights to government and other potential development partners including HITz (Heifer International Tanzania) on how HIS works to alleviate rural poverty. HITz terminated support to the study areas 15 years ago, therefore, it was thought necessary to validate the impact of the assistance provided through the HIS.

In this study, smallholder, farming households refer to those HIS beneficiaries who due to the limited resources were producing at subsistence level with no, or very little, surplus to market. Therefore, through the support by HITz it was expected such households would attain food security, earn some income from sale of surplus milk and food crops in excess of their household needs hence enabling them to get out of poverty. Assets are defined as fixed and current items with value owned by smallholders such as land, house (s), bicycle, telephone and livestock. It does not necessarily mean the current assets such as cash in the bank or at hand. This definition is in agreement with Chimilila (2005) who defined assets as any item having economic value that is owned by an institution or individual. According to this author, assets that individuals own heavily depend on the resources they can access by directly owning those resources, borrowing or renting them. Assets are commonly grouped into current and fixed assets: current assets are such as cash, inventory, and accounts receivables that are currently cash or expected to turn into cash; fixed assets are items such as land, buildings, equipment and intangible items, on which this study focused. This study argues that all forms of the assets mentioned above in one way or another can be acquired through a dairy farming project such as HIS. Education costs are defined as the ability of the household to pay school fees and other school-related costs whereas health cost is defined as a state of households' ability in meeting medical service expenses in order to get out of poor health (WHO 1948).

Methodology

Description of study area

Njombe and Shinyanga regions are found in contrasting and diverse agro-ecological zones of Tanzania. Njombe Region is located in the southern highlands of Tanzania that form part of Southern Agricultural Growth Corridor (SAGCOT), which has great potential for supporting the "*Kilimo Kwanza*" (Agriculture First) initiative. According to Tanzania's 2012 national population and housing census, Njombe region had a population of 702,097 (URT 2013). Njombe Region has a size of 21,347 square kilometres (URT 2011). It is located between longitudes 34° 56' 0"E and 36° 06' 07'E and between latitudes 9° 20' 0'S and 11° 0' 0'S. Njombe Region is at 1,581 meters above the sea level and gets an average annual rainfall of 1500 mm (NRCO 2013). Major ethnic groups in Njombe Region are the Bena and Hehe people. This study was conducted in eight villages.

Shinyanga Region is situated in the lake zone that forms part of semi-arid areas of Tanzania. According to the 2012 Tanzania national population and housing census report, Shinyanga Region had a population 1,534,800 (URT 2013). Shinyanga Region has a size of 50,781 square kilometres (URT 2011). It is situated between longitudes 31° 0' 14' 'E and 35° 0' 11' 'E and between latitudes 2° 0' 15' 'S and 4°0' 30' 'S. Shinyanga Region lies 60 kilometers from the Lake Victoria. The region gets an annual average rainfall of 500 mm (SRCO 2011). Major ethnic groups in Region are the Sukuma, Nyamwezi and Sumbwa. This study was conducted in 18 villages (8 in Njombe Region and 10 in Shinyanga Region).

Study approach

This study was guided by the null hypothesis that Heifer In-trust Schemes (HIS) beneficiary households' well-being in Njombe (highland) and Shinyanga (semi-arid area) has not improved through their involvement in the scheme and by a question: 'what role has the HIS played in the contribution of beneficiary household's major expenditures'? The study employed a cross-sectional design, which is observational in nature and is good for descriptive research (Farzin 2010). Through the cross-sectional design, data is collected once (Bailey 1998). Based on the HIS beneficiaries' registers in Njombe and Shinyanga, 402 beneficiary households were randomly selected, this accounts for 5% of all the beneficiary households in the two study regions. Data collection was done in December 2012 through January 2013. Data were collected from 402 randomly selected HIS beneficiaries households using a pre-tested structured questionnaire. To allow triangulation, nine focus group discussion (FGDs) were conducted to complement information collected through the questionnaire.

Data analysis

Data collected were analysed using Statistical Package for Social Science (SPSS 16) to determine frequencies and percentages. The FGD qualitative information was analysed using content analysis which entailed categorization of the information into meaningful verbal strings and organisation of the text into logical pattern.

