

**VILLAGE TRAVEL AND TRANSPORT PROGRAMME, PEOPLES'  
INCOME, COMMUNITY PARTICIPATION AND ACCESS TO SOCIAL  
SERVICES IN KILOLO DISTRICT - IRINGA**

**BY**

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## **ABSTRACT**

Despite that VTTP was introduced in Tanzania over the two decades ago, there is inadequate information among the community members on its contribution of such projects to people's livelihood and levels of participation. Inadequate rural transport infrastructure and lack of mobility pose constraints to rural development in Sub-Saharan Africa including Tanzania. Without physical access to various social-economic services, centres rural communities would have difficulties in obtaining health, education and other social services. This study aimed at assessing the contribution of Village Travel and Transport Programme in improving people's income, access to social services and enhancing community participation to development processes in Kilolo District. A cross-sectional research design was adopted and data were gathered from a sample of 120 households from four villages namely Lulanzi, Ukumbi, Utengule and Msalali. The primary data from the questionnaire was analysed using descriptive and inferential statistics. The study revealed that there was no income obtained by directly participating in the VTTP, but from other activities as a result of the presence of the road works. The findings, further, indicate that with improved rural roads there was improved access especially to social and economic services located away from the villages. In some villages, where the programme was not fully completed especially the construction of bridges and culvert, people were still facing difficulties in accessing some of social and economic services. Regarding community participation in rural road works, the study reveals that, the majority of the people participated through various ways. It was noted further that the community was highly involved in implementation and poorly involved in planning, monitoring and maintenance. Based on the findings, it

could be suggested that the government should ensure that earlier projects are completed before initiating and supporting new projects. This would encourage communities to participate more to ensure sustainability than otherwise.

**DECLARATION**

I, Ebeneza Joram Mlinga do hereby declare to the SENATE of Sokoine University of Agriculture that this Dissertation is my own original work and that it has not been nor concurrently being submitted for a higher degree award at any other institution.

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The above declaration is confirmed

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**Date**

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**DEDICATION**

This Dissertation is dedicated to my beloved parents Joram O. Mlinga and Elinjikaya Joram who played a central role in shaping and moulding my life. May God give them more blessing for their entire life.



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## LIST OF ABBREVIATIONS

CDD	Community Driven Development
DANIDA	Danish International Development Agency
DED	District Executive Director
DFID	Department for International Development
DRA	Directorate of Regional Administration
DSC	Directorate of Sector Coordination
FINIDA	Finish International Development Agency
GDP	Gross Domestic Product
ILO	International Labour Organisation
IMT	Intermediate Means of Transport
IRDP	Institute of Rural Development Planning
MDGs	Millennium Development Goals
MKUKUTA	Mkakati wa Kukuza Uchumi na Kupunguza Umaskini
	Tanzania
NGO	Non Governmental Organisation
NMT	Non Motorised Transport
NORAD	Norwegian Agency for Development Cooperation
NSGRP	National Strategy for Growth and Reduction of Poverty
PMO RALG	Prime Ministers Office Regional Administration and
	Local Government
PRA	Participatory Rural Appraisal
SDC	Swiss Agency for Development and Cooperation
TANAPA	Tanzania National Parks
TANROADS	Tanzania Roads Agency
TAS	Tanzanian shilling
TASAF	Tanzania Social Action Fund
URT	United Republic of Tanzania
VTTP	Village Travel and Transport Programme





## CHAPTER ONE

### 1.0 INTRODUCTION

#### 1.1 Background

The reduction of poverty in developing countries is mainly hindered by insufficient infrastructure services (Maliyamkono and Mason, 2006). Infrastructure is very important to the social economic development of any country regardless of scale, whether local, regional or national. This is because infrastructure facilitates mobility of factors of production, reduces transportation costs and time, and facilitates the expansion of markets, which enhance efficiency in the market operations (Nair and Kumar, 2006).

Grooatert (2006) shows further that investment on infrastructure contributes to economic growth and quality of life as it contributes to reduction of the cost of production, by enabling the diversification of the economy, through making other factors of production more productive. Quality of life is improved by creating amenities in the physical environment and by providing outputs, such as transportation and communication, which are valued in their own right (Windle and Cramb, 1997). At the household level, rural roads can lead to increased agricultural production and open up alternative on non- farm employment, resulting in both higher earnings and more diversified sources of income. In addition, roads contribute directly to household wealth by having a positive impact on real estate values (Obare *et al.*, 2003).

The absence of roads in rural areas frequently necessitates the practice of head loading of firewood, water and crops. The establishment of roads can reduce this burden and allows more time of engaging in more productive income-earning activities. Along these lines, women are mostly responsible for head loading thus becoming the main beneficiaries of the improved rural roads as it would allow them more time for other employment opportunities and improved child care (Doran, 1996).

The short and long term positive impacts of transport projects, particularly on low income groups, are not well understood. In poor rural areas, lack of adequate and reliable transport can penalize households engaged in cash crop farming; reduce opportunities for non-farm employment and access to social services. In this respect, rural roads contribute to poverty reduction by alleviating main constraints faced by the poor in accessing jobs, markets, and other services.

Tanzania has a total road network of about 85 517 km. This includes trunk and regional roads amounting to 28 892 km which are managed by TANROADS, and feeder roads totalling 56 625 km managed by Local Government Authorities. There are also some unclassified roads such as those managed by Tanzania National Parks (TANAPA), Mining Companies and Village Authorities whose total length cannot easily be quantified (URT, 2007). Of 56 625 local government roads, 7907 km (14%), are in good condition, 23 334 km (41.2%) are in fair condition, 19 384 km (44.8%) are in poor condition (URT, 2007).

As indicated by Kesogukelewe (2005) most of the poor road networks are found in the rural areas where more than 70% of the population lives. Poor road networks have negative impact on the livelihoods of the rural population as they make access to social services, markets and agricultural inputs to more costly hence reducing good livelihood opportunities of the rural poor (Davis, 2000; 2001). On the other hand, improved rural road networks enables ease access to market, schools, and health care facilities and at the same time encourages investments in rural areas and reduce seasonal or other weather related road closures (Grootaert, 2002).

In recognizing the importance of roads as a catalyst to rural development, Village Travel and Transport Programme (VTTP) was formulated by the Tanzanian Government in 1992. The implementation of this programme started in 1994 in Rufiji, Iringa Rural/Kilolo, Mbozi, Muheza, Iramba, Masasi and Morogoro Rural Districts. VTTP aims at improving rural people's livelihoods through making sustainable improvement in rural travel and transportation. Specific objectives of this programme include:

- Reducing the time a household spends in transport activities;
- Empowering communities to build capacity in development and maintenance of transport infrastructure such as community roads, footpaths/tracks; and
- Promoting the use of and maintenance of intermediate means of transport among others.

The programme is participatory in nature and labour based. It utilises local labour and encourages women and youth to be involved in planning, implementation and maintenance of improved roads. This is as well ensuring gender balance for ownership and sustainability purposes (Lwoga, 2006; URT, 2008a).

In Kilolo, VTTP has enhanced the improvement of infrastructure by constructing rural roads, foot paths, and bridges. It has also disseminated simple technology which emphasised the use of non motorised technology, tree planting and capacity building (URT, 2003a).

Despite the general consensus on the importance of the VTTP and some vivid evidence showing that road infrastructure rehabilitation exerts significant impact on the life of the people in various places; there is little information on the size and nature of the benefits and distribution of VTTP impacts on the livelihood of the local people in Kilolo District. Therefore, this study addressed the manner in which the programme involved the community in its planning and implementation and the manner in which it has benefited the communities in Kilolo District in terms of income and access to social services.

## **1.2 Statement of the Problem**

Infrastructure is very crucial in rural development. Lack of good transport and communication is one of the main handicaps in rural development (Kapinga, 2007). Investment in rural roads play a major role in supporting economic welfare of the people by providing them with access to social facilities such as education, market and health care.

Some of the studies on the road aspect include the one by Gabagambi (2003) and Sieber (1996) which reveals that the investment in road infrastructure has influenced agricultural productivity. Despite, the implementation of VTTP in Kilolo since 1994, there is scant information on this particular new programme and that information on the mode of community involvement, incomes and access to social services in Kilolo District is inadequately documented. Therefore, this particular study focused on rural road networks and intended to show how the road works have directly contributed to peoples' income, enhanced community participation and access to social services in Kilolo District.

### **1.3 Justification of the Study**

It is widely believed that roads can catalyze rural development if there are enough good ones to ensure access to inputs and transportation of agricultural surpluses to the markets and ease access to social services.

However, most of rural transport and other infrastructures have failed to speed up rural development and poverty reduction. The Government has initiated many investments aimed at rural development through provision of road. The failure of this strategy of having an impact on rural development in spite of the massive investments and community involvement is behind the motivation of the current study which intended to establish what is actually taking place particularly on VTTP.

This study therefore, would fill the existing information gap and add to the knowledge base that would be useful in improving the performance of VTTP and other related programmes. It provides information that would be used by policy and decision makers and local communities covered by the programme. The study is also in line with Tanzania Development Vision 2025, National Strategy for Growth and Reduction of Poverty as famously known as *MKUKUTA* and the National Transport policy and Rural Development Policy all of which recognize the need for improved rural road networks for development and poverty reduction.

#### **1.4 Objectives**

##### **1.4.1 Overall objective**

Generally the study aims at assessing the impact of Village Travel and Transport Programme on people's income, community participation, and access to social services.

##### **1.4.2 Specific objectives**

Specifically the study intended to:

- i. Identify the income generating activities associated with the VTTP in Kilolo District;
- ii. Examine the role of VTTP towards access to social services in Kilolo District; and
- iii. Assess the level of community participation in the VTTP in Kilolo District.

## 1.5 Research questions

The study was guided by the following questions:

- i. What are the activities associated with VTTP in Kilolo District?
- ii. What are the income generating activities associated with VTTP?
- iii. What are the activities undertaken in Kilolo District which are not associated with the programme?
- iv. What are the income generating activities, which are not associated with the programme?
- v. What is the role of VTTP on the community's access to social services?
- vi. What is the level of community participation in the programme?
- vii. What benefits are realized by the local people through involving themselves in the programme?

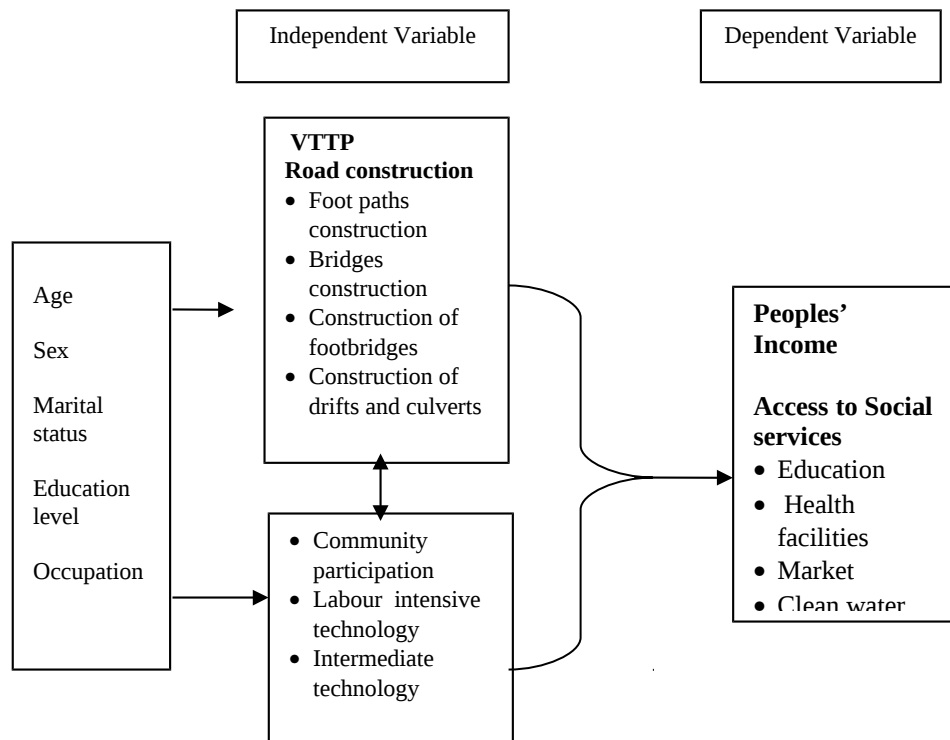
## 1.6 Conceptual Framework

Infrastructure investments contribute to economic growth and raise the quality of life. Road infrastructure contributes to improved economies through facilitating access to various social services and economic activities. The conceptual framework of this study presents the analytical basis of the contribution of rural roads in improving peoples' income and access to both social and economic services. The conceptual framework (Fig. 1) holds that, age, sex, occupation, education level, improvement of roads (construction of bridges, drifts, footpaths and culverts) and other factors such as community participation and the use of labour based technology have a direct impact on people's income and access to social and economic services. At a household level, rural roads can lead to increased



agricultural production and open up alternatives to non-farm employment which may results in both higher earnings and more diversified sources of income. It can also be a means to acquiring other goods and services, as access to education, and health facilities and markets become improved.

