POVERTY ESCAPE ROUTES IN CENTRAL TANZANIA: COPING STRATEGIES IN SINGIDA AND DODOMA REGIONS

VOL III

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The Economic and Social Research Foundation (ESRF)

2011

www.esrftz.org

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ESRF Discussion Paper No. 40

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ABSTRACT

This volume picks up data from volume I and II of Poverty Escape Routes in Singida and Dodoma regions. It examines major poverty shocks and respective coping strategies that communities apply in the studied areas. The study findings through survey identifies five major categories of shocks as; climatic change causing crop failure, economic hardships, health related shocks causing livestock diseases and deaths, tribal conflicts, as well as policy related shocks causing excessive taxations.

In order to sustain their livelihood, the communities in the central Tanzania have developed coping strategies to poverty shocks; individually or collectively. These include assets possessions, proximity to markets, utilization of common resources, and social capital.

1.0   BACKGROUND TO THE STUDY

Since independence in 1961, the Government of Tanzania has been preoccupied with combating poverty. National efforts to tackle the problem were initially channeled through centrally directed, medium-term and long-term development plans, and resulted in a significant improvement in per capita income and access to education, health and other social services until 1970s. Thereafter, these gains could not be sustained because of various domestic and external shocks, and policy weaknesses.

After a decade of preoccupation with re-establishing macro-economic stability and structural reforms aimed at creating an enabling environment, Tanzania has resumed its focus on poverty reduction. This renewal is part of a global effort for a sustained exit from the poverty trap. The Government undertook various initiatives towards poverty reduction and attainment of social and economic development. Those efforts are found within a broad policy framework, the Vision 2025, which stipulates the vision, mission, goals and targets to be achieved with respect to economic growth and poverty eradication by the year 2025. As an effort to operationalize Vision 2025, the Government formulated the National Poverty Eradication Strategy (NPES), which provides overall guidance to all stakeholders and provides a framework for co-ordination and supervision of the implementation of policies and strategies of poverty eradication.

The Poverty Reduction Strategy Paper (PRSP) was thereafter formulated as a Medium-Term Strategy of poverty reduction, in the context of the enhanced Highly Indebted Poor Countries (HIPC) initiative. Initially, the country implemented PRS I, which lasted for three years (2000/01 – 2003/04). Thereafter, the Government approved the PRS II popular by the name of MKUKUTA (National Strategy for Growth and Reduction of Poverty - NSGRP) in early 2005. The NSGRP keeps in focus the aspirations of Tanzania's Development Vision (Vision 2025) for high quality livelihood, good governance and rule of law, strong and competitive economy. It is committed to the Millennium Development Goals (MDGs), as internationally agreed targets for reducing poverty, hunger, diseases, illiteracy, environmental degradation and discrimination against women by 2015.

The implementation of NSGRP and the broader Vision 2025 at the lower level is done across sectors and regions. It is within this context that the Economic and Social Research Foundation (ESRF) in 2005/2006 conducted a study on poverty escape routes in Central Tanzania which aimed at soliciting data and information on factors for upward and downward mobility of different households and individuals in Singida and Dodoma regions. The study has strong relevance for policy design and monitoring of poverty reduction strategies and policies in Tanzania because, it provides policy insights based on the experiences of those who have actually moved out of

poverty and stayed out of poverty over time, those who have maintained their wealth over time, and those who have fallen down and/or stayed trapped in chronic poverty. The study focuses on a wide range of social, political, institutional and economic mechanisms that hinder or facilitate poor people's access to economic opportunities and movement out of poverty.

Specifically, this discussion paper picks up data from Vol. I and Vol. II of Poverty Escape Routes in Singida and Dodoma regions. It examines major poverty shocks and respective coping strategies that communities apply in the studied areas.

2.0 SHOCKS AFFECTING COMMUNITIES AND HOUSEHOLD PROSPERITY

2.1 Introduction

There are many social, political and institutional conditions that operate at the community and national levels that shape access to opportunities and movement out of poverty, and therefore influence growth that benefits the poor. On the other hand, the conventional factors such as income, geographical location and household demographic pattern, are among the various types of shocks explaining downward mobility of different community members.

Thus, during the field survey respondents in the 8 communities were asked to identify and characterize major shocks that affect lives of the people in their villages and the neighborhood. The findings show that households live in environment characterized by shocks, and sometimes face significant probability of experiencing economic losses that threaten their daily subsistence. The nature of shocks that have implications on poverty are identified below.

2.2 Identification of Shocks

Typically community shocks can be distinguished from individual shocks with the former affecting everybody in the community and the latter only affecting an individual or a household. Important shocks, which affect the lives of people in the surveyed areas of central Tanzania, can be divided in to five categories:

(a)   Climatic Shocks
Climate related shocks include drought, heavy rainfall (floods), lightening that destroys nature and structures like residential houses and bridges, lightning stony rains that destroy crops, and wind storms that destroy nature and structures such as, removing roofs from buildings. Climatic related shocks are real and common in all the surveyed communities of Central Tanzania where drought and floods were the most mentioned shocks.

(b)   Economic Shocks
Shocks related to the economic prosperity of the sampled communities in Central Tanzania were frequently mentioned by respondents to be catastrophic and detrimental to livelihood and overall prosperity of the people. They include shocks affecting production and marketing of agricultural

and livestock products such as transport and transportation, farm inputs, vermin, pests and rodents, and market prices.

(c)   Health related Shocks (Illness or Mortality Shocks)

Like the case with economic shocks, health related shocks were repeatedly reported throughout the surveyed communities in Central Tanzania. Health is therefore a common problem, which cuts across different communities in Singida region. The most common diseases include HIV/AIDS, trachoma, malaria, chest related diseases, eye infections and dysentery.