Results and discussion

HIS beneficiaries' profile

The study involved 402 household respondents of which 65.6% were females and 97% were in the productive age of between 28 and 58 years. Results show that 93.8% of respondents were household heads of which 65.7% were female (FHHs). All had lived in the area for a period of more than 20 years. All 402 respondents lived in their own houses. Most these houses were of good quality; 75.8% roofed with corrugated iron sheets, 69.8% with floors made of cement and 75.8% with walls made of either burnt bricks or concrete blocks. All respondents reported to own land ranging between 1.5 and 10 acres. All respondents reported not to have owned dairy cattle before their participation in the HIS.

Heifer In-Trust Schemes and beneficiaries' households' assets ownership

About one third of the respondents in the study reported that before HIS intervention they lived in family or friend's houses (Table 1). They

reported that involvement in HIS had helped them to access building materials to construct their own houses. They also reported that having good houses enabled them to live in a healthier environment. Over ninety percent of the respondents reported that following HIS intervention they were now able to own land bought with income from their dairy enterprise. In Shinyanga Region, 98% of the respondents reported they previously relied on family land, however, after their involvement in the HIS intervention, 83.2% of the respondents lived on their own land. FHHs in Njombe Region increased their land ownership status from 0% up to 95.7% as opposed to 74.1% of the FHHs in Shinyanga Region, the increase being used for cultivation and cattle keeping. These benefits from dairy farming husbandry are similar to those reported by Mwankemwa (2004) who argued that, household income, current value of durable assets and food security status of a household are among the measures of household welfare. Bayer and Kapunda (2006), in their study on dairy cattle for poverty alleviation in southern the highlands of Tanzania, observed that income from milk sales helped some smallholder families acquire additional land and improve their houses. This is in line with the report of Rutasitara (2002) who argued that wealth in form of assets, land and capital are, in addition, a source for further wealth. In addition FAO/ILRI (2003) showed that, in rural areas, land is the dominant asset and the principal source of income and consumption, of status, wealth and security; and that most rural households with access to land had the ability to produce at least some of their own food requirements.

In appreciating her household's transformation through the use of a motorcycle, a 42 year old woman HIS beneficiary from Uzogole village, Shinyanga Region on 18th January, 2013 said; *"my motorcycle has helped me so much to reduce my work load. Before I got it, I used to walk for six hours to fetch water, but now I hardly use 20 to 30 minutes during the dry season to get water home"*.

Table 1: Household ownership of assets in the study area by sex of household head (n=402)

		Njombe Region				Shinyanga Region			
		Before HIS		After HIS		Before HIS		After HIS	
		MMHs	FHHs	MMHs	FHHs	MMHs	FHHs	MMHs	FHHs
Ownership of a house	Own house	70 (74.5)	94 (88.7)	94 (100)	106 (100)	29 (65.9)	140 (88.6)	44 (100)	158 (100)
	Rented house	2 (2.1)	1 (0.9)	0 (0.00)	0 (0.00)	2 (4.5)	2 (1.3)	0 (0.00)	0 (0.00)
	Family/friend house	22 (23.4)	11 (10.4)	0 (0.00)	0 (0.00)	13 (29.5)	16 (10.1)	0 (0.00)	0 (0.00)
Ownership of a house	Family land	90 (95.7)	100 (94.3)	2 (2.1)	5 (4.7)	40 (90.9)	158 (100)	2 (4.5)	15 (9.5)
	Village permitted land	4 (4.3)	1 (0.9)	2 (2.1)	101 (95.3)	3 (6.8)	0 (0.00)	4 (9.1)	26 (16.5)
	Title deed	0 (0.00)	5 (4.7)	90 (95.7)	0 (0.00)	1 (2.3)	0 (0.00)	38 (86.4)	117 (74.1)
Ownership of Assets	Television	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	5 (5.0)	3 (3.0)	2 (4.0)	4 (3.0)
	Mobile phone	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	38 (40.0)	42 (39.0)	19 (44.0)	79 (50.0)
	Bicycle	3 (3.1)	0 (0.00)	10 (22.7)	2 (1.3)	11 (12.0)	17 (16.0)	15 (35.0)	53 (34.0)
	Solar power	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	31 (33.0)	38 (36.0)	4 (9.0)	15 (9.0)
	Biogas digester plant	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	9 (10.0)	3 (3.0)	2 (4.0)	4 (3.0)
	Motorcycle/*Bodaboda*	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	2 (2.0)	2 (4.0)	3 (1.0)
	Car	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (1.0)	0 (0.00)	0 (0.00)