In poor rural areas, lack of adequate and reliable transport can penalize households dealing with cash crop farming and reduce non-farm employment opportunities and access to social services. It is thus argued that rural roads contribute to poverty reduction by removing major constraints faced by the poor in accessing jobs, markets, and other social and economic services.



**Figure 1: Framework on the contribution of VTTP to peoples' income, community participation and access to social and economic services**

## **CHAPTER TWO**

### **2.0 LITERATURE REVIEW**

#### **2.1 General Overview**

Transport is an important sector in any development process and poverty alleviation. Its effectiveness, appropriateness and adequacy contribute a lot to the successful implementation of socio-economic activities (URT, 2007).

One of the major functions of transport in supporting economic development is its potential of increasing welfare of the people by enabling them to access social facilities, such as education and health care (Fromm, 1965). There are few transport project studies which confirms the existence of relationship. Further these studies provide more detailed information on how transport investment projects contribute to social-economic and behavioural changes of the communities served by the projects (van de Walle and Cratty, 2002).

Almost a third of the people in developing countries live in poverty whose some of the basic indicators include lack of access to basic services. According to the World Bank there is a clear association between poor access to basic services and per capita income (Nejadfard, 1999). Poor access to basic services is one of the characteristics of poverty and which has some bad effects at the most basic level of living. Lack of access to basic and social services, employment, technology, land, information and credit contribute to such negative consequences as poor health, low skill, poor education, low investment and limited opportunities (Windle and Cramb, 1997).

Rural roads are being extensively championed by the World Bank and donor institutions as poverty alleviation instruments. It is argued that rural roads are the key to raising the living standards of the rural poor. It is argued that, better roads lead to the reduction of isolation, vulnerability and income variability (van de Walle and Cratty, 2002).

## **2.2 Tanzania Road Transport Overview**

In Tanzania Road transport handles about 70% of internal freight traffic, 64% of transit cargo and is a major mode of passenger transport (URT, 2007). Road transport dominates other modes of transport in terms of assets turnover, employment creation and contribution to GDP and capital formation. Most parts of rural areas are still not accessible by roads network during the rainy season. Of all 56 625 km of local government road network in Tanzania, only 14% are in good condition, 41.2% are in fair condition and 44.8% are in poor condition (URT, 2007:19; URT, 2008:10). Poor roads in rural areas obstruct the people who are living in rural areas from accessing basic services, which slow their speed toward poverty alleviation.

The VTTP was conceived in Tanzania in 1992. Later in 1994 the program became initiated through the Integrated Roads Project under the Ministry of Works. The implementation of VTTP started in seven (7) districts. These were Rufiji and Iringa (DANIDA), Masasi (FINNIDA), Mbozi and Muheza (NORAD), Iramba (WB) and Morogoro Rural District (SDC).

The overall objective of the programme has been to improve the rural transport situation in the country and consequently contribute to the improvement of the livelihood of the rural population and alleviating poverty (Lwoga, 2006).

The activities that were identified in the implementation of the VTTP framework were in three main categories:

- (i) improvement of transport infrastructure including paths, tracks and trails;
- (ii) promoting the use of appropriate intermediate means of transport; and
- (iii) increasing access of villagers to select services namely water for domestic use, fuel-wood and grain grinding mills.

It is the villagers who choose appropriate interventions from the menu of project implementation to solve their travel and transport problems. It should also be noted that the interventions are not directly related to conventional potential to solve, the foreseeable future or travel and transport problems of the rural households (URT, 2003a). The reality is that it would take a long time before rural households own vehicles which would affect their day to day travel and transport activities. Three institutional frameworks were proposed for the VTTP intervention at the district level to enable the implementation of the programme within the existing structures. This also ensures that at the end of the pilot project, the most suitable model to be followed is to be decided upon. The three models include:

- i. Contracting full or partial implementation of VTTP to an NGO where a strong NGO is present.

- ii. Incorporating VTTP interventions in an on-going but related donor funded program if such a program exists in the district.
- iii. The District Council to implement the program where there is lack of both a strong NGO and appropriate donor funded programs, however some work can be outsourced to NGOs and the private sectors.

However, in all the above-mentioned models, the District Executive Director (DED) features as the overall overseer of the VTTP implementation. The national coordination of the VTTP activities is through the National Coordination Unit under the President's Office responsible for Regional Administration and Local Government. The coordination role was under the Ministry of Works since 1995 to June 1999 when the Government and participating donors agreed that this responsibility should be transferred to PMO-RALG. This decision was based on the fact that the implementation of VTTP interventions takes place at the district level, and that the PMO-RALG is responsible not only for overall coordination and administration of local authorities, but also for the rural development initiatives as a whole. At the ward and village level, VTTP activities are co-ordinated through the established committees, the interested groups and the ward and village councils. Through the PRA process the VTTP action plans are integrated in the overall village Development Plans.

### **2.3 Rural Roads and Access to Social Services**

Investment in rural roads has significant potential for the use of local resources, create decent jobs, support the local economy and strengthen local commerce. It has

therefore important implications for poverty reduction, local economy and social development (Donnges *et al.*, 2007).

The direct consequence of investing in rural roads is the generation of jobs, incomes and business opportunities, particularly if the development and maintenance of these rural roads are targeted in favour of local resource-based methods (Lebo and Schelling, 2001).

The social and economic impacts of rural roads are well established. Communities and local governments often attach a high priority to rural road improvements. Rural roads improve rural access, which facilitates marketing, schooling and health services. Better access provides the opportunities for increased income and employment and can also contribute to the alleviation of poverty. However, maintenance of rural roads is a seriously neglected area in many countries (Donnges *et al.*, 2007).

Rural roads are very vital to the socio-economic and political development of rural communities of any country including Tanzania. They save 80% of the population in developing countries and who live and work in rural areas (Kesogukelewe, 2005). These roads provide access to schools, clinics, farms, markets, and to the neighbouring rural communities among others (Kesogukelewe, 2005; Ipingbemi, 2008). They also link rural areas to the higher order road network. As Nair and Kumar (2006) emphasise the provision of adequate and quality infrastructures in rural areas facilitate improvement in productivity and efficiency of capital in

agriculture. It also improves the credit absorption capacity of the area, generating employment and increasing farmer's income. They also facilitate expansion of markets and economies of scale together with enhancing efficiency in market operations. It is estimated that up to 15% of the crops is lost between the farm gate and the consumer in the world because of poor roads and storage facilities (Nair and Kumar, 2006).

Poor states of the rural roads combined with inadequate transport services have an adverse impact on access to social services (amenities). As Davies (2000) observes poor road infrastructures is a burden to rural communities as it increases the cost of the already costly health services and other social services including groceries. Rural people spend a lot of time and energy in transport related tasks when carrying out their subsistence, economic and social activities (Doran, 1996; Davies, 2000; Grootaert, 2002). Often mostly women in particular do not have access to the means of transport besides walking and carrying goods on their heads (Doran, 1996). Greater recognition and attention to rural communities' transport would relieve women with such a burden and provide them with enough time to do more rewarding activities for the betterment of their livelihoods.

According to van de Walle and Cratty (2002), lack of access has its effect at the most basic level of living. If there has been poor access to health services, people would remain unhealthy, children would die, and any epidemic would likely have catastrophic results. If there has been poor access to clean water, again people would suffer health wise. If there is poor access to basic information, the households would



be unaware of ideas and technology that might help them to raise their standard of living. And if there is poor access to education, children will in the future share the limitations confronting their parents today. In addition, lack of access to markets would limit the existing potential for marketing the crops. As Fromm (1965) reveals, that lack of road maintenance also affects people's lives in social terms. Once the roads become impassable, people can no longer have access to schools, health centres or to other service centres. It also becomes more difficult for service providers to reach communities, schools, and health centres. As a result, the level and quality of certain accessed services deteriorate. Teachers may well be absent as more often as schools become more difficult to reach; mobile health teams visit areas less often and the distribution of medicines declines. These negative social impacts have significant long-term economic consequences.

The findings from World Bank (Nejadfard, 1999) show that accessibility and transport services are linked and there is an important correlation between rural roads and rural transport services. Rural people often are too poor to own their own motorized vehicles and depend on public transport to gain access to locations outside their communities. When rural roads deteriorate public transport becomes more expensive and transport operators eventually decide to halt their services. This translates into declining public transport services in rural areas (Donnges *et al.*, 2007).

## **2.4 Intermediate Means of Transport (IMT) and Non Motorised Transport**

Mahapa (2003) defines IMTs as a range of low-cost transport technologies, particularly the more affordable ones. This range includes animals and animal-drawn means of transport, for example donkeys which are particularly owned and used by poor households. Other low-cost means of transport include different kinds of pack animals, sledges, animal carts, bicycles and other cycle-based transport modes.

Non-motorized transport is the primary means of transportation for people in many developing countries. Walking is the most familiar form of non-motorized transportation (NMT). Other common forms of NMT include bicycles/tricycles, human portorage, handcarts/wheelbarrows and other human powered vehicles. The definition of NMT includes any form of transportation that provides personal or goods mobility by methods other than the combustion motor (Guitink and Lebo, 1994; Rietveld, 2001).

As Dawson and Barwell (1993) show, transport is crucial for accessing goods and services and that roads are simply not enough. Many governments and development agencies have realised the need of paying attention to stimulate transport services, particularly in areas of the lower-income countries. The use of the more affordable transport technologies, such as intermediate means of transport, is encouraged to meet the desire for increased personal mobility and accessibility for the low income groups.

Limitations of rural transport models, which have focused more on roads and motor vehicles and the construction of an extensive road network that has facilitated travel but has failed to induce greater mobility has been mentioned as one of the reasons for the move towards the use of IMTs. The other reason includes the failure of most of the third world countries to maintain the existing roads (Rietveld, 2001)

The construction of roads has actually either displaced operators of non-motorized transport, encouraging the mass migration of labour from the countryside into the cities, or facilitated the flow of factory produced goods into the rural areas thus damaging local artisans' enterprises (Guitink and Lebo, 1994).

Other studies undertaken in several African countries (Davies, 2001; DANIDA, 2006) confirm that regular access to essential institutions such as markets, health centres or schools is a high-priority, but it is often still an unsolved problem. Bringing about improvement in transport conditions for the people with low incomes plays a central role in the fight against poverty. The means of transport which is cost effective and technologically appropriate has been a key factor in promoting economic and social development especially in the rural areas (Heyen-Perschon, 2006).

Studies on the rural transport reveal that the efficiency, productivity and quality of life in rural communities could be greatly enhanced by improving access, through a better location of services and facilities, development of rural infrastructure, improvement of mobility and NMT maintenance and other interventions aimed at

reducing the need for travel and transport. The RTS were followed by projects that include activities aiming at “mobility” of rural population through better access to Non Motorized Transport and improved rural infrastructure (Nejadfard, 1999)

## **2.5 Rural Roads and Community Participation**

### **2.5.1 Community participation**

The concept of participation has been a subject to lengthy debates regarding its historical origin, its theoretical grounding and practical applicability and its critical connotation. Community participation is a social process whereby specific groups with shared needs living in a defined geographical area actively pursue the identification of their needs, take decision and establish mechanism to meet these needs (Mikkelsen, 2005).

Kinyashi (2006) defines participation as assisted but self initiated process whereby communities take part in the development process in realisation that they are equal partners in development and are being recognized by other development partners as subjects and not objects of change. Such a process comes as a result of increased understanding by the participating community of the framework conditions in which the development process takes place.

Community participation in road works is defined as a process whereby the local community is involved in activities such as consultation, information gathering, provision of materials, and engagement in physical works such as construction and

operation and maintenance or in any other relevant activity either with or without payment (DFID, 2003).

Community participation in rural roads related activities helps to identify and provide vital information on measures needed to reduce adverse social impacts, like destruction of cultural centres and disturbances to settlements, thus ensuring sustainability.

Participation brings about a sense of belonging and ownership to the community on the proposed road which in turn influences the long term involvement of people in road operation and management. Local people provide information on affected land, housing and settlement. Other resources which are likely to be affected include the existence of important civil society (Wattam, 2001). Such information is critical for the proper assessment of the loss to the community and thereby determining the compensation package for inclusion in the road budget. As it is emphasized by Kulwinder and Bajaj (2008), given limited resources, it is important to efficiently and equitably mobilize all available resources to meet the substantial challenges of infrastructure provision to support economic and social development. Community participation has increasingly become a cornerstone in social development projects (Wattam, 2001) hence it helps to increase people's income. This approach has also helped in building strong stakeholder participation, lowering the cost of construction and achieving equitable and efficient usage of local resources and local skills.