(d)   Tribal Conflicts, Violence and Crime Related Shocks

Tribal conflicts, violence and crime related shocks are also common shocks affecting prosperity of members of the communities in Central Tanzania. Crime or theft was reported in all the sampled communities while violence is mainly evident in Makale village, Muhalala village and, Manyoni District. The most common violence in Makale is theft related violence and particularly domestic violence, mainly against women. Disputes between different ethnic groups, which culminate to serious tribal conflicts, were reported in Kidarafa community, Iramba District in Singida region. The disputes are recurring and mainly culminating to tribal fights between Wanyiramba and Wamang'ati. Cattle raids are said to trigger the fights.

(e)   Shocks related to Death (and Loss) of Livestock

Livestock keeping is one of the important income generating and therefore source of livelihood in Central Tanzania. Apparently, death of livestock due to diseases and drought, and loss of livestock is among the important shocks affecting communities in the region. This problem was reported by different Focus Groups in all the sampled villages.

2.3   Effects of Shocks on Mobility

The findings show that Central Tanzania has been affected by different types of shocks. While some of the shocks affect the community as a whole, others have tended to affect certain individuals and/or households. Note that, communities have experienced both positive, but in most cases negative shocks have prevailed. Positive shocks are those shocks which have led to community prosperity and moved people out of poverty by way of increasing livelihood economic opportunities. The negative shocks usually tend to counteract positive shocks.

2.3.1   *Positive Shocks*

The major service related shocks in the Central Tanzania are education, water, health and road transport network. However, not all of these services have made positive contribution towards

community prosperity. Evidence from the 4 communities reveals that, education, health and water services have led to community prosperity.

Two primary schools were constructed in Muhalala village, Manyoni District in 2003/2004. The funds were from the Primary Education Development Plan (PEDP) and Tanzania Social Action Fund (TASAF). The construction of schools has made it possible for more school age children to join primary education and relieve the crowded classes from pressure of handling too many pupils. The findings from regression analysis (Vol. I & II) support the existing link between education and community prosperity where three education variables namely, complete primary education, complete secondary education and university education appear with a positive and significant impact on well being of the households in the communities.

Another positive event was noted in Muhalala in the ongoing proposal to rehabilitate and modify the old water wells (small dams) constructed during the Villagization Program in 1973. The total rehabilitation cost was estimated to be TZS 140 million. The main donor was identified as the World Bank. In the spirit of community participation, Manyoni District Council contribute 5 percent of the total cost. Also each household in Muhalala village contribute TZS 8,000. However, the Village Executive Officer (VEO) pointed out that the amount set for villagers is too high for them to afford and this is the reason for delays in project implementation. The reasonable amount would have been TZS 1500. The 3 services namely education, health and water in Muhalala village have significant impact both at community as well as household levels.

Note also that, indirectly there are many other positive shocks, which can be seen indirectly through negative shocks. In other words, the negative shocks have tended to trigger positive effects to the communities thus affecting mobility. For example, economic shocks and climatic related shocks have forced many individuals in Central Tanzania to adopt coping strategies for income diversification, through combining activities. In practice, households in Central Tanzania are usually involved in a variety of activities, including farm and off-farm activities to diversify their livelihood. Other strategies include self-insurance (more so through precautionary savings). Households usually insure themselves, by building up assets in "good" years, and deplete the stocks in 'bad' years. Alternatively, in a few instances, informal arrangements and/or networks (social capital) develop between family members and/or community members to support each other in case of hardship.

2.3.2 *Negative Shocks*

The negative shocks are characterized by negative effects that deter outward poverty mobility; these include agricultural marketing, farm inputs, policy related, vermin weather conditions, health related shocks, etc. as discussed below.

To a larger extent mobility is affected by negative shocks related to agricultural marketing. Essentially, the communities in Central Tanzania have remained predominantly agricultural societies, dealing largely with crop production, with animal husbandry being a secondary activity. The marketing related shocks have many faces such as notable changes in the decline of the importance of wheat as one of the important cash crops.

The surveyed communities have also been facing problems of farm inputs. Lack of appropriate farm implements and agro-inputs – use of the hand hoe has continued to hinder movement out of poverty. Economic related shocks also included inadequate capital for investment in agriculture and other economic activities. As a result, the majority of farmers use the hand hoe for cultivation. It was estimated that about 90 percent of all farmers use hand hoe. In addition, the price of agricultural inputs was very high. For example, a 50 kg bag of NPK fertilizer costs TZS 24,550 while the same amount of CAN fertilizer costs TZS 22,000. These prices were too high for the majority of the farmers to afford.

High prices of ox ploughs were mentioned as another shock. The price for plough ranges between TZS 75,000 and TZS 100,000. Most of the villagers cannot raise this amount of money.

Policy Related Shocks

Government policy shocks consist of both the negative as well as positive shocks. The achievements made in provision of education services through TASAF and PEDP initiatives have partly been positive policy interventions in the country. Such attainment therefore forms part of the positive policy shocks. However, most of the negative shocks such as agricultural marketing, excessive and nuisance taxation and farm inputs related shocks are good examples of the negative government policy shocks in Tanzania.

For example, the state owned marketing agencies played a significant role in agricultural marketing prior to 1980s. However, severe weaknesses and inefficiencies in the system led the State owned organizations to incur heavy operating losses that were sustained temporarily through the unpopular government subsidies (URT 2004c). Subsequently, the government adoption of a liberalized economic policy removed subsidies and opened marketing and agro-processing activities to the private actors.