MHHs refers to male headed households and FHHs is female headed households. HIS is Heifer In-trust Scheme, numbers in brackets indicate percent
Data in ( ) are percentages

The contribution of income from HIS beneficiaries' dairy enterprise on children's education expenses

Before their involvement with the HIS, the beneficiaries were not able to enroll their children in private schools (primary and secondary) (Table 2). After the beneficiaries' involvement, more than three quarters were able to enroll their children in private primary schools and private schools in both Njombe and Shinyanga regions. Subsequently, most of the FHHs respondents in Shinyanga and in Njombe regions reported to have enrolled children between one and five in the schools after the introduction of the HIS. Respondents reported that before HIS they were unable to pay for school fees as well as other school expenses as they had no income and they were very poor. Respondents further reported that after HIS they had milk that brought them food and income. Therefore, they could use the extra income for their children's education. These observations are in agreement with those of Bayer and Kapunda (2006) who reported that income from dairy farming in the southern highlands of Tanzania alleviated poverty and that income from milk sales among other things helped smallholders to send their children to school. This is also in line with the report of Chantalakhana and Skunmum (2002) whose study on the contribution of smallholder milk production in the tropics (Thailand, Malaysia and Indonesia) showed that crop farmers who had turned into small-scale dairy farmers were able to make enough income and savings to give their children college education.

Table 2: Surveyed households' ability to pay children's school fees and other education costs (n=402)

Region	Sex	Enrolment in private primary school before the introduction of heifer in-trust schemes				
		None	One child	Two children	Three children	Four children
Njombe	Male	92 (97.9)	2 (2.1)	0 (0.00)	0 (0.00)	0 (0.00)
	Female	106 (100)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Shinyanga	Male	44 (100)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
	Female	158 (100)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
		Enrolment in private primary school after the introduction of HIS				
Njombe	Male	34 (36.2)	41 (43.6)	13 (13.8)	6 (6.4)	0 (0.00)
	Female	40 (37.7)	39 (36.8)	25 (23.6)	2 (1.9)	0 (0.00)
Shinyanga	Male	5 (11.4)	30 (68.2)	8 (18.2)	1 (2.3)	0 (0.00)
	Female	7 (4.4)	12 (7.6)	112 (70.9)	15 (9.5)	12 (7.6)
		Enrolment in private secondary school before the HIS scheme				
		None	One child	Two children	Three children	Four children
Njombe	Male	94 (100)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
	Female	106 (100)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Shinyanga	Male	44 (100)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
	Female	158 (100)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
		Enrolment in private secondary school after the HIS schemes				
Njombe	Male	4 (4.3)	49 (52.1)	38 (40.4)	3 (3.2)	0 (0.00)
	Female	4 (3.8)	39 (36.8)	44 (41.5)	14 (13.2)	5 (4.7)
Shinyanga	Male	2 (4.5)	9 (20.5)	22 (50.0)	8 (8.2)	3 (6.8)
	Female	2 (1.3)	4 (2.5)	49 (31.0)	93 (58.9)	10 (6.3)

( ) is percentage

There was a significant change in the beneficiaries' life standard improvement that can be associated with the introduction of HIS in the study areas (Table 2). Due to HIS, most households were able to send their children to private schools. In expressing her views on how HIS has increased beneficiaries' household's ability of paying school fees, on 12th January 2013, in Lubaga village, Shinyanga Region, a 42 year old woman during the FGDs said; *"....had it not been the dairy cow I got from HIS, all my family would either be tending livestock of the rich or my young daughter would have been married due to poverty. I am happy that all my children are in school"*.