### **2.5.2 Forms of community participation in road works**

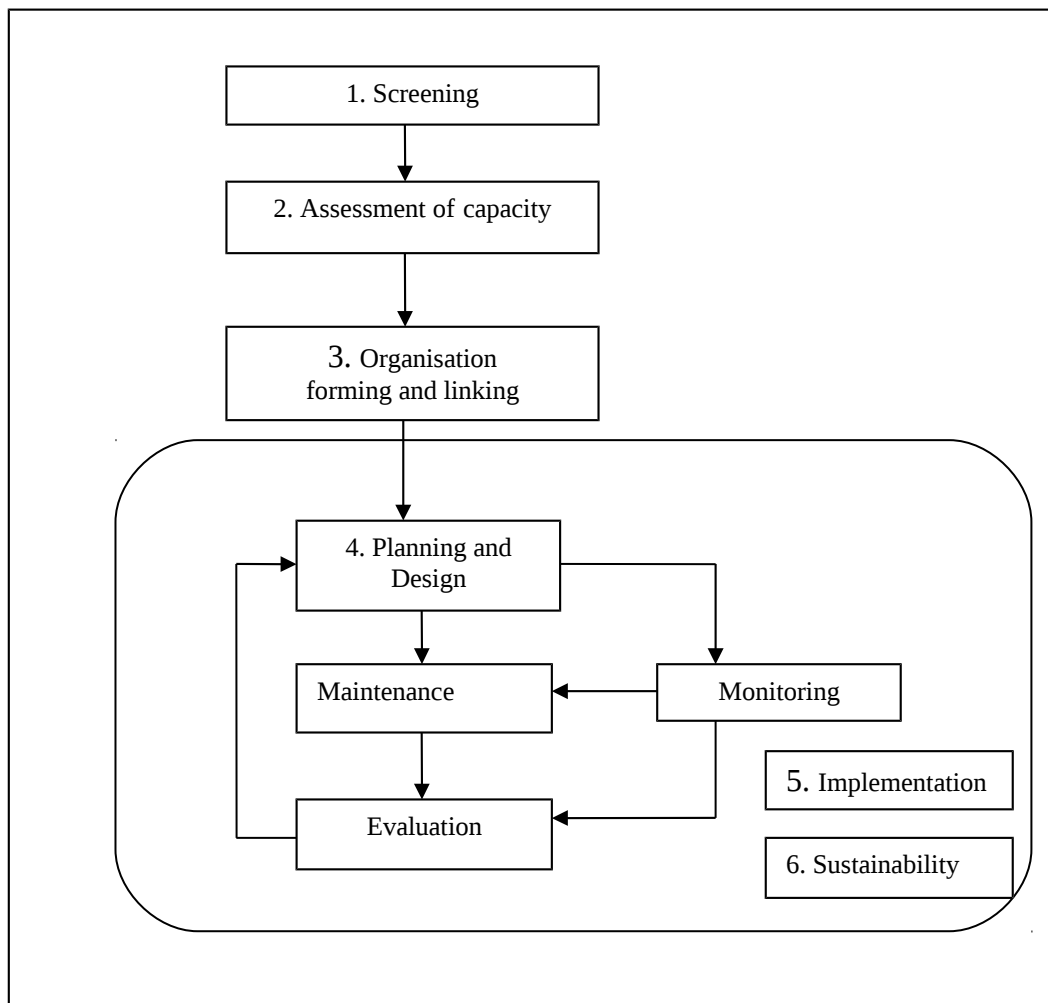
The lessons learned from rural roads programs in Africa show the existence of systemic shortcomings due to insufficient focus on road maintenance and community involvement. A review of rural road maintenance projects found widespread problems in project effectiveness and sustainability, and called for the prescriptions of good practice to be followed in the sector and in the project work (Isotalo, 1992). Local participation has in most cases been implemented through local governments, which typically have a very weak revenue basis, meagre technical skills, and insufficient support of the Central Government and, in some cases, a lack of commitment to road problems at a village level. Wattam (2001) identifies different types of community participation in rural road works as follows:

- i. Passive participation: People participate by living in the area of the project. They may be told what is going to happen or has already happened but will have no other input;
- ii. Participation for material incentive: People participate by being paid for labour in food or cash, for a pre-determined project. This may be as a 'community' or as groups;
- iii. Participation by resource contribution: People participate by contributing a resource such as labour or money, to a pre-determined project,
- iv. Participation by consultation: People participate by being consulted (perhaps with options) on projects where the majority of the decisions have been made. Their views may or may not be considered;

- v. Interactive participation: People participate by joining with external professionals in analysing their situation, developing action plans and determining common projects; and
- vi. Spontaneous mobilisation: People participate by taking their own initiative independent of external professionals to change their situation. This may lead to self-help projects or to requests for assistance from other institutions.

### **2.5.3 Project steps for community participation**

Community participation in development projects can be done in a number of steps that can be followed through engaging communities in different activities. Fig. 2 summarises the process that is described in more detail by DFID.



**Figure 2: Steps for effective community participation (DFID, 2003)**

### 2.5.3.1 Screening

Screening is the first step in the process of community participation. It serves two purposes: firstly in assessing whether road maintenance is a priority to the community; and secondly in assessing the types of community participation that may be appropriate to the project. This enables a more realistic dialogue with peers and the community.



### **2.5.3.2 Assessment of capacity**

The sustained capacity of organisation and a community to participate is an essential but it is often assumed to put the project at risk. For example, many communities may be willing to participate at the time, but on the longer term they may be less willing. Also, it enables to see if an organisation is capable of responding to the needs of the community on a longer term. At the community level, capacity can be viewed in terms of the availability of natural resources, human resources, and financial resources.

In view of the foregoing discussion, there is a need to assess the capacity within the sub groups in the community e.g. men, women, children, old and young, among others, as these different groups have different strengths and weaknesses that should be considered to enhance the project design.

### **2.5.3.3 Organisation forming and linking**

From the capacity assessment, knowledge of the administrative or community leadership structure is gained. Within this structure there will be a number of sub-committees that deal with different sectors, including village infrastructure. From the capacity assessment stage it will be clear whether or not the committees are capable of representing the community and participating in the project. If the committee is not capable then they may either need to be revitalised or completely restructured.

The representation of the community in these committees is essential on two counts. First, inadequate knowledge of the range of individual travel and transport patterns in a community means that the planning and activities of the project may be biased towards a minority of the population. Secondly, if only these minority needs are addressed, then it is likely that long term sustainability will be undermined.

#### **2.5.3.4 Planning and design**

The previous three steps can all feed into or be an integral part of the planning stage in a project. The big part of the information collected can be used to shape the way in which the process of participation is going to continue into the more detailed design and implementation stages. To maintain the trust and relationship with the community that has been developed thus far, their inclusion in the planning stage is vital. This should include both the planning for physical activities as well as managerial aspects.

#### **2.5.3.5 Physical**

Community representatives may not have high level technical knowledge but they may have the knowledge of the local area and the problems they face.

#### **2.5.3.6 Management meetings and dissemination**

Again the level of infrastructure will make a difference to the level of community organisation. For a trunk road the community may only be involved in the review meetings and for a path or a track the community may organise contributions, labour, meetings and much more. At the planning and design stage it is good to set

the parameters for implementation including how many meetings are required at what intervals, and how many people are required for how many days. The fine details of this would be worked out with the community, however it is recommended that meeting should not be less than quarterly to review progress.

#### **2.5.3.7 Implementation**

The implementation of a project is when the majority of the activities are carried out. This of course all rests on the bed of good planning. Therefore, if there is to be active and sustained community participation the previous steps are essential for good participation in the implementation stage. The following section gives a guide for the elements of project implementation in which a community can most actively participate.

#### **2.5.3.8 Construction**

Construction is taken to mean any works that are conducted, be they part of a maintenance or construction project. The principle way a community can participate in works is through labour, materials or payment of cash for labour. Depending on the class of the road the involvement of a community may vary from that of being the contractor or that of being the labourers for a contractor.

#### **2.5.3.9 Monitoring and evaluation**

The monitoring and evaluation of a transport project is usually concerned with the physical monitoring i.e. the length of kilometres improved, the amount of material used and quality of works, among others. Some projects would extend to monitoring

the social and economic effects and impact. Communities can participate in both of these stages and in a third stage of monitoring and evaluation of the actual community participation.

#### **2.5.3.10 Sustainability**

The continuation of community participation after the initial input or the end of the project is often neglected. As a result many committees are set up when the project starts and are dissolved when the projects comes to an end. For an extreme case, maintenance is a long-term activity, therefore if community participation has proven to be useful, it needs to be sustained. For sustainability there needs to be willingness on the part of the community as well as on the part of the engineers, planners and other local officers (DFID, 2003).

### **2.6 Labour based Technology in Rural Road Works**

Labour based approach is a structured method of providing or maintaining rural infrastructure (especially rural roads) to specified standards (ILO, 2005). It is the construction technology which while maintaining cost competitiveness and acceptable engineering quality standards; it maximizes opportunity for employment of labour (skilled and unskilled) together with the support of light equipment and with the utilization of locally available materials (ILO, 1997). The concept is based on the principle of using manual labour to complete the tasks otherwise done by the machine.

These tasks include clearing of trees and bushes on the road alignment, removal of topsoil, removal of soil along the sides of the road to make the side drains, among others (ILO, 2002; Ipingbemi, 2008). These tasks are completed through by the use of hand tools such as hoes, shovels, spades, rakes and wheel-barrows. These are common tools used in agricultural activities and which the rural people are familiar with.

The labour based approach is carried out through a 'length-man system' where small and manageable tasks are allocated to individual workers according to priorities throughout the season. A labourer is employed for each section of the road which is typically 1-2 km in length (Ipingbemi, 2008). A supervisor provides the tools and at the same time monitors the condition of the roads, directs operations, makes reports and authorizes payment for satisfactory work. The worker lives close to the location of maintenance activities and may therefore not require any transport (ILO, 2002).

Experience has shown that for the same level of investment in local infrastructure, the use of labour-based technologies can create between two and four times more employment (mostly unskilled), drop foreign exchange requirements by 50% to 60%, decrease overall cost by 10 to 30%, and reduce environmental impacts (ILO, 2002).

Therefore, the adoption of Labour-Based Approach which is participatory in nature and which utilizes local knowledge and initiatives as well as requiring little resources could be the panacea to the protracted deplorable and deteriorating

condition of rural roads in the country (Ipingbemi, 2008). The approach would not only improve the quality of life of the rural populace through the creation of job opportunities for the teeming rural population and lowering of transport cost, but it would also ensure the sustainable maintenance of rural roads in the country.