Similarly, the shocks due to vermin were frequently mentioned in all the 8 communities of Central Tanzania. In Muhalala village for example, destruction of crops by wild animals such as monkeys and wild pigs in the nearby forest and village shrubs is widespread and persistent. In some of the surveyed communities pests and rodents also destroy crops. In Kidarafa village for example, the year 2000 was characterized by higher incidences of pests especially rats, maize weevils and grain borers. The population of rats increased tremendously and they all moved from fields to houses where they ate almost everything on their way (Female FGD, Kidarafa Village, 2005).

Weather related shocks were identified in all groups as number one type of shocks. This include the *El Nino* rains in 1997 that resulted into potential loss of crops, death of animals and some household were washed away. The after math of *El Nino* was an outbreak of malaria which attacked many children, pregnant women and elderly people some of which died. Since *El Nino* there has been a persistent drought and unreliable rainfall resulting into low agricultural yields consecutively. This has in turn resulted into serious hunger since that period. Majority of the people mentioned that they cannot afford full square meal daily. Most of them are getting supper only no breakfast and lunch. The village is therefore food insecure (Women FGD," Kidarafa Village).

Other shocks that were mentioned are related to health condition of members of the surveyed communities, including illness and mortality shocks due to;

i) *Malaria: D*iseases such as malaria tend to create major shocks at an individual or household level. Malaria is widespread in all the 4 surveyed villages. In Makale village, it was found that malaria was the number one killer in the village. Women and children were most affected. Only few people were using mosquito nets (about 15 percent of the total population).

In all categories of FGDs conducted in Muhalala, Malaria is the main disease affecting the community followed by trachoma and HIV/AIDS.

(i) *Trachoma:* Trachoma is also common in all the 4 surveyed villages according to district leaders despite the fact that in some of the community FGDs, trachoma was not mentioned. Lack of enough water is contributing to the increase of this problem, as most people do not wash their faces properly for a number of days.

(ii) *HIV and AIDS*

HIV and AIDS is a universal health shock. It is also a serious problem in the surveyed communities. Awareness about AIDS has been very low in the village. The family members are still taking the alleged patients to witchdoctors believing that they have been bewitched. It was also reported that non-family members of the speculated patients, stigmatize the so-called patients. It is speculated that there are currently around ten (10) AIDS patients (Mixed FGD, Kidarafa Village).

Furthermore, the findings show that shocks related to tribal disputes, violence and crime are also common in some communities. During the survey the tribal conflicts was mainly pronounced in Kidarafa village. Important conflicts include recurrent tribal fights between Wanyiramba and Wamang'ati. Frequent cattle raids by Wamang'ati trigger the fights. The worst of these fights broke in 1985/86 in which many people died and others were displaced from their homes amid fear of being ambushed by the Mang'ati. Significant fights also occurred in 1995/96. About 10 people were recorded dead including a police officer (Mixed FGD, Kidarafa Village).

Cattle diseases cause death and loss of livestock is also widespread shock in the study area. In Muhalala village this problem was ranked third. The diseases are spread by pastoralists of *Sukuma* tribe who have moved into the community with their herds of cattle. Further, traders who transport livestock to Dar es Salaam used to bisect the village on their way to the railway station where the animals board the train to Dar es Salaam. This movement also, spread the diseases in the village.

Throughout the surveyed communities, capital deficiency was reported to be aggravating the economic and social well being of the people. Indeed lack of financial support is another serious problem. Given the current situation, villagers need to be organized into groups to be able to access loans. Unfortunately, currently there are no clear and accessible credit schemes serving the communities.

2.3.3 *Shocks and Mobility: Quantitative Evidence*
During the survey the key informants in the 8 communities were also asked to think back and tell about living conditions in their respective communities during the last 10 years since 1994. The aim was to get perception of a community-wide hardship in terms of wealth and living conditions as well as periods that were good. Table 10 presents the findings on years with hardships and prosperity in terms of wealth and well being of the people.

Table 1:   **Shocks in the Past 10 Years: 1994 – 2004**

Year	Predominant Status (In Percentage of the Total No of Sampled and Surveyed Communities)					Why Very Good	Why Very Bad	Coping Strategies
	Very Good	Good	Average (Normal)	Bad	Very Bad			
1994	12.5	25	50	12.5	0	(i) High crop prices (ii) Bumper harvest	(i) Serious illness (ii) Loss of livestock	(i) Sold asset (ii) Casual labour
1995	0	25	37.5	12.5	25	Returns from assets	Poor harvest due to bad weather	Sold livestock Introduced new crops
1996	0	12.5	62.5	25	0	High crop prices	NA	NA
1997	0	12.5	37.5	37.5	12.5	NA	Poor harvest due to bad weather	Casual labour Relied on support from family and friends
1998	0	12.5	0	0	87.5	NA	Low crop prices	Casual employment Introduced new crops Relied on support from family and friends
1999	0	0	50	0	50	NA	Lost livestock Poor harvest due to bad weather	Sold livestock Sold assets/land Casual employment
2000	12.5	0	37.5	37.5	0	Bumper harvest	NA	Sold livestock
2001	12.5	25	37.5	25	0	Livestock	NA	Took casual employment
2002	0	25	25	37.5	12.5	NA	Poor harvest	Casual employment Relied on support from family and friends
2003	12.5	12.5	25	12.5	37.5	Bumper harvest	Low crop prices Loss of assets Death of family members	Relied on support from organizations Took casual employment Relied on support from family and friends
2004	0	37.5	12.5	25	25	NA	Poor harvest Loss of livestock	Took casual employment Reduced consumption

The findings in Table 13 depict that, over years there has been some variations in terms of living conditions in the surveyed communities. While in some years the living conditions have predominantly been good (2004), in other years the wealth and living conditions have been predominantly average or normal (1995, 1996, 1997, 1999, 2000 and 2001). It is also evident from Table 13 that in 1997, 2000 and 2002 the wealth and living conditions were predominantly bad, while in 1998, 1999 and 2003 the conditions were worse as most communities experienced very bad

wealth and living conditions of the people. These findings also show that the surveyed communities have been experiencing both positive as well as negative shocks discussed above.