The contribution from HIS beneficiaries' dairy enterprise to households' health services expenses

 Before the introduction of HIS most of the beneficiary households' in Shinyanga Region reported to have been seeking medical services from traditional healers (Table 3). In Njombe Region the proportions were less. Respondents reported to mostly having attended traditional healing services because they were cheap as compared to modern health facilities such as dispensaries, health centres and even the hospitals. Furthermore, 45% of the respondents in Njombe Region and 54.2% in Shinyanga , mostly attend rdthe traditional healing services because these facilities were close/near to them and that modern health facilities were very few and very far, which meant an extra cost in reaching them.

After the HIS intervention, beneficiaries started to seek attention from modern health facilities because they were now affordable as they had money from their dairy enterprise, made possible through the HIS. This is agreement with the report of Mwakalobo and Shively (2001) who argued that smallholder dairy farming was regarded as one of the best means of providing resource poor farmers with regular income to pay for their children's education and other family necessities such as food and health services. In expressing their views on how HIS has helped them to access quality health services, a 51-year-old woman from Igima village, Njombe Region, on 19 December 2012 said; *"I had nothing at all, I inherited nothing from my parents and now I am able to meet my family's health expenses just like the wealthy ones, wow!"* Another woman aged 55 from Kitangili village, Shinyanga Region, on 15 January 2013 said; *"Thank God for Heifer International Tanzania, who considers poor people like us and how we can get-out of poverty and enjoy life like others; I am now healthier and I can work more for my family development"*. Another woman aged 43 years from Itulike village, Njombe Region on 17th December, 2013 said; *"My health is my future, had it not been for my beloved dairy cattle which I got from HIS, all of my family would have died, for where would we have got the money for health services?"*

The above quotations clearly show that, before the introduction of HIS in the study area, the poor lacked money to meet their medical expenses hence they had limited access to health services, which are very expensive for the poor.

Table 3: HIS beneficiary households health services information by region and sex of household head (n = 402)

Region	Sex of household head	Attending medical services before the HIS		
		Health institutions	Traditional healing	Not applicable
Njombe	Male (n = 94)	8 (8.5)	40 (4.6)	46 (48.9)
	Female (n =106)	7 (6.6)	43 (40.6)	56 (52.8)
Shinyanga	Male (n = 44)	1 (2.3)	35 (79.5)	8 (18.2)
	Female (n =158	5 (3.2)	130 (82.3)	23 (14.6)
		Reasons for going to traditional healing		
		Cheap	Treatment on Credit	Paying with other than cash	Not applicable
Njombe	Male (n=94)	29 (30.9)	3 (3.2)	9 (9.6)	53 (56.4)
	Female (n=106)	36 (34.0)	2 (1.9)	3 92.8)	65 (61.3)
Shinyanga	Male (n=44)	31 (70.5)	1 (2.3)	3 (6.8)	9 (2.5)
	Female (n-158)	119 (75.3)	6 (3.8)	6 (3.8)	27 (17.1)
		Type of attendance to medical facilities after HIS		
		Health facilities	Traditional healers	Not applicable
Njombe	Male (n=94)	94 (100)	0 (0)	0 (0)
	Female (n=106)	106 (100)	0 (0)	0 (0)
Shinyanga	Male (n=44)	44 (100)	0 (0)	0 (0)
	Female (n=158)	158 (100)	0 (0)	0 (0)
		Reasons for attending the improved health institutions		
		Affordable	Doing diagnosis	Trained personnel	Not applicable
Njombe	Male(n =94)	94 (100)	0 (0)	0 (0)	0(0)
	Female(n =106)	104 (98.1)	1 (0.9)	1 (0.9)	0(0)
Shinyanga	Male(n = 44)	42 (95.5)	0 (0)	2(4.5)	0(0)
	Female(n = 158)	154(97.5)	4(2.5)	0(0)	0(0)
		Frequency of attendance to health services		
		Every month	Once a quarter	Every six months	Time of sickness
Njombe	Male (n = 94)	0 (0)	13 (13.8)	17 (18.1)	64 (68.1)
	Female (n = 106)	0 (0)	15 (14.2)	21 (19.8)	70 (66.0)
Shinyanga	Male (n = 44)	0 (0)	6 (13.6)	11 (25.0)	27 (61.4)
	Female (n = 158)	0(0)	20 (12.7)	34 (21.5)	104 (65.8)