## **CHAPTER THREE**

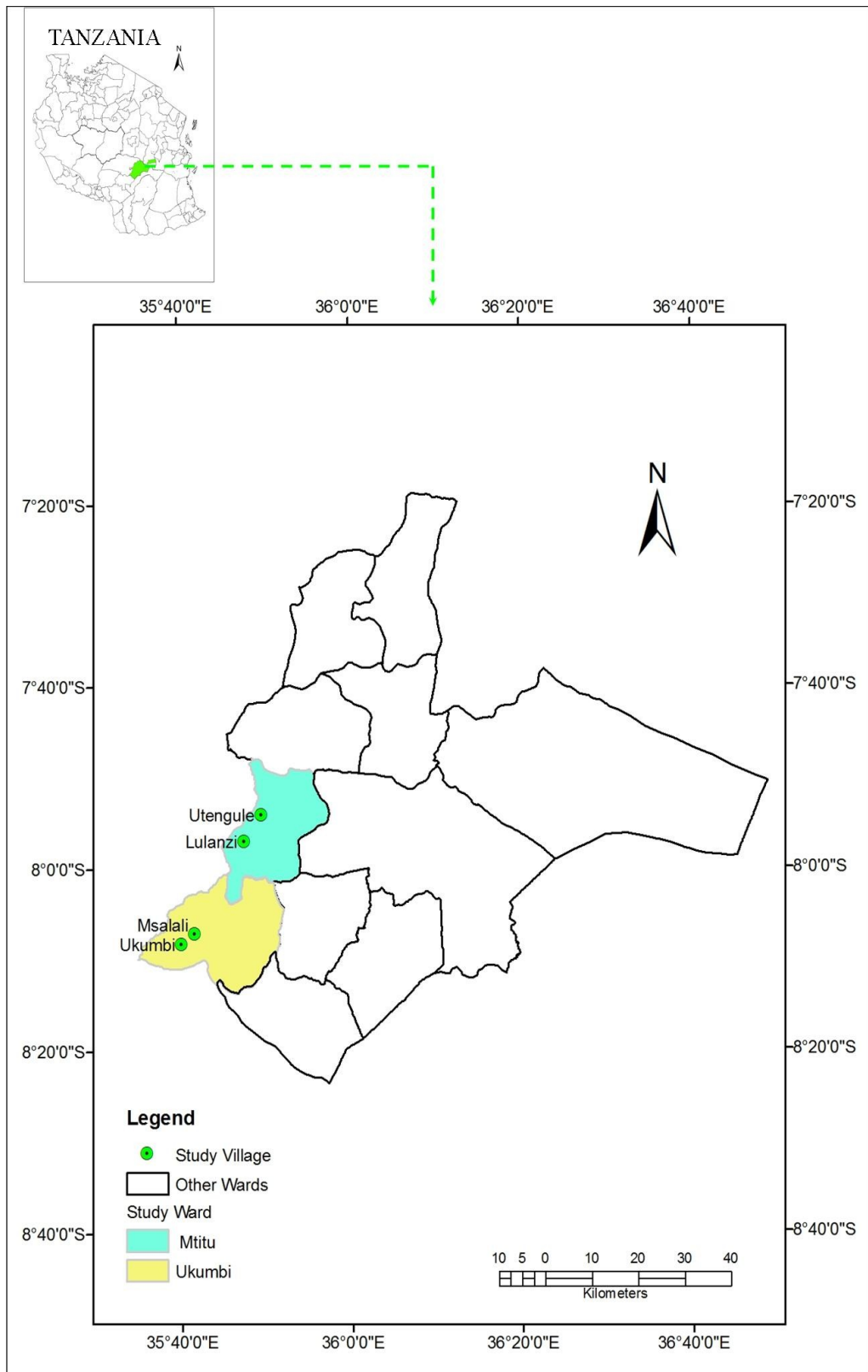
### **3.0 METHODOLOGY**

#### **3.1 Description of the Study Area**

This study was undertaken in Kilolo District which is among six Districts in Iringa Region. Other Districts are Iringa Rural, Mufindi, Njombe, Makete and Ludewa. The study was conducted in four villages from two wards namely Ukumbi and Mtitu. The villages from Mtitu were Lulanzi and Utengule, while those from Ukumbi ward were Ukumbi and Msalali. Kilolo District has an area of 7881 km<sup>2</sup>, of which 6803 km<sup>2</sup> are habitable while the remaining 1078 km<sup>2</sup> comprise of forests, Rocky Mountains and water. The District is located between Latitudes 7° - 8 °3' South and Longitudes 34°-37' East. Fig.3 shows the detail of Kilolo District and the area of the study.

According to the population Census 2002, by 2009 the District had a population of about 222 530 people of whom 111 917 were females and 110 613 were males. The common ethnic groups found in the area include Wahehe and Wabena. Others include Wakinga and Wasagara (URT, 2003b).

The District shares borders with Mpwapwa District (Dodoma Region) to the North, Kilosa District to the Northeast and Kilombero District to the East (both in Morogoro Region), Mufindi District to the South, and Iringa District to the West. Administratively, Kilolo District Council is divided into 3 divisions, 12 wards, 83 villages, 415 hamlets and 42 002 households.



**Figure 3: A map of Kilolo district showing the study Area**



Kilolo District has about 570.9 km of road networks. About 77 km are in good condition, while 230.9 km are in fair condition and 262.8 km are in poor condition (URT, 2008c).

Kilolo district has one private hospital, two health centres (one for government and one for private), 43 dispensaries (27 governments and 16 private) and 41 mobile clinics owned by the government. The study area has been selected purposively because it was one of the eight Districts that implemented VTTP. The district is said to be the best when compared with other districts (Lwoga, 2006).

### **3.2 Research Design**

The study adopted a cross-sectional research design which allows information to be gathered at one point in time (Krishnaswami, 2006). The nature of the study objectives convinced the researcher to employ the design as it uses survey techniques in gathering the data. Also, this design is easy and produces quick results when studying a large number of respondents at low cost (monetary and non-monetary).

### **3.3 Sampling Technique and the Sample Size**

Different sampling techniques were used in this study. Mtitu and Ukumbi wards were selected purposively because the project has been implemented in the Wards. From the selected wards, Lulanzi and Utengule Villages (for Mtitu), and Ukumbi and Msalali Villages (for Ukumbi) were selected randomly for the study. In the selected villages, 120 respondents (30 from Utengule, 30 from Lulanzi, 29 from Msalali and 31 from Ukumbi) were randomly selected from the list of village

register. Nineteen key informants were selected purposively in that they represented village and ward government, village road committee and VTTP district project coordinators.

### **3.4 Data Collection**

The instrument used for the data collection from the household was a semi-structured questionnaire. The questionnaire was formulated in English and in-depth personal interview was undertaken to ease the understanding of questions by the respondents. Both open and closed ended questions formed the questionnaire from where information regarding VTTP activities and associated income, other activities and income not directly associated with VTTP, access to social services and community participation were obtained. A checklist was used to guide the interview with the key informants. Interview checklist guided to gather information related, but not limited, to modalities of VTTP implementation, activities arose as a result of the programme, considered immediate benefit of the programme to the community, and community participation and sustainability of the programme. The questionnaire was pre-tested under field conditions before its actual use. This was a very important stage in checking the validity of the content and reliability of the instrument. Fifteen households were randomly selected from one of the villages (Lulanzi) for the pre-test of the questionnaire. Thereafter minor changes were made to the instrument before the actual data collection exercise.

Primary data were obtained using administration of the semi-structured questionnaire formulated with closed and open-ended questions, interviews, and

direct observation. Secondary data were obtained by reviewing various secondary sources, including publications and reports obtained from local authorities (village, ward, divisional and district office) and from the Prime Minister's Office Regional Administration and Local Government, the office which is responsible for coordinating the programme at the national level.

### **3.5 Data analysis**

#### **3.5.1 Qualitative data analysis method**

With respect to qualitative data analysis, the content analysis method was used for the data extracted from the discussion with the key informants. The information which was recorded from discussions with key informants (village leaders, gang leaders and officials from district headquarters) and a review of various project related documents was broken down into the smallest meaningful units of information. This helped to ascertain socio-economic facts pertaining to the programme.

#### **3.5.2 Quantitative data analysis**

Quantitative data from the respondents were verified, compiled, coded and summarized before analysed using Statistical Package for Social Sciences (SPSS). Descriptive statistics (mean, mode, variances and standard deviations) was used to describe the situation, and summarize the data into simple understandable form. The information was presented in frequency distribution tables, histograms and pie charts. A chi- square ( $X^2$ ) was used to measure the association between variables. In this study, the association/relationship between the improved and situation of access

to different social services was tested. A t-test model was also applied to compare variables between time before and after the implementation of the VTTP. ANOVA F-test was used to compare means between four villages regarding the extent of involvement in the road works.

## **CHAPTER FOUR**

### **4.0 RESULTS AND DISCUSSION**

This chapter presents the results of the study conducted in four villages namely Lulanzi, Utengule, Ukumbi and Msalali in Kilolo District in Iringa Region. The chapter gives an overview of contribution of Village Travel and Transport in terms of income, community participation and access to social and economic services. The results of the study are presented and discussed basing on the specific objectives.

#### **4.1 Demographic Characteristic of the Respondents**

##### **4.1.1 Age of the respondents**

Age is one of the major factors influencing community involvement in development work in different parts of the world. Table 1 indicates the distribution of age of the respondents. The age of the respondents ranged from 18 to 72 years with mean of 43.9 years. The results show that most of the respondents (35%) fell in the age category of 31 to 40 years followed by the age category 41 to 50 years (22%), 51 to 61 years (18%), 20 to 30 years (12.5%) and 60 years and above (11.7%). In all the four villages, only Msalali did not have any respondent above the age of sixty in contrast to 0.8% of the respondents who were at the age category of 20 to 30 years in Lulanzi.

**Table 1: Age of respondents in category (in percentage)**

Age Category	Name of the Village				Total (N=120)
	Lulanzi (n=30)	Utengule (n=30)	Msalali (n= 29)	Ukumbi (n = 31)	
20-30	0.8	4.2	5	2.5	12.5
31-40	7.5	9.2	11.7	6.7	35.0
41-50	4.2	5.8	3.3	9.2	22.5
51-60	8.3	4.2	4.2	1.7	18.3
>60	4.2	1.7	0	5.8	11.7
<b>Total</b>	<b>25</b>	<b>25</b>	<b>24.2</b>	<b>25.8</b>	<b>100</b>

This implies that a large number of people who participated in the study are within the productive age. This is not surprising as at the age of 31 and 50 years, the majority of the rural based population have families which are required by the village by-laws to actively participate in the village development activities. These results are comparable with the findings by Katundu and Mwaseba (2007) which show that the contribution of development related activities are much witnessed most in the settlement age and to some extent in the old age due to responsibilities and expectations that accompany these age cohorts.

#### **4.1.2 Sex of the respondents**

Both males and females did participate in the study. The results (Table 2) show that 65.8% of the respondents were males and 34.2% were females, with Msalali having the least female participants (7.5%). These results reflect the fact that most of the members of the community involved in manual development works are men. The results also reflect the nature of activities being undertaken in road construction, that they require a lot of energy and are stereotypically meant for men. These types of works include cutting trees using an axe and carrying the trees from one place to

another, excavation, boulder removal, compaction, laying culverts and bridge construction. As a result, women find it difficult to participate in these activities. Furthermore, the village by-laws called for every household to be represented by at least one individual during the communal village development work, of which road work was one of them. With this aspect, females are most of the times left at home to perform their domestic chores for smooth running of the families.

**Table 2: Sex of the respondents**

Name of the Village	Sex of the respondents		Total
	Male	Female	
	%	%	%
Ukumbi (n=31)	17.5	8.3	25.8
Lulanzi (n=30)	15.8	9.2	25
Utengule (n=30)	15.8	9.2	25
Msalali (n=29)	16.7	7.5	24.2
<b>Total (N=120)</b>	<b>65.8</b>	<b>34.2</b>	<b>100</b>

#### 4.1.3 Marital status

Table 3 shows that most of the respondents (75.8%) were married, while the remaining 12.5%, 6.7%, 3.3% and 1.7% were not married, divorced, widow, widower and separated respectively. It was noted during the study that, most of the separated were women and this is because in African cultures men have more say than have the women in social and public affairs. In this line of thinking, it is very rare for a woman to force separation and break marriage ties. This aspect can also influence participation in development activities. Women who are married have to wait for their husbands to make the decision on whether or not they can participate in development activities.

On the other hand, marital status may influence negatively participation of women in development activities as women with heavy burden of dependants and family responsibilities would participate less than would their husbands.

**Table 3: Distribution of respondents according to marital status**

<b>Marital status</b>	<b>N</b>	<b>%</b>
Married	91	75.8
Single	15	12.5
Widow	8	6.7
Widower	4	3.3
Separated	2	1.7
<b>Total</b>	<b>120</b>	<b>100</b>

## **4.2 Socio-economic characteristics of the respondents**

### **4.2.1 Education level**

This refers to the level of formal education by the respondents in the study area. As Lugeye (1994) cited by Mchomvu (2001) shows that education tends to broaden horizons beyond habit and traditions of individuals encouraging participation of an individual in development activities. In this particular study, 70.8% and 12.5% of the respondents had successfully completed primary education (standard seven) and form four respectively, while 3.3% and 9.2% attended post secondary and adult education respectively. The remaining 5% had never attended any school. These results (Table 4) show that majority of the participants can read and write which are the basic components of literacy. This may influence to a large extent, the willingness and level of involvement of the community in road works for development.



**Table 4: Highest level of education reached by the respondents (N = 120)**

<b>Level of education</b>	<b>N</b>	<b>%</b>
Primary school	85	70.8
Secondary	15	12.5
Adult education	11	9.2
None	5	4.2
Post secondary	4	3.3
<b>Total</b>	<b>120</b>	<b>100.0</b>

#### 4.2.2 Occupation

Occupation of the respondents is shown in Table 5. The findings show that 84.2% of the respondents were farmers who mainly produce maize, beans, cowpeas, potatoes and vegetables. The findings, further show that 5.8% of the respondents engaged themselves in business, while 5% were civil servants and 1.7% were domestic workers and students. Some of those engaged in farming activities were doing these activities on fulltime and part time bases. The reality that the majority of the respondents are farmers is not surprising as agricultural sector in Tanzania employs over 70% of the active labour of rural population.