2.4   Major Shocks Affecting Communities

Shocks are part of life in the central regions of Tanzania. Climatic risks, economic fluctuations, but also a large number of individual-specific shocks make these households vulnerable to serious hardship. Box 1 gives details on the various shocks and events causing serious hardship to rural households in Singida and Dodoma regions in the last ten years. Not surprisingly, for these regions, climatic events are the most common causes of shocks, but many households suffer from other common or idiosyncratic shocks.

Box 1:   Major Shocks Faced by Rural Households in Singida and Dodoma

- Crop harvest failure resulting from drought, floods, crop disease, pests and rodents
- Livestock diseases and deaths
- Price fluctuations particular with cash crops;
- Labor problems due to illness and deaths;
- Asset losses through theft and fire;
- Wild animals destroying crops;
- Policy shocks including excessive taxation
- Land and tribal conflicts

Shocks can be idiosyncratic (individual) or common. Common community shocks can be distinguished from individual shocks with the former affecting everybody in the community and the latter only affecting an individual or a household. In practice, few shocks are purely idiosyncratic or common. Most shocks have both idiosyncratic and common parts.

3.0.   COPING STRATEGIES AND LIVELIHOODS

3.1   Livelihoods in the Study Region

Before examining the coping strategies adopted, some information on the situation and activities of the people surveyed will set the context. Singida rural areas reflect a clear case of arrested economic development. Many households are very poor (64 percent of the total households surveyed in this study). Most of the population is employed in subsistence agriculture, with a substantial subsistence component as the imputed value of production for own consumption accounts for half of consumption expenditures. Agriculture is rain fed and uses almost no modern inputs, is labor intensive depending primarily on household labor, and uses a few rudimentary tools with an almost complete lack of mechanization. Majority of the households surveyed (34 percent) face food deficits in some months of the year; 20 percent have food deficit throughout the year; 26 percent just have enough food throughout the year (neither experience deficit nor any surplus). Only 14 percent have surplus or adequate food throughout the year (Table 1).

Table 2:   **Household Ability to Meet Annual Food Consumption Needs**

Food Situation	Frequency	Percentage
Food deficit/not adequate food throughout the year	74	20
Deficit/not adequate food in some months of the year	125	34
Just enough food throughout the year/neither experience deficit nor any surplus	95	26
Surplus/adequate food throughout the year	51	14
Non response	22	6
Total	**367**	**100**

Source: HBS 2000

The data, in the above table, from the 2000 Household Budget Survey (HBS) confirms that the health and nutrition status of the population is very poor. There is some degree of variability both in spatial and temporal terms in the kind of livelihood and coping strategies used across the communities surveyed. This is partly because of household accessibility to natural resources, proximity to market and/or town centers, proximity to roads, and seasonality. However, most strategies are very common to households in all the surveyed communities.

3.2   Individual and Household Characteristics

Individual and household characteristics play an important role both in the choice of coping strategies and household expenditure. Household capital assets also play a critical role in choice of coping mechanisms and household expenditure patterns. From the survey, it was evident that a relatively large proportion of households do not own assets of value. The most common household items were bicycles and radios owned by 57.8 percent and 62.9 percent of the households surveyed at the time of the survey (Table 15). Common livestock kept were chicken (63 percent of the households), and on average households owned 2 hectares of un-irrigated annual cropland. There was only slight improvement in assets ownership over the ten years period. However, as for housing, while 85 percent of the households had houses at the time of the survey, it was only 60 percent of the same households who had houses in 1995.

Table 2:   Assets Possession in the Surveyed Communities in 1995 and 2005

	Owned by Household Ten Years Ago	Owned by Households During the time of survey
Household Items (% of Households)		
Car, truck or tractor	0.3	0.5
Animal drawn cart	4.1	7.4
Motorcycle	1.4	0.8
Bicycle	35.4	57.8
Radio or cassette player	46.3	62.9
Refrigerator	1	1
Kerosene cooker	4.4	5.4
Sewing Machine	4.4	4.6
Livestock (Average Number)		
Oxen	9	10
Cows	20	25
Goats	30	37
Sheep	10	14
Pigs	5	6
Chicken	57	63
Land (Average Hectares)		
Irrigated land	0	0
Un-irrigated annual crop land	2	2
Un-irrigated permanent crop land	0	0
Grazing land/waste land	0	0

Poorer household groups invariably have less access to or possess fewer assets while the mix and nature of these assets typically allow for less flexibility. This impoverishment in turn prohibits

them from undertaking certain strategies including those that specifically benefit the resource-rich. Possession of assets provides a buffer against bad times either as a form of insurance to smooth consumption or to enable income diversification (e.g. possession of livestock, crop produce and other household properties that could be sold in times of food shortages.

3.3   Proximity to Markets

Households also adopted certain coping mechanisms depending on the availability and easy exploitation of resources. Access to these resources creates an important opportunity to the households, which can in turn utilize them, and derive a stream of benefits. One important aspect in the access and utilization of resources is the proximity to markets, and sometimes, the town centers, where the households could get much wider options, and better value for the resources. Proximity to market and/or town center has a significant influence on the households' choice of coping strategies. All the communities surveyed in Singida and Dodoma regions did not have easy access to markets. A major disadvantage to the poor and those far away from the market and/or town center is lack of opportunities to improve their welfare. The poor are likely to remain poor or become poorer, while those who are better off can usually improve their lot still further.