( ) is percentage

The HIS beneficiaries income and proportionate expenditure on major household needs

Most respondents in Njombe and Shinyanga regions spent their cash income obtained from HIS on children's education, followed by assets acquisition, food purchases, religious issues, health services, clothes, transport, community development matters and communication with less attention is given to recreational matters (Table 4). On average, more than one third of the cash from the dairy enterprise resulting from HIS was spent on children's education, about a quarter on assets acquisition and one tenth on food. These findings are in agreement with those of Rutasitara (2002) who pointed out that wealth symbolized peace and prestige, a sign that the owner was well off at least by the standards of the respective community. This author cosidered that assets provided people with opportunities and options in the face of impoverishment. Thus, being asset poor limited people's capacity to improve and safeguard their livelihoods.Thus income from HIS has significantly contributed to children's education in the two regions hence enhancing the children's human capital and this lead to the rejection of the null hypothesis that the HIS had not contributed to improvement of the beneficiary smallholder farming households' well-being.

Table 4: Most items and amount and proportion (%) of cash income spent by HIS households (n = 402)

Region	Sex	Amount spent in major key items in HIS beneficiary household in every TZS 100,000 ($60) earned.									
		Children's education		Food		Assets		Health		Community Development	
		n (%)	('000) (%)	n (%)	('000) (%)	n (%)	('000) (%)	n (%)	('000) (%)	n (%)	('000) (%)
Njombe	Male = 94	27 (29.0)	32,000 (32.0)	11 (11.7)	7,000 (7.0)	10 (10.6)	25,000(25.0)	7 (7.4)	5,000 (5.0)	8 (8.5)	7,000 (7.0)
	Female = 106	42 (39.6)	40,000 (40.0)	12 (11.3)	8,000 (8.0)	15 (14.1)	27,000 (27.0)	4 (3.7)	6,000 (6.0)	3 (3.0)	2,000 (2.0)
Shinyanga	Male = 44	14 (32.0)	30,000 (30.0)	6 (14.0)	15,500 (15.5)	8 (18.0)	23,500 (23.5)	3 (6.8)	5,000 (5.0)	3 (6.8)	3,000 (3.0)
	Female = 158	41 (26.0)	43,000 (43.0)	18 (11.3)	11,500 (11.5)	24 (15.0)	22,000 (22.0)	16 (10.0)	4,000 (4.0)	13 (8.1)	2,000 (2.0)
		Recreation		Religion		Transport		Clothes		Communication	
		n (%)	('000) (%)	n (%)	('000) (%)	n (%)	('000) (%)	n (%)	('000) (%)	n (%)	('000) (%)
Njombe	Males	5 (5.3)	5,000 (5.0)	8 (8.5)	5,000(5.0)	4 (4.2)	5,000 (5.0)	7 (7.4)	5,000 (5.0)	7 (7.4)	4,000 (4.0)
		1 (0.9)	500 (0.5)	5 (5.0)	6,000 (6.0)	7 (6.6)	3,000 (3.0)	8 (7.5)	4,500 (4.5)	9 (8.4)	3,000 (3.0)

| Shinyanga | Female | 2 (4.5) | 6,500 (6.5) | 4 (9.0) | 5,000 (5.0) | 2 (4.5) | 5,000 (5.0) | 1 (2.2) | 3,000 (3.0) | 1 (2.2) | 3,500 (3.5) |
| | | 6 (4.0) | 500 (0.5) | 10 (6.3) | 6,000 (6.0) | 10 (6.3) | 3,000 (3.0) | 12 (8.0) | 5,000 (5.0) | 8 (5.0) | 3,000 (3.0) |

USD 1 = 1650 TZS

Conclusions

- Despite the diverse agro-ecological variations between the highland (Njombe) and semi-arid area (Shinyanga) agro-ecological zones, HIS had played a big role in the contribution of smallholder's household major expenses.

- Cash income from HIS had contributed to acquisition of assets that had been used to transform and improve the beneficiary households' livelihoods.

- HIS had increased smallholder's ability to meet their children's education expenses as well as family health expenses.

- HIS had contributed to raise its beneficiaries' social status in their respective homes and communities allowing them to contribute to community development and religious matters

Acknowledgement

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