**Table 5: Main occupation of the respondents (N = 120)**

<b>Main occupation</b>	<b>N</b>	<b>%</b>
Farmer	101	84.2
Business persons	7	5.8
Civil servants	6	5.0
Unemployed	2	1.7
House workers	2	1.7
Students	2	1.7
<b>Total</b>	<b>120</b>	<b>100.0</b>

### 4.2.3 Household head

The results in Table 6 show that, most of the households (85%) in the study area were headed by adult males, while 15% were headed by adult females. None of the respondents' household appeared to be headed by orphans. In development activities, the household head can influence participation of household members in undertaking particular activities. In the course of data collection, it was observed that every adult individual in the household whether a man or woman had to participate in the road activities.

**Table 6: Household head (N = 120)**

<b>Household head</b>	<b>N</b>	<b>%</b>
Adult male	102	85.0
Adult female	18	15.0
<b>Total</b>	<b>120</b>	<b>100.0</b>

### 4.2.4 Household possession

In the study area, different households owned different means of transport. Some own motorized transport while others own non motorized transport and both motorized and non motorized transport. The findings (Table 7) indicated that households which owned bicycles accounted for 42.7%, followed by those who owned wheelbarrow (24%), bicycles and wheelbarrow (9.3%), animal drawn cart (6.7%), bicycle and animal drawn cart (6.7%), donkeys (4%), wheelbarrow and motor vehicle (1.3%), bicycle, animal drawn cart and donkey (1.3%) and bicycle and motor vehicle (1.3%). Poor state of roads, lack of bridges/culverts and low incomes among the respondents are among the reasons for most of the households not owning any means of transport.

**Table 7: Household possession (N = 75)**

<b>Household possession</b>	<b>N</b>	<b>%</b>
Bicycle	32	42.7
Wheelbarrow	18	24
Bicycle and wheelbarrow	7	9.3
Animal drawn cart	5	6.7
Bicycle and animal drawn cart	5	6.7
Donkey	3	4
Motor vehicle	2	2.7
Bicycle, wheelbarrow and motor vehicle	1	1.3
Bicycle, animal drawn cart & donkey	1	1.3
Bicycle and Motor vehicle	1	1.3
<b>Total</b>	<b>75</b>	<b>100</b>

#### **4.2.5 Ownership of arable land by the respondents**

Table 8 presents results on household land ownership. Majority (95.8%) of the respondents owned land. It was only 4.2% of the respondents who did not own land. These participants hired the land from neighbours. The average land size owned by a household was 3.77 acres; largest size being 12 acres and the smallest being one acre. These findings show that most of Tanzanian residing in rural areas engages in on-farm agricultural activities. These findings are similar to the ones by Maliyamkono and Mason (2006) which show that approximately 83% of the economically productive population in Tanzania and which is the majority live in the rural areas, with small scale farming dominating their means of production.

**Table 8: Arable land owned by respondent in respective villages**

Name of the Village	Owning Arable Land		Total %
	Yes	No	
	%	%	
Ukumbi (n=31)	25.2	0.8	26.1
Lulanzi (n=30)	23.5	1.7	25.2
Utengule (n=30)	24.4	0.8	25.2
Msalali (n=28)	22.7	0.8	23.5
<b>Total (N=119)</b>	<b>95.8</b>	<b>4.2</b>	<b>100</b>

#### 4.2.6 Change in cultivated land as a result of VTTP

The study results reveal that there has been a slight change in the size of cultivated land after the improvement of village roads. The average land cultivated by the household before VTTP was 2.8 acres as opposed to 3.2 acres after VTTP (Table 9). The change on the size of the cultivated land before and after VTTP was significant ( $P=0.042$ ) in all the villages.

**Table 9: Cultivated land before and after VTTP**

	Mean of the cultivated land		t-value	P-value
	Before VTTP	After VTTP		
Cultivated land	2.8	3.2	15.000	0.042

Ascertaining as to why there existed the change of the size of the cultivated land, the respondents observed that good prices for the harvested crops which had resulted from simplified transportation of goods was the leading factor as Table 10 shows. Other contributing reasons include simplified access to the market, transport to the farms, increased access to farm inputs, and good transport to and from the markets among others. These findings are similar to the findings by Howe and Richards (1984) that show roads play a key role in making the land productive, in marketing

agricultural commodities, and in making forest and mineral wealth accessible. Similar findings were observed in Morocco where the cultivated farmland area for various households increased as a result of road rehabilitation; there was a minimum increase of 35% as opposed to the initial average area in rehabilitated areas (DANIDA, 2006).

**Table 10: Respondents distribution of reasons for change in land cultivated  
(N = 115)**

<b>Reasons of change in cultivated land</b>	<b>N</b>	<b>%</b>
Good prices for the crop harvested	59	51.3
Good prices and transport to farm	17	14.8
Good transport to the farm	14	12.2
Easy access to the market	12	10.4
Easy access to inputs	9	7.8
Good prices and access to market	4	3.5
<b>Total</b>	<b>115</b>	<b>100.0</b>

#### **4.2.7 Duration of working in the road**

The findings in Table 11 reveal that a significant number of the respondents (50.8%) worked for at least a month, with Msalali registering the lowest (8.5%). It was revealed through discussions that, during the initial stages of the project, the community zeal was very high. This was evident when one elder in Ukumbi village said, “*wakati mradi huu wa barabara unaanza ari ya wanakijiji ilikuwa juu sana kwani walijua shida yao hasa ya kusafirishia mazao kwa kichwa kupeleka sokoni itakuwa imepungua na wanunuzi watakuwa wanakuja huku moja kwa moja. Mradi ulivyoendelea kidogo matarajio yao hayakuwa yamefikiwa hivyo kuathiri ushiriki wao*” [when the road project began, villagers zeal was very high as they knew that their long awaited problem of head-loading of farm harvest to the markets would

have been solved and the buyers would as well reach these places. Unfortunately, as the project went on the farmers expectations seemed to have been unrealised and unaddressed thus affecting their active participation].

**Table 11: Number of days (in months) respondent worked in road activities**

Name of the village	Number of days worked (in months)			Total
	$\leq 1$	$> 1 \leq 3$	$> 3$	
	%	%	%	
Lulanzi (n=29)	16.1	7.6	0.8	24.6
Utengule (n=30)	10.2	9.3	5.9	25.4
Msalali (n=28)	8.5	5.9	9.3	23.7
Ukumbi (n=31)	16.1	5.9	4.2	26.3
<b>Total (N=118)</b>	<b>50.8</b>	<b>28.8</b>	<b>20.3</b>	<b>100</b>

#### 4.2.8 Distance from the respondents' farm to the nearest improved road

Distance from the farm to the nearest improved road was ascertained in order to have an overview of the manner in which the distance may influence people's perception on the value of the project. The findings (Table 12) reveal that slightly over the majority (44.2%) spent between 30 to 60 minutes to reach the nearest improved road from their farms, while 42.5% and 13.3% spent less than 30 and more than 60 minutes to do the same respectively. On average, each respondent spent 38.5 minutes to reach the improved road from his/ her furthest farm. This may have some implication on the means used in ferrying the harvest.

**Table 12: Distance from the respondents' farm to the nearest improved road (N=120)**

Name of the village	Distance of the respondents' farm from the improved VTTP road (in walking minutes)			Total
	< 30	30 - 60	> 60	
	%	%	%	
Lulanzi	9.2	14.2	2.5	25.8
Msalali	10	12.5	3.3	25.8
Utengule	10.8	7.5	5.8	24.2
Ukumbi	12.5	10	1.7	24.2
<b>Total</b>	<b>42.5</b>	<b>44.2</b>	<b>13.3</b>	<b>100</b>

### 4.3 Activities and the Income Associated with the VTTP in Kilolo District

#### 4.3.1 Activities associated with the VTTP

VTTP was introduced in Kilolo District in 2002 with an intention of improving people's livelihood by making sustainable improvement in rural travel and transportation (URT, 2003a).

VTTP in Kilolo District as was the case in other pilot districts was implemented using a participatory approach devolving responsibilities to the beneficiary community. Roads were constructed using labour based construction technique. Activities which were difficult for community to implement (transportation of purchased material and culverts to the site, breaking hard rocks which needed heavy machine) were implemented by the programme while the rest of the activities were implemented by the community.

The proportions of activities conducted by VTTP are presented in Table 13. The main activities conducted by VTTP were purchasing and transportation of construction materials (22.8%), the purchase, transport and construction of drifts,

bridges, culverts and surveying (20.7%), training and construction of bridges, drifts and culverts (19.6%) and the purchase, transportation of construction materials and training of the gang leaders. Many other activities are presented in Table 13.

**Table 13: Distribution of respondents on the types of activities done by VTTP  
(N=92)**

<b>Activities done by VTTP</b>	<b>N</b>	<b>%</b>
Purchase and transport of construction materials	21	22.8
Purchases, transport and construction of drifts bridges, culvert and surveying	19	20.7
Training and construction of bridges, drifts and culverts	18	19.6
Purchase, transport of construction materials and train of gang leaders	10	10.9
Training of gang leaders and awareness creation	6	6.5
Construction of bridges, drifts and culverts	6	6.5
Awareness creation and construction of bridges, drifts& culverts	5	5.4
Training of gang leaders and surveying	3	3.3
Surveying	2	2.2
Side drains, excavation, compaction and culvert construction	2	2.2
<b>Total</b>	<b>92</b>	<b>100</b>

#### **4.3.2 Incomes associated with the VTTP**

Community participation in VTTP was not associated with any payment as was the case with some other development programmes. The community was required to provide their time and labour in performing different programme activities. This is contrary to the community projects implemented under TASAF. TASAF projects adopt a community-driven development (CDD) approach where community participation and direct financing to communities take the centre stage. The participants are paid to enable them to sustain their lives as part of the poverty reductions strategy (URT, 2008d). In contrast, DANIDA (2006) revealed that the community which participated in improving rural roads in Morocco were offered temporary incomes, and these had an impact on their daily lives. The average incomes, combined with their real nominal value had multiplying effects on the income generated by expenditure and had a significant contribution to poverty



alleviation. In Kilolo, there was no direct income generated by one involving in road construction activities instead the impacts are derived through other activities which emerged as a result of the programme.

### **4.3.3 Activities resulting from VTTP**

Good road infrastructure results into the development of various activities in a given area as it opens up various opportunities. As Maliyamkono and Mason (2006) put it, that good infrastructure offers many advantages for the economy as it simplifies mobility, enabling goods, services and people to travel freely throughout the country. Infrastructure provides a network for citizens, business and commerce to rigorously interact. The roads may increase job opportunities and open up new sources of revenue, leading to a more diversified income structure, which can reduce household vulnerability to economic shocks (Grootaert, 2002).

The findings from Kilolo show that there were no major changes resulting from the VTTP on production. Table 14 shows the distribution of respondents on the activities resulting from the VTTP. The identified activities include the diversification of agriculture (38.2%), construction of feeder roads (19.6%), construction of school (15.9%), timber business (14.7%), and food vending and grocery (12.7%). Construction of feeder roads was observed to have been underway in two of the villages (Lulanzi and Utengule), while construction of secondary school was observed to have been in progress in one of the villages (Utengule).

**Table 14: Distribution of respondents on activities arisen as a result of VTTP  
(N=102)**

<b>Activities as a result of VTTP</b>	<b>N</b>	<b>%</b>
Diversification of agriculture	39	38.2
Construction of feeder roads	20	19.6
Timber business	15	14.7
Small business (food vending, grocery)	13	12.7
Abattoir	9	8.8
Construction of schools	6	5.9
<b>Total</b>	<b>102</b>	<b>100.0</b>

#### 4.3.4 Income generated from other activities

Among the major activities carried out in the study area were crop farming, livestock keeping and business. The main crops grown include maize, beans and cowpeas. The household income mainly came through selling maize, beans and cowpeas. The average income from livestock keeping was between 30 000 TAS and 960 000 TAS per year. This is mainly from selling of chicken, piglets and milk. During discussion, it was revealed that most households produce crops and keep animals mainly for domestic consumption before they embark on crop or animal production for commercial purposes. The average income generated from crop production ranged from 24 000 to 6 000 000 TAS. This is mainly from selling of maize, cowpeas and beans. The income from business ranged from 50 000 to 1 250 000 TAS. In this area, only a few respondents were found to be engaged in business.

**Table 15: Average income from crop production (N=120)**

<b>Average Income</b>	<b>N</b>	<b>%</b>
<100 000	36	30.0
100 001 – 500 000	51	42.5
500 001 – 1 000 000	25	20.8
> 1 000 000	8	6.7
<b>Total</b>	<b>120</b>	<b>100.0</b>

#### **4.4 The Role of VTTP Towards Accessing Social Services in Kilolo District**

Rural roads are a cardinal factor to the socio-economic development of the rural population. Roads are fundamental in facilitating access to rural areas. However, such access has to be sustained otherwise the benefits would be short lived. As stated earlier roads enhance increased agricultural production, facilitate access to educational and health facilities and provide spatial interaction among rural communities (Ipingbemi, 2008). However, in Tanzania, the state of most of the rural roads is pathetic. Rural road networks are in deplorable condition, which is partly due to inadequate finance, weak technical know-how of personnel and most importantly, lack of political will by the government or its agencies. The consequences are a disruption of socio-economic activities of the rural population.