3.4   Quantity, Quality and Mix of Assets

Livelihood strategies are deemed successful when the quantity, quality and mix of assets available to a household (or individual) are sufficient to withstand adverse events without compromising future survival. They are also dependent upon resources associated with the community at large. These might include common pooled resources such as forests, water resources, general agro-ecological conditions, and infrastructure including roads, marketplaces, communication and energy facilities.

It would be worth mentioning at this juncture that the limited assets that the poor control, together with the nature of their livelihood, keep them in poverty. And closely linked to this aspect are the food security strategies, which have both positive and negative impacts to household's long-term welfare. This is particularly the case since many poor households poses very few assets (and sometimes none at all), and in most cases, the only item that is readily available for sale in events of negative shocks are the stored crops. These crops therefore provide an immediate way to cope with shocks, but again the sale of these crops is a serious threat to household food security in the future. In this context, not all coping mechanisms used in the surveyed communities are effective in meeting household food security.

3.5   Community Coping Mechanisms

Coping mechanisms in the community involves self-insurance (more so through precautionary savings). They deal with the consequences (*ex-post)* of income risk (consumption smoothing). Households usually insure themselves, by building up assets in 'good' years, to deplete the stocks in 'bad' years. Alternatively, in a few instances, informal arrangements develop between family members, groups or associations to support each other in case of hardship.

Coping strategies appear to vary in terms of timing, sequence and precise content. However, from the responses given in Singida, it appears that most households will protect their longer-term productive base over their shorter-term consumption needs. Hence, the first response to a crisis would ensure that assets are preserved. Drawing from the focus group discussions, the first responses would include borrowing money, asking for assistance from relatives or friends, and selling out labour. At some stage in the process, households begin to sell off their assets, starting off with consumer inventories such as crops, but inevitably productive assets as well including livestock, and land, and other assets such as radios, bicycles and mattresses.

3.6   Selling Assets

Starting off with consumer inventories such as crops, but inevitably productive assets including livestock, land, and other household items such as radios, bicycles and mattresses is another important coping strategies. In this category, selling of crop products was considered to be the commonest strategies to cope with immediate shocks in the region. Households keep a portion of what they harvest for this purpose. Under an emergency situation, crop products are sold so as to get the urgently required income. Selling of livestock is also a common coping strategy. Unfortunately, a relatively large proportion of households do not own cattle, which would have been of more value, even though cattle are important in the farming system and in their culture. The majority of the villagers own chickens, which are easy to dispose, but fetch only limited amounts of money.

3.7   Casual Agricultural Wage Employment (Selling Labour)

This is another common strategy employed in the study area. It usually involves all forms of farm related manual works, including ploughing, weeding, harvesting, and even chopping and collecting firewood. Unfortunately, in many of the communities, farm labor is often rewarded with food instead of cash money. This strategy might not be very helpful if one is in immediate need of cash.

3.8 Social Capital

Social capital means the quantity and quality of associational life and the related social norms. The survey instrument used in the survey asked individuals a variety of questions about several dimensions of social capital. First, individuals were queried about their membership in various voluntary associations, groups or networks to investigate the raw magnitude. For each group in which an individual reported membership, questions were asked about that group's characteristics in several dimensions relevant to that group's contribution to social capital. Another dimension is trust and solidarity both amongst the villagers and between villagers and the local government. Some people get along with others and trust each other, while others do not. Another dimension is social cohesion, which investigates if factors such as religion, social status, or wealth divide people or bring people together.

Another dimension of social capital could be explained in terms of ability to borrow. *Borrowing money* is the commonly adopted coping strategy for an immediate shock. Formal credit schemes were typically absent in the study areas. Borrowing from informal sources not a very reliable strategy due to the fact that the levels of income and savings amongst villagers and relatives are small. Borrowing money is closely associated with mortgaging assets, farms and households. Assets mortgaged include radios, bicycles, and other small household assets. Money borrowed is associated group networks and social cohesion.

3.9 Groups and Networks

Generally, there were very few individuals who were members in various voluntary associations, groups or networks in the surveyed areas at the time of the survey. About 30 percent of the surveyed individuals were members of one political groups or social or economic association. About 17 percent of the surveyed individuals were members of one religious group or association, and 14 percent were members of a group or association related to some economic activity (marketing cooperative society). Other categories of groups or associations which were credit or savings, health or education had 5 percent and 2 percent of the surveyed individual being members respectively. These statistics reflect an insignificant contribution of groups and networks to social capital in the surveyed areas since most individuals were not members of any group or association. As a result, groups and network in the regions have not been effective in assisting the majority of households to cope with shocks.

Exploring the nature of membership to the different groups or association in the study area, only a few groups or associations had membership being "exclusive" to a particular gender, religion, clan or ethnic group, occupation or educational background (Table 16). Thus, most of the group's membership is "inclusive" and any given individual's membership in that group contributes more to social capital than membership in a group that is exclusive. It was also observed that only 14 percent of the groups or associations interact frequently with groups outside the village or neighbourhood.

Table 3:   **Basis of Membership to Groups and Associations**

Criteria	% of Groups or Associations Based on Specified Criteria
Gender	8
Religion	15
Ethnic or linguistic background race/caste	11
Occupation	21
Educational background or level	14

Trust and solidarity are important attributes of social capital, which are also very useful for some of the coping strategies discussed earlier including borrowing money from friends and relatives. Perceptions on the level of trust and solidarity in the surveyed communities were divided. While 55 percent of the sampled individuals perceived that people could be trusted, only 45 percent indicated that most people could not be trusted. However, in terms of willingness to help, there was some consensus with 82 percent of respondents believing that most people in the village are willing to offer help if you need it. The limitation would probably be the inability to help in times of shocks, particularly with community-wide shocks such as drought, which affect everybody in the village.

Collective action and cooperation is another attribute showing the quality of associational life and the related social norms in the communities. The attribute is important in explaining the level of assistance that households could expect from other community members when impacted by shocks. Responses given by sampled households in the surveyed areas showed that in situations of both community wide and individual shocks, collective action and cooperation prevails in the communities. On average, households participated 2 to 3 times in community activities per year. These are activities in which people come together to do some work for the benefit of the village/neighborhood. When asked how likely is it that people would cooperate to try to solve a problem that arises in the village, about 62 percent of the sampled households believed that it was very likely. If something unfortunate (such as illness or a house burning down) happened to someone in the village, 79 percent of the sampled households believed that it was very likely that

people in the community would get together to help this person. These results indicate a high level of associational life when it comes to collective action and cooperation. Seeking assistance was mentioned during the focus group discussions as one of the coping strategy adopted. However, despite having the will to assist in times of shocks, again for many households the problem would be the inability to do so, particularly with community-wide shocks such as drought, which affect everybody in the village.

Social cohesion is another attribute of social capital that was explored in the surveyed areas. The objective was to find out to what extent differences such as religion, social status or wealth divided people in the communities. It came out very clearly that on average; such divisions do not exist with 62 percent of the sampled households saying that there were no divisions. Only 22 percent thought that divisions existed to a small extent. These responses were almost the same when reference was made on the situation ten years ago. When asked if such divisions might have led to violence in the village or neighborhood, 855 said no. When respondents were asked if they ever felt discriminated against when they tried to buy something, enter a place, use a service, or in any other circumstance, 90 percent said no. Again these results show an associational life that is free from discrimination. This is a positive attribute of social capital that can be exploited during times of shocks in terms of seeking assistance from different segments of the society without fear of being discriminated on the grounds of religion, social status or wealth.

The assessment of coping mechanisms in the surveyed region shows that households adopt a range of coping strategies to support their family during times of hardship. There is little variability and heterogeneity, both spatially and temporal in the kind of coping strategies used across communities surveyed. However, there were some shocks (sometimes unconventional) which, due to their nature, the communities had little, or sometimes nothing to do, to cope with them. This is due to the fact that the effectiveness of the mechanisms to cope with these shocks depend largely on the action to be taken by some other authorities/institutions, or individual commitment, rather than community efforts. These include: Vermin (threat of animals) – which is usually expected to be dealt with by wildlife authorities; Theft, which is partly expected to be dealt with jointly by the Police, local authorities and the community[1]; and Drunkenness, which is largely a matter of personal commitment to deal with individual behavior.

a) **Vermin:** The threat of animals (vermin) was common in all villages studied in the Central regions. The wild life authority was mentioned not to be keen in finding a permanent solution to vermin problems.

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[1] Due to corruption (and lack of accountability by some community leaders), theft incidences are not properly dealt with, and sometimes people do not report these cases because they cannot afford the "corruption fees" involved in handling them.

b) **Drunkenness:** Alcohol abuse featured as a structural factor for downward mobility for majority. Alcohol abuse erodes households' income and staple food, and may result to unintended physical and sexual abuses that may further results to HIV infection. On the contrary, local brewing was found to be a very important source of off farm income, particularly for poor women. The widespread argument behind alcohol abuse is that people in rural areas have nothing to do especially during the agricultural off-season, thus they engage in drinking habits in order to break the boredom. Thus, alcohol abuse is structural in the sense that it is caused by the structure of the economy, not individual behavior. However, research has also shown that people do drink (especially men) even during agricultural season and that is why some villages have set by laws on what time the local brew pubs should be opened, and the owners of the pubs who violate these by law plus the perpetrators are fined.

c) **Theft:** Theft or cheating was mentioned in Makale village (Singida). In all instances mentioned, theft had pretty devastating consequences, especially when items were stolen from poor people, and the consequences appeared to be long lasting. Further, solving theft cases involves a long bureaucracy and corruption.

4.0   CONCLUSION AND POLICY IMPLICATIONS

The main objective of this research was to collect qualitative and quantitative data essential for better understanding of poverty escape routes in the Central Tanzania. Although the sample cannot adequately justify generalizations, given the homogeneity of communities in the Central Zone, these findings are robust and they can be used as starting point for interventions aimed at understanding the poverty escape routes, shocks and coping strategies in the Central Zone. Below are some of the key conclusions and potential policy implications.

Several poverty escape routes were drawn from the case study. All the villages surveyed accentuated the importance of agriculture for both income and food. Households relied on their plantation with sunflower, groundnuts, and tobacco as cash crops and maize, millet, sorghum, and cassava as main food crops. It can be concluded that engaging in agricultural production of cash crops that have reliable market such as tobacco can contribute to households' upward mobility. However, the agricultural sector is constrained with climatic shocks. To overcome the shocks, the study recognizes the role of the private sector in providing agricultural inputs, extension services, and reliable market for cash.

More cognizance was on the formal organizations such as Primary Cooperative Societies as instrumental in providing loans for investing in agriculture and even consumption loans during times of hardship. These should therefore be promoted.

The use of agrochemicals to preserve foodstuffs after harvest was mentioned as key to sustainable food security. Examples provided include the use Actellic Super Dust to dry maize after harvesting. The maize could stay for about one year without being devoured by insects like the larger grain borer.