According to the World Bank report, almost a third of the people in developing countries live in poverty and whose basic indicators include lack of access to basic services (Nejadfard, 1999). In this line of thinking, there is a clear association between poor access to basic services and per capita income. Poor access to social services, for instance, is one of the characteristics of poverty and has an impact on the most basic level of living. Lack of access to basic and social services, employment, technology, land, information and credit contribute to such problems as poor health, low skills, poor education, low investments and limited opportunities. These challenges lead to low productivity and income which in turn, perpetuate the vicious circle of poverty and cause a hindrance to economic development.

Transport improves welfare of the people by facilitating their access to social facilities (Fromm, 1965). Improved rural roads have a direct relation with improved access to social and economic services such as health services, school, local and regional markets, legal services, administrative services and financial institutions among others. This study assessed people's access to social services which are markets, health services, and education and water services. The assessment centred on the contribution of improved roads in terms of time spent and the means of transport used in accessing a particular service.

#### **4.4.1 Access to market**

The study results show that the VTTP resulted into a change in the time and manner in which people used to reach and access various services. Unlike in the period before VTTP, there was an improvement in the means of transportation to and from the market after VTTP. Table 16 shows that before VTTP, 74.2% of the respondents used to walk to the market to reach various services, after VTTP, only 38.3% visited the markets on foot. On the other hand, before VTTP, only 14.2% used to go to the market on bicycle, while after VTTP 20% of the respondents used a bicycle. Before VTTP, none of the respondents used a donkey and animal drawn carts to the market, but after VTTP, 19.2% and 14.2% of the respondents used donkeys and animal drawn carts respectively to reach the market. Before VTTP about 12% of the respondents used wheelbarrow to ferry goods to the market compared to only 7.5% after the VTTP. This is a positive improvement as the community changed to better means of transport. These findings are similar to the findings by Awadh (2007) who

revealed that on both normal and market days rural areas make a little use of motorised vehicles and bicycles, as the majority walk on foot.

During the discussions, it was revealed that buyers of different items such as timber, maize, burnt bricks and fire-woods were travelling to the villages using tracks. In some occasions, villagers were observed accessing to agricultural inputs just from their village headquarters. Farmers attributed this simplified access to farm inputs to the emergence of improved roads. This situation never existed before VTTP. However, it was further realised through the discussion that, apart from the newly district opened abattoir in Utengule there is no any other opened or constructed or improved market in the study area.

The findings imply that an immediate economic impact of improved roads on economic development was an increase in demand for farm produce at the village level and improved prices. Similar findings were noted in Malaysia where several trader vans (mobile vans) started servicing road side communities along the improved roads, selling similar items though some variations were noted on the fresh food items that were on sale. Households brought their produce to the road for sale and bought their inputs at the same place (Windle and Cramb, 1997). Generally, there is a positive change which is associated with the VTTP in Kilolo District in terms of the means of transport to the market.

#### **4.4.2 Access to water sources**

During the study, it was revealed that before VTTP, 96.7% of the respondents used to fetch water from the sources on foot (Table 16). On the other hand, this situation was reduced by 23.4% after the VTTP. There was also a slight improvement on the means of fetching water using a bicycle before and after VTTP as 2.5% of the respondents used bicycle before VTTP as opposed to 3.3% of respondents who used a similar means after the programme. About 1% of the respondents used animal drawn carts before VTTP, but only 2.5% were able to do so after VTTP. None of the respondents used a donkey and a wheelbarrow before the programme, but after the programme, 20.8% of the respondents started using donkeys.

**Table 16: Means of transport to different social services before and after VTTP  
(N=120)**

Means of Transport Used	Before VTTP		After VTTP	
	N	%	N	%
1. Market				
On foot	89	74.2	46	38.3
Bicycle	17	14.2	25	20.8
Donkey	0	0.0	23	19.2
Animal drawn cart	0	0.0	17	14.2
Wheelbarrow	14	11.7	9	7.5
2. Fetching water				
On foot	116	96.7	88	73.3
Donkey	0	0.0	25	20.8
Bicycle	3	2.5	4	3.3
Animal drawn cart	1	0.8	3	2.5
Wheelbarrow	0	0.0	0	0.0
3. Access Health Centre				
On foot	69	57.5	29	24.2
Bicycle	45	37.5	54	45.0
Motor vehicle	6	5.0	22	18.3
Motorcycle	0	0.0	15	12.5
4. Access Education (Schools)				
On foot	119	99.2	113	94.2
Bicycle	1	0.8	6	5.0
Motor vehicle	0	0.0	1	0.8

#### 4.4.3 Access to health centre

The majority of the respondents (77.5%) revealed that there existed no health centre in the area of study (Table 17), except in one village only (Ukumbi). Other villages had to get health services away from their villages. This motivated the researcher into determining the distance covered by the respondents in accessing these particular services.

**Table 17: Presence of health centre**

<b>Presence of Health centre</b>	<b>N</b>	<b>%</b>
Yes	27	22.5
No	93	77.5
<b>Total</b>	<b>120</b>	<b>100</b>

The findings (Table 18) indicate that about 49% of the respondents spent between 30 and 60 minutes for walking to reach the nearest health centre. These findings give the reality that health centres are not found in every village. Some villagers are to travel to other villages for health services. In the study area, there was only one hospital located in the district headquarter where some community members had to spend more than three hours for walking to reach the hospital. With the increased emphasis on the need of having a health centre in every ward, this situation would be addressed. However, several issues including having ill equipped centres would need to be taken into account.

**Table 18: Distance from respondents' household to the nearest health centre (in walking minutes)**

<b>Distance to the Health Centre (in walking minutes)</b>	<b>N</b>	<b>%</b>
< 30 minutes	8	6.7
30 - 60 minutes	59	49.2
61 - 90 minutes	19	15.8
91 - 120 minutes	26	21.7
> 120 minutes	8	6.7
<b>Total</b>	<b>120</b>	<b>100</b>

When looking at the means used before and after VTTP (Table 16), the findings indicate that, before VTTP, 57.5% of the respondents accessed to health centres on foot, while 37.5% by bicycles and 5% by motor vehicles and none of the



respondents used motorcycle to reach the health centres. After VTTP, the results show a decrease of 24.2% in the people accessing to health services on foot and those using bicycle increased to 45%. On the other hand, the number of respondents using motor vehicle increased to 18.3% and those using motor cycle increased from 0% to 12.5%. It was noted however that lack of bridges and culverts in some areas made it worse for some individuals to use motor vehicles in accessing to health facilities. Similar findings from Muheza District indicate that the use of IMTs transformed the lives of people in the district. Women are now using bicycles and carts to access basic services such as maternal health clinic services and the like.

“With VTTP we now enjoy taking our children and babies to the health centres. There are minimal risks regarding maternal and delivery services. In fact we are accessing services from modern health system. Transport burden, which used to consume most of our efforts, has also decreased significantly, as these days we are accessing markets and marketing, grinding mills, farms, fuel wood, and water” (URT, 2006). The quotation obtained from people living in Muheza Districts after introduction of VTTP.

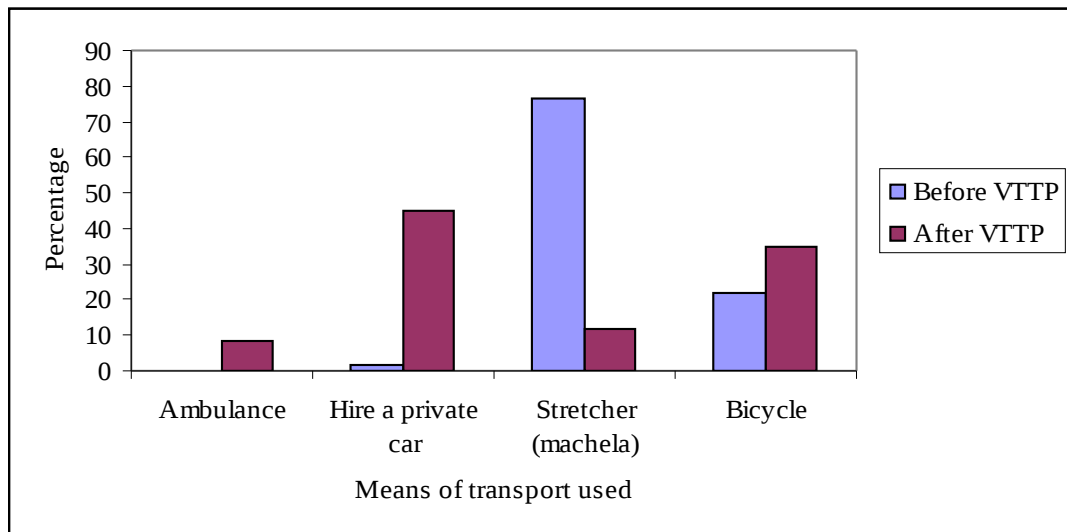
VTTP has connected some villages by constructing bridges and drifts which to some extent solved some of the problems, which existed long before the programme (Fig. 4). When asked respondents declared that good transport contributed much to the improvement of means of accessing to health services.



**Figure 4: One of the bridges constructed by VTTP in Ukumbi ward**

#### **4.4.3.1 Means of ferrying patients to the nearest health centre**

Fig. 5 shows the means used to ferry patients to the nearest health centre before and after VTTP. According to the Fig. 5, before VTTP none of the respondents used ambulance to ferry patients to the health centre, whilst after the programme 8.3% of the respondents used ambulance to ferry out patient to the health centres. About 2% of the respondents reported to have been hiring private cars, as opposed to 45% who did so after the programme. Majority of the respondents (76.7%) used stretchers to ferry patients to the health centre before the programme, whilst only 11.7% used to do so after the programme. Lastly, but not least, 21.7% used bicycles before the programme, whilst 35% used bicycles to ferry patients after programme.



**Figure 5: Means of ferrying patients to the nearest health centre before and after VTTP**

These findings show that there is a positive change as a result of the VTTP. The VTTP improved village roads and culverts/bridges which enabled ambulances and private cars to reach places which were not accessible before the programme. However, travelling to the health centres is mostly on foot and bicycle. Long distances to the health centres make it difficult for the sick people to walk.

Sick people are ferried by friends or relatives at no cost on locally made stretchers carried by four people. During the survey no ambulances were seen except a bishop car, in one of the villages. It was noted during discussion with key informants that if the patients were to be referred to another hospital, he/she had to be transported by motorcycle or by buses which were not very frequent. These findings are similar to the ones by Sieber (1996) who noted that, even in dry season the overwhelming majority of trips in rural areas are undertaken by walking as most of the rural people in many African countries are too poor to afford motorised transport.

The choice of means of transport to ferry patients to the nearest health centre was attributed to different factors. According to Table 19, the majority of the respondents (47.5%) ferried their patients on the basis of the availability of means of transport. The choice was influenced by road situation (29.2%) and financial capability (13.3%), while 10% was due to the state of the patients.

**Table 19: Distribution of respondents' reason for the means of transport to nearest health centre**

<b>Reason for the Means Being Used</b>	<b>N</b>	<b>%</b>
Availability of the means of transport	57	47.5
Road situation from where the patients is	35	29.2
Financial capability	16	13.3
State of the patient	12	10.0
<b>Total</b>	<b>120</b>	<b>100.0</b>

This implies that there is a close connection between road condition and the means of ferrying patients to the health centres. However, it was noted that, a poor road did not favour good means of transport in the study area. It was also observed that acute shortage of means of transport forced the community to opt whatever means were available to them as sometimes there were no options. Similarly, Donnges *et al.*, (2007) show that rural people are often too poor to own their own motorized vehicles and depend on public transport to gain access to locations outside their communities. When rural roads deteriorate, public transport becomes more expensive for the poor rural population and that transport operators eventually decide to halt their services to the public.

#### **4.4.4 Access to education**

Almost every village covered by the survey had a primary school, but where there was none; children had to go to school in the nearest village. With exception of Utengule Village where one secondary school was opened as a result of the improved road, no any other opened or improved school in the study area. The study findings show that before VTTP, 19.2% of the children used to go to school on foot, while only 0.8% used bicycles to go to school (Table 20). According to the results after VTTP, there was a slight change in the means of transport to the school where the number of children who still went to the school on foot dropped to 94.2% and only 5% used bicycles to go to school. Observations show that these findings reflect the true picture of the study area as almost every village has a primary school and the distance from the household to the school is very short. These findings are similar to those by Awadh (2007) who found that in most of the rural areas there is no any organised transport for the school children and sometimes children fail to attend school during rainy season. The findings from Morocco show that, frequent closure of village roads leads to regular absence of teachers and pupils from school and long absence of these people during rainy season (DANIDA, 2006).

### **4.5 Situation of Access to Various Social Services Before and After VTTP**

#### **4.5.1 Situation of access to market**

The results from Table 20 show that situation of access to market had improved as a result of the VTTP. In some villages, the community found it very difficult to reach the market as they had to go to other villages to sell or buy different items. Before the VTTP, it was 6.7% of the respondents who reported to have

experienced difficulties in accessing the market as opposed to 0.8% who reported the same after VTTP. The improved situation of access to the market after VTTP was therefore significant ( $P < 0.0001$ ).

**Table 20: Situation of access to the social services before and after VTTP  
(N=120)**

Situation of Access to:	Before VTTP		After VTTP	
	N	%	N	%
1. Market*				
Very difficult	8	6.7	1	0.8
Difficult	42	35.0	23	19.2
Relatively fair	57	47.5	87	72.5
Not difficult	13	10.8	9	7.5
2. Water Source**				
Very difficult	3	2.5	0	0.0
Difficult	21	17.5	12	10.0
Relatively fair	38	31.7	79	65.8
Not difficult	58	48.3	29	24.2
3. Health Service***				
Very difficult	20	16.7	3	2.5
Difficult	77	64.2	19	15.8
Relatively fair	11	9.2	65	54.2
Not difficult	12	10.0	33	27.5
4. Education (Schools)****				
Very difficult	2	1.7	1	0.8
Difficult	10	8.3	8	6.7
Relatively fair	42	35.0	72	60.0
Not difficult	66	55.0	39	32.5

\* Chi-square 34.330; df 9;  $P < 0.000$

\*\*Chi-square 7.654; df 9;  $P > 0.05$

\*\*\*Chi-square 33.562; df 12;  $P < 0.001$

\*\*\*\*Chi-square 9.701; df 9;  $P > 0.05$

#### **4.5.2 Situation of access to water sources**

Access to water sources before and after VTTP was not very difficult as majority revealed not difficult and relatively fair before (48.3%) and 65.8%) reported not to have experienced any difficulties before and after VTTP (Table 20). Water sources were not a very big concern to the dwellers of the study areas as some had access to tap water within 200 meters radius, while others did not need to go very far as they spent an average of 13.4 walking minutes to reach these sources. The situation of access to water sources before and after VTTP had not changed much, hence not significant ( $P>0.5$ ).

#### **4.5.3 Situation of access to health services**

It was observed that access to health services after VTTP had significantly improved ( $P<0.001$ ) compared to before VTTP. With the improved road, access to health services which was after VTTP accounted for 54.2% as opposed to 64.2% when VTTP was not introduced (Table 20).

#### **4.5.4 Situation of access to education (Primary and Secondary School)**

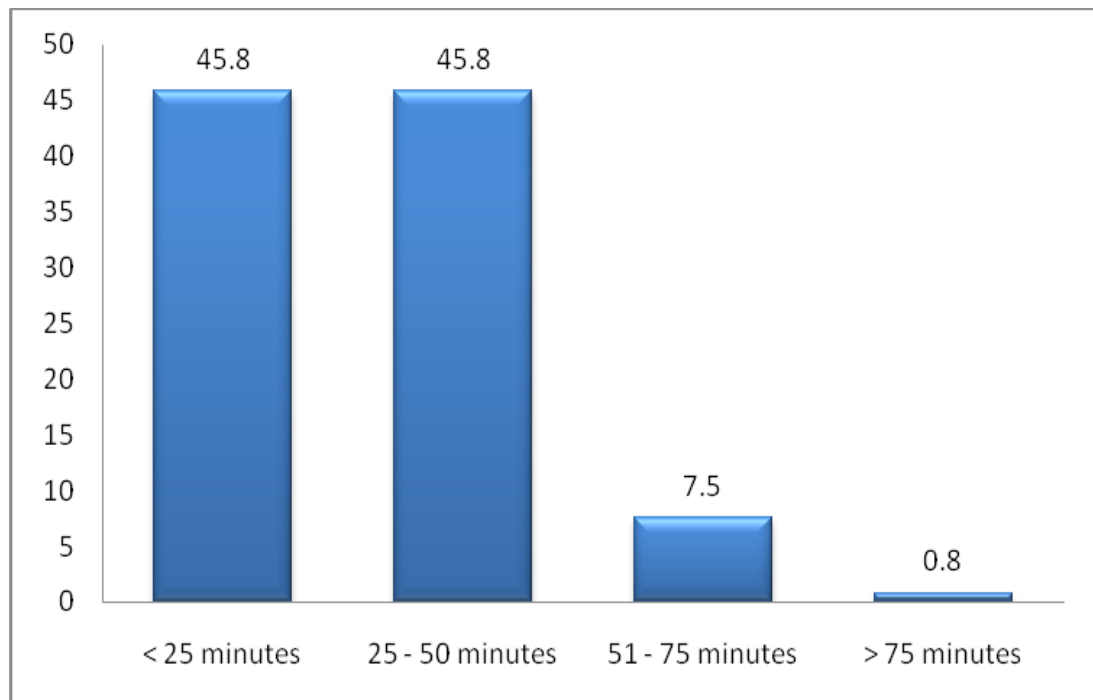
Situation of access to primary and secondary education had improved and enhanced due to the constructed bridges, culverts and foot bridges by the VTTP (Table 20). The increased number, for instance of Ward based Secondary schools, also improved people's access to such facilities. The improved roads following VTTP allowed 62.2% of the respondents on easy access to schools as opposed to only 54.2% of the respondents who had such an access before the VTTP. Generally, community's perception towards road situation shows that there was an

improvement in road conditions and access towards different social services after the programme as compared to the situation before the programme was launched.

#### **4.6 Distance from respondent's household compound to the nearest improved road**

It was observed that VTTP in most of the areas improved the existed village roads. On average each village improved about 3 km of existing village roads. Fig. 6 shows the distance in walking minutes from the respondent's home compound to the nearest improved road. The results from the figure show that the majority of the respondents (45.8%) spent less than 25 minutes and 45.8% spent 25 to 50 minutes to reach the improved roads. Others (7.5%) spent 51 to 75 minutes and only (0.8%) spent more than 75 minutes to reach the nearest improved roads. On average the people in the study area spent about 25 walking minutes to reach these roads. This implies that with the improved roads, the community can easily access different services available in the District or in the nearby villages.





**Figure 6: Distance in walking minutes from the household to the nearest improved road**

#### **4.7 Ownership of the means of transport**

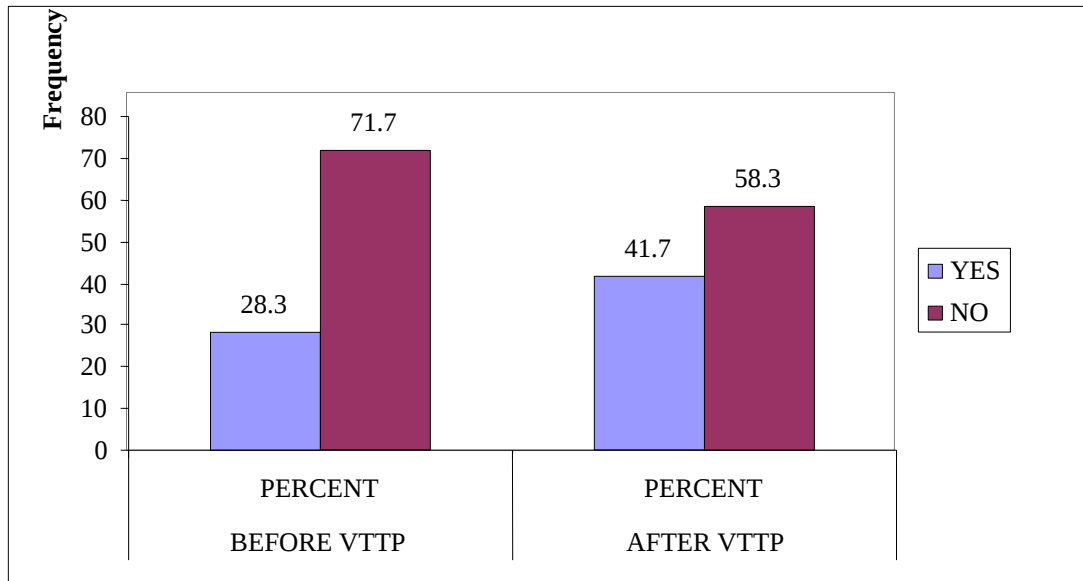
In developing countries, non-motorised transport modes often strongly dominate travel patterns (Rietveld, 2001). This holds true for both rural and urban areas. Non-motorised transport modes include bicycle, donkeys and animal drawn carts. Table 21 shows the distribution of respondents in terms of using non motorised transport in the study area.

**Table 21: Presence of non motorised transport in the study area**

<b>Presence of NMT</b>	<b>N</b>	<b>%</b>
Yes	96	80
No	24	20
Total	120	100
NMT introduced by VTTP		
Yes	15	12.5
No	80	66.7
Un aware	25	20.8
<b>Total</b>	<b>120</b>	<b>100</b>

Among other things the VTTP aimed at introducing the use of non motorised transport in order to ease transport and reduce the extent of head loading especially among the rural women. In the study area, only 12.5% of the respondents admitted that non motorized transport was introduced by the programme, while 66.7% indicated that these means of transport were there before VTTP and 20.8% were unaware of who introduced these means of transport. These results reflect the level of awareness and involvement of the community in the programme. Majority of the community members had been aware of the programme activities as most of them were much involved at implementation stage.

Considering ownership of NMT before and after VTTP (Fig. 7), only 28.3% of the respondents owned NMT before the programme, while 41.7% of the respondents owned the NMT after the programme. On the other hand, the results showed that the number of households, which did not own NMT decreased from 71.7% before VTTP to 58.3% after the VTTP.



**Figure 7: Ownership of non-motorized transport before and after VTTP**

It was further observed that improvement of village roads, paths to the farms and feeder roads may be the factor for the increased number of household owning non motorised means of transport. As Awadh (2006) observes, the means of transport in most rural areas comprise mostly bicycles, animal drawn carts and walking. Loads weighing between 5 to 20 kg are carried on the head or using donkeys as pack animals while a bicycle carries loads of up to 100 kg. Heavier loads are transported using oxen/donkey carts or very rarely pick-up-trucks. Traders in the villages use bicycles to transport commodities from the district centres to their shops. Similar findings by Rwebangira (2005) who evaluated transport situation in Uganda estimated that 75% of the trips were undertaken by walking, 22% by bicycles and only 2% by motorised vehicles, while in Ghana evaluation on rural roads with less than 25 vehicles per day revealed that 90% of the goods were transported using the head load.

Similarly, Rietveld (2001) shows that in rural areas in Indonesia where infrastructure is very poor and vehicle ownership very low almost 100% of the trips within the village take place by slow modes; between 80% and 90% of the trips in and out of the villages are made with non-motorised modes. Similar figures are observed in African villages and within urban areas (Davies, 2001; DANIDA 2006).

#### **4.8 Means of Ferrying Harvest from the Field**

Table 22 shows the distribution of respondents in terms of the means used to ferry crops from the field. The results show that majority of the respondents grow maize in their farms. Other crops grown were beans cowpeas, potatoes, vegetables and pyrethrum though in very small quantities. Before the VTTP, the dominant means used to ferry harvested crops from the fields was head loading with a slight change to the animal drawn cart after the introduction of the programme. These findings show that there were some improvements brought by the programme. It was observed further that some villages improved their feeder roads to ease access to the field and to the improved VTTP roads. This seems to be the main reason as to why there were changes in the means of ferrying crops from the field.