Furthermore, diversification of income sources, for instance, coupling agriculture with a non farm income is instrumental in escaping from the poverty. This is due to the fact that drudgery is reduced during off farm season by engaging is another equally productive nonfarm activity.

Good governance is also an input in escaping from poverty. Two major governance lessons have been drawn from the study: i) Proper resolution of conflicts reduce poverty. This is clearly seen in the way the tobacco companies resolved the problems with farmers who evaded loan repayment. Involving the government authorities to resolve the conflict amicably and not pulling out is a positive lesson; ii) Pressing people at the grassroots to abide by rules, regulations and policies contributes to sustainability of rural development programs.

In conclusion, the study observed that the Government has formulated various policies to address poverty vulnerability. However, there is still inadequate institutional mechanism and capacity at the grassroots to ensure implementation of the formulated policies and strategies, and in most cases, people at the community level are not aware of the presence of these policies. Potency of policies to address vulnerability in rural areas, and agriculture sector in particular has been limited by lack of institutional mechanism to enhance productivity and improve farmers' access to markets, which have led to limited impact of these policies. Understanding specific poverty shocks in specific geographical areas may ease the development of coping strategies. This study has paved an important way of improving poverty escape routes in Tanzania that are geographically sensitive.

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APPENDIX I: DETAILS OF REGRESSION RESULTS FOR VOL. I & II

Table A- 1: Frequencies of the Variables used in Regression Analysis

Variables	Percent (N=309)
Male head of the household	86.8
Non poor households	36.4
No school and illiterate	15.9
No school but literate	2.8
Completed primary school	56.6
Completed secondary education	2.5
University education	2.5
Trader as a primary occupation	10.7
Animal car	8.2
Bicycle	59.1
Radio	64.2
Milling machine	3.3
Kerosene	5.5
Sewing	4.6
Private well	1.2
Latrine	85.1
Flush toilet	4.6
Type of wall	29.5
Type of roof	46.5
Member to economic associations	14.9
Member to credit associations	5.2
Member to political associations	30.4
Member to Religious associations	18.1
Aggregate measure of asset	77.1
Aggregate measure of amenities	94.9
Aggregate measure of membership to associations	41.1
Health shock	51.4
Received credit for consumption	24.5
Daily market in the community	37.1
Daily transport past the market	89.3
Period market in the community	45.6
Dispensary located in the community	47.8
Health Centre located in the community	33.7
Health worker based in the community	50.0

Table A- 2:   Descriptive Statistics of the Variables used in the Analysis

Variables	N = 309		
	Mean	Minimum	Maximum
Step on the ladder of life in relation to welfare	4.0 (2.1)	1	10
Step on the ladder of life in relation to power	4.9 (2.6)	1	10
Step on the ladder of life in relation to happiness	5.2 (2.5)	1	10
Age of the head of household	44.4 (13.6)	12	97
Household size	5.7 (2.7)	1	21
Land owned (acres)	9.3 (14.8)	0	127
Oxen	0.3 (1.0)	0	8
Cow	2.2 (6.5)	0	60
Mules	0.1 (0.7)	0	7
Goats	2.6 (4.9)	0	32
Sheep	0.6 (2.3)	0	27
Pigs	0.3 (1.7)	0	15
Chicken	6.3 (8.9)	0	84
Number of rooms in the main house	3.0 (1.8)	0	16
Aggregate measure of livestock/Livestock units	2.4 (5.4)	0	45
Distance to the daily market (km)	10.0 (11.6)	0	36
Distance to the nearby hospital (km)	22.8 (15.9)	5	50

(a) Standard deviations are in parenthesis.

Table A- 3:   Regression Analysis Results (Model 1)

Variables	Coefficient	Standard Error	t-statistic
Household size	-0.025	0.044	-0.57
Sex	0.192	0.286	0.67
Age	-0.044	0.041	-1.07
Agesqr	0.000	0.000	1.25
NoschIL	0.166	0.382	0.44
NoschLI	1.385*	0.786	1.76
Primcomp	0.589**	0.293	2.00
Secincomp	0.618	0.746	0.83
Seccomp	1.431**	0.653	2.19
Univ	1.887***	0.565	3.33
Yearedu	0.026	0.057	0.46
Trader	-0.014	0.280	-0.05
Animcar	0.033	0.335	0.10
Bicy	-0.339	0.243	-1.40
Radio	0.408	0.271	1.50
Kerosi	0.388	0.413	0.94
Sewing	-0.008	0.513	-0.02
Milling	1.253**	0.557	2.25
Oxen	0.046	0.104	0.44

Variables	Coefficient	Standard Error	t-statistic
Cow	0.011	0.032	0.35
Mule	-0.088	0.160	-0.56
Goat	0.066***	0.022	2.91
Sheep	0.071*	0.040	1.76
Pig	-0.019	0.057	-0.34
Chick	-0.010	0.133	-0.81
Land	-0.000	0.007	-0.12
Tapin	2.449**	1.161	2.11
Privwell	0.118	1.319	0.09
Rooms	-0.033	0.063	-0.53
Flutoil	0.114	0.474	0.24
Latrine	0.134	0.310	0.43
Wall	0.633***	0.221	2.86
Roof	0.584***	0.208	2.80
Creditcons	-0.126	0.197	-0.64
Health	0.001	0.002	0.54
Econassoc	-0.236	0.454	-0.52
Creditassoc	-0.230	0.492	-0.47
Politassoc	0.490	0.340	1.44
Religassoc	0.386	0.289	1.33
StatusNP	0.195***	0.043	4.47
StatusNH	0.195***	0.041	4.70
Distmark	-0.035	0.016	-2.12
Periodmark	0.385	0.321	1.20
Transmark	0.468	0.677	0.69
Disp	-0.954	0.701	-1.36
HeaC	1.564***	0.501	3.12
Disthosp	-0.003	0.003	-1.07
Heaworker	-0.513	0.362	-1.42
Asset	-0.028	0.355	-0.08
Ammen	-0.325	0.494	-0.66
Assoc	0.473	0.396	1.20
Livest	0.027	0.041	0.67

R-squared = 0.65, Adjusted R-squared = 0.56, observations=309.

* shows significance at 10% level

** shows significance at 5% level

*** shows significance at 1% level

Table A- 4:   Regression Analysis Results (Model 2)

Variables	Coefficient	Standard Error	t-statistic
Household size	0.005	0.039	0.14
Sex	0.245	0.290	0.85
Age	-0.058	0.041	-1.41
Agesq	0.000	0.000	1.54
Yearsedu	0.079**	0.038	2.05
Trader	0.130	0.276	0.47
Creditcons	-0.195	0.197	-0.99
Health	0.000	0.002	0.38
StatusNP	0.193***	0.042	4.53
StatusNH	0.255***	0.041	6.15
Distmark	-0.028*	0.162	-1.73
Periodmark	0.372	0.316	1.18
Transmark	0.447	0.663	0.67
Disp	-0.633	0.585	-1.08
HeaC	1.367***	0.334	4.09
Disthosp	-0.001	0.003	-0.39
Heaworker	-0.393	0.332	-1.18
Asset	0.337	0.225	1.50
Ammen	0.228	0.382	0.60
Assoc	0.084	0.231	0.37
Livest	0.068***	0.016	4.06

R-squared = 0.55, Adjusted R-squared = 0.52, observations=309;

*   shows significance at 10% level

**   shows significance at 5% level

*** shows significance at 1% level

Table A- 5:   Regression Analysis Results (Model 3)

Variables	Odds Ratio	Robust Standard Error	Z
Household size	0.845	0.102	-1.38
Sex	0.338	0.242	-1.51
Age	0.907	0.075	-1.17
Agesq	1.001	0.001	1.38
NoschIL	0.768	0.736	-0.28
NoschLI	30.522**	40.423	2.58
Primcomp	1.768	1.185	0.85
Secincomp	8.373*	11.082	1.61
Seccomp	22.601**	26.906	2.62
Univ	57.677***	56.921	4.11
Yearsedu	1.035	0.111	0.32
Trader	0.548	0.352	-0.93
Animcar	0.843	0.912	-0.16
Bicy	0.119***	0.070	-3.61

Variables	Odds Ratio	Robust Standard Error	Z
Radio	1.673	1.242	0.69
Kerosi	1.079	0.817	0.10
Sewing	0.367	0.3555	-1.03
Milling	4.240	3.899	1.57
Oxen	0.884	0.223	-0.49
Cow	0.951	0.075	-0.64
Mule	0.413*	0.202	-1.80
Goat	1.335***	0.116	3.34
Sheep	0.898	0.160	-0.60
Pig	1.076	0.173	0.46
Chick	0.967	0.034	-0.95
Land	1.026	0.021	1.23
Privwell	9.993	25.585	0.90
Rooms	0.967	0.174	-0.18
Flutoil	0.587	0.531	-.059
Latrine	0.487	0.489	-0.72
Wall	1.998	1.067	1.30
Roof	3.313**	1.586	2.50
Creditoons	0.981	0.459	-0.04
Health	1.007	0.005	1.32
Econassoc	0.937	1.118	-0.05
Creditassoc	4.716	7.969	0.92
Politassoc	1.290	0.912	0.36
Religassoc	1.473	0.986	0.58
StatusNP	1.278**	0.130	2.41
StatusNH	1.705***	0.207	4.39
Distmark	0.871**	0.050	-2.38
Periodmark	35.248**	44.994	2.79
Transmark	53.763	141.416	1.51
Disp	7.673	17.767	0.88
HeaC	0.898	1.272	-0.08
Disthosp	1.009	0.011	0.94
Heaworker	0.333	0.303	-1.21
Asset	1.906	1.754	0.70
Ammen	2.286	3.477	0.54
Assoc	0.623	0.639	-0.46
Livest	1.074	0.085	0.90

Pseudo R-squared = 0.51, observations=307, Log pseudo-likelihood = -97.4485;

* shows significance at 10% level

** shows significance at 5% level

*** shows significance at 1% level

Table A- 6:   Regression Analysis Results (Model 4)

Variables	Odds Ratio	Robust Standard Error	Z
Household size	0.927	0.058	-1.21
Sex	0.452	0.257	-1.40
Age	0.938	0.062	-0.96
Agesq	1.001	0.001	1.10
Yearsedu	1.108	0.080	1.41
Trader	0.609	0.296	-1.2
Creditcons	0.938	0.343	-0.17
Health	1.004	0.004	1.01
StatusNP	1.197**	0.093	2.32
StatusNH	1.621***	0.134	5.85
Distmark	0.911**	0.033	-2.56
Periodmark	9.969***	7.304	3.14
Transmark	7.069	11.460	1.21
Disp	2.763	3.256	0.86
HeaC	0.983	0.619	-0.03
Disthosp	1.011	0.007	1.59
Heaworker	1.049	0.736	0.07
Asset	1.537	0.773	0.85
Ammend	1.386	0.909	0.50
Assoc	1.129	0.494	0.28
Livest	1.068**	0.032	2.18
Land	1.105	0.017	0.93

Pseudo R-squared = 0.35, observations=309, Log pseudo-likelihood = -131.2101;

*   shows significance at 10% level

**   shows significance at 5% level

*** shows significance at 1% level

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