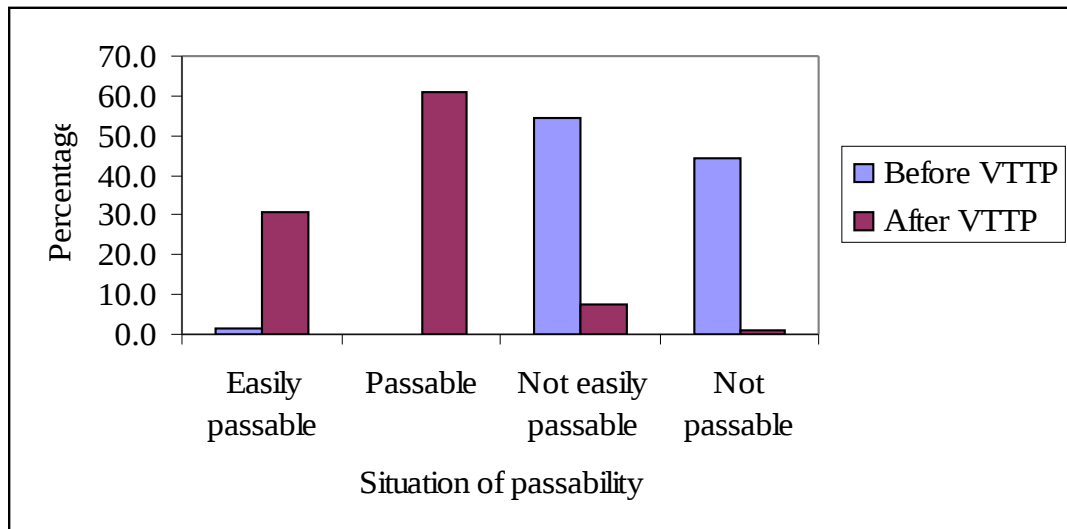
**Table 22: Distribution of respondents means of ferrying harvest from field**

	Means of Transport	Before VTTP		After VTTP	
		Frequency	percent	Frequency	Percent
Maize	Head loading	79	74.5	30	27.8
	Bicycle	7	6.6	12	11.1
	Donkey	3	2.8	6	5.6
	Animal drawn cart	15	14.2	52	48.1
	Wheelbarrow	0	0.0	3	2.8
	Motor vehicle	2	1.9	5	4.6
Beans	Head loading	49	81.7	20	32.8
	Bicycle	1	1.7	3	4.9
	Donkey	3	5.0	3	4.9
	Animal drawn cart	7	11.7	30	49.2
	Wheelbarrow	0	0.0	2	3.3
	Motor vehicle	0	0.0	3	4.9
Cowpeas	Head loading	17	60.7	4	12.9
	Bicycle	2	7.1	2	6.5
	Donkey	1	3.6	3	9.7
	Animal drawn cart	8	28.6	22	71.0
	Wheelbarrow	0	0.0	31	0.0
	Motor vehicle	0	0.0	0	0.0

#### 4.9 Road Passability

According to Fig.8, the passability of the road improved after the programme than it was before the programme. According to the findings, 30.8% of the respondents indicated that the roads became easily passable after the programme. This was against 1.7% of the respondents who disagreed with this statement indicating that the roads were passable even before the programme. From these findings, it can be said that there is a big improvement in some parts of the roads as the majority showed that after the programme the roads were easily passable as opposed to the situation which existed before the programme. All- year and all-weather passability of the road not only increases income from farming activities, but it also makes

these incomes more stable and thus enabling the poor to improve their management of the risk. Several of these effects have been also noted in impact assessment studies of rural roads in Brazil, Morocco, Peru and Tanzania (Grootert, 2002).



**Figure 8: Road passability before and after VTTP**

#### **4.10 Other benefits of the VTTP to the community**

The VTTP was aimed at generating various benefits to the community where the programme was implemented. Some of the benefits expected were employment from workshops for making and repairing drawn carts. Other benefits expected were increased frequency of public means of transport, lessening head loading, collecting harvest from the field and simplified access to agricultural inputs. Majority of the respondents (80%) showed that VTTP did not create employment from the workshop for making or maintenance of animal drawn carts as only 2.9% reported that VTTP introduced workshops for repairs, as opposed to 17.1% of the respondents who said the VTTP didn't create any employment opportunity (Table

23). These findings imply that the aim of VTTP for creating employment through workshop for repair of drawn carts was not reached.

On the increased frequency of public means of transport as the benefit from VTTP, only 12.4% indicated it as the most recognised benefit. This indicates that there is a change in benefits in terms of increased frequency of public transport resulting from the programme due to the fact that there were public transport services in the village. A positive change was observed in ferrying harvests from the field. This was confirmed by 67% of the respondents' who reported to have lessened head loading. Further, the study observed that 47.9% reported to have an easy access to farm inputs (Table 23).

This shows that VTTP had simplified transport and helped the community in ferrying goods using other means of transport like bicycles, animal drawn carts, donkey and motor vehicles. Also the findings imply that the VTTP simplified access to farm inputs like fertilizer and seeds. It was further observed that input suppliers were found visiting some of villages supplying seeds and insecticides to farmers.

**Table 23: Other benefits of the VTTP to the community**

<b>Other Benefits from VTTP</b>	<b>N</b>	<b>%</b>
1. Workshop repair for non-motorized		
Mostly recognized benefit	1	2.9
Recognized benefit	6	17.1
Least recognized benefit	28	80.0
<b>Total</b>	<b>35</b>	<b>100.0</b>
2. Increased frequency of public means of transport		
Mostly recognized benefit	13	12.4
Recognized benefit	33	31.4
Least recognized benefit	59	56.2
<b>Total</b>	<b>105</b>	<b>100.0</b>
3. Collecting harvest from the field		
Mostly recognized benefit	53	46.9
Recognized benefit	54	47.8
Least recognized benefit	6	5.3
<b>Total</b>	<b>113</b>	<b>100</b>
4. Lessening head loading		
Mostly recognized benefit	80	67.2
Recognized benefit	35	29.4
Least recognized benefit	4	3.4
<b>Total</b>	<b>119</b>	<b>100.0</b>
5. Easy access to agricultural inputs		
Mostly recognized benefit	57	47.9
Recognized benefit	56	47.1
Least recognized benefit	6	5.0
<b>Total</b>	<b>119</b>	<b>100.0</b>

#### **4.11 Community Participation in VTTP**

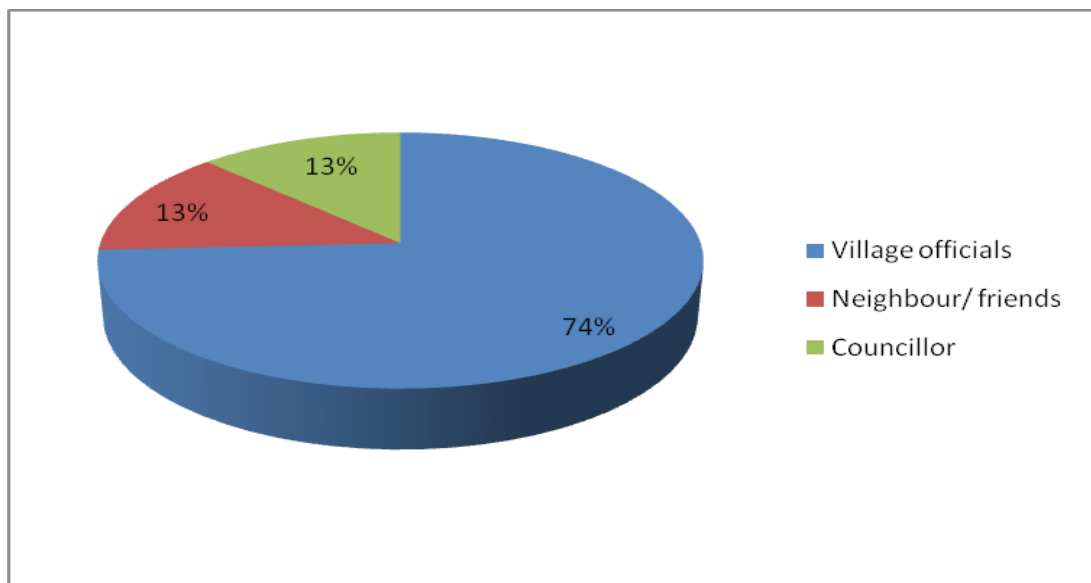
##### ***Level of community participation***

Participation in road works depends on several factors. Some of the factors include awareness of the activities with regard to rural roads, organisation of the programme from national level to local level and the type of contribution needed from the household and or individuals. Community participation in road activities was expected to cover such areas as planning, implementation, monitoring and



maintenance. Through discussion, it was learnt that every adult in the household was required to participate in the road work as community development activities as governed by the respective village by-laws. The by-laws required every household to be represented by at least one person every week in the community development activities that take place in their respective localities.

The findings indicate that the information regarding VTTP was mainly passed through village officials in village assemblies and or home visitation (Fig.9).



**Figure 9: Source of VTTP information to study respondents**

The extent of community participation was determined by asking each respondent to indicate the level of involvement in the programme activities (Table 24).

**Table 24: Distribution of respondents' extent involvement in road activities**

Extent of involvement	Poorly involved	Moderately involved	Highly involved	Not involved at all
	%	%	%	%
Planning	60.8	18.3	2.5	18.3
Implementation	6.7	54.2	36.7	2.5
Monitoring and Evaluation	66.7	15.8	3.3	14.2
Maintenance	52.5	5	2.5	40
<b>Total</b>	<b>186.7</b>	<b>93.3</b>	<b>45</b>	<b>75</b>

The study reveals that more than a half of the respondents (60.8%) were poorly involved in planning, 66.7% were poorly involved in monitoring and evaluation and (52.5%) were poorly involved in maintenance. A significant involvement of the respondents is registered in the implementation of the programme which involves excavation, digging of trenches, watering, removing of stamps, and laying of the culverts. This is not surprising as these types of activities in the VTTP require the highest level of participation from community members.

In ascertaining the level of significance in the variation of extent of involvement in planning, implementation, monitoring and evaluation, and maintenance across villages, ANOVA *F*-test was undertaken with the mean scores and standard deviation depicted (Table 25).

**Table 25: Descriptive statistics on the extent of involvement in road works**

Extent of respondents' involvement	N	Mean	Std. Dev	F-value	Sig.
<b>Planning</b>					
Lulanzi	30	1.27	0.64	22.013	<0.0001
Utengule	30	1.50	0.82		
Msalali	29	3.00	1.39		
Ukumbi	31	1.42	0.72		
<b>Implementation</b>					
Lulanzi	30	2.10	0.61	3.434	0.019
Utengule	30	2.27	0.52		
Msalali	29	2.59	0.78		
Ukumbi	31	2.45	0.57		
<b>Monitoring and evaluation</b>					
Lulanzi	30	1.30	0.65	13.844	<0.0001
Utengule	30	1.40	0.77		
Msalali	29	2.62	1.42		
Ukumbi	31	1.32	0.70		
<b>Maintenance</b>					
Lulanzi	30	1.70	1.29	15.990	<0.0001
Utengule	30	1.43	0.90		
Msalali	29	3.38	1.15		
Ukumbi	31	2.71	1.49		

Generally, the ANOVA *F*-test indicates that there is a significant difference ( $P < 0.0001$ ) on the extent of involvement in planning, monitoring and evaluation, and maintenance across four villages of Lulanzi, Utengule, Msalali and Ukumbi. With respect to implementation, the findings were significant different at  $P = 0.019$ . The mean score was the highest in the four participation aspects in Msalali village and the lowest in Lulanzi village except for the maintenance where Utengule was having the least mean score (1.43).

## **CHAPTER FIVE**

### **5.0 CONCLUSION AND RECOMMENDATIONS**

The aim of the current study was to assess the impact of VTTP initiative on peoples' income, community participation and increased access to social services in Kilolo District. The intention of this study was to generate information as to the continued contribution of rural roads in reducing poverty to the rural population of Tanzania.

#### **5.1 Conclusion**

Basing on the findings of the study, this study has shown that rural road provision has economic impact on all communities. The contribution of rural roads is evident in the improvement of economic activities and increased access to social services. With improved roads people can easily access to health centres, schools, markets and water sources. There is improvement in the ownership of means of transport as compared to the period before the programme. This is because communities can now own donkeys, bicycles and animal drawn carts. However, the benefits of improved roads were not evenly distributed. In some villages where the project was completed (e.g Lulanzi, Ukumbi, Msalali and Utengule), the communities enjoy the benefits of the programme while in the villages where the project was not complete the communities were yet to enjoy the maximum benefits of the improved roads. In Kilolo district there had been some of tasks which were yet to be completed under VTTP. These include installation of culverts and construction of bridges. In some villages only few kilometres of road were improved. On labour based technology and community participation, the following issues could be raised.

- i. Technology used (labour based) saved large sum of money in some villages through constructing village roads.
- ii. The improved roads enable communities in accessing farm implements and farm inputs. Through the VTTP, the farm inputs become available in some village headquarters. This concluded that improved roads have reduced to, some extent, head loading of farm produce either to the household compounds or to the markets
- iii. Communities are not highly involved in planning, monitoring and evaluation and maintenance. Despite this weakness, communities are highly involved in the implementation of the programme. This shows that there is still a long journey in reducing top down approach in implementing development projects.
- iv. Some villages are still waiting for the support from central government to accomplish some of the tasks like laying/constructing culverts, footbridges, drifts and constructing more roads.
- v. Communities are sensitized on how to construct rural roads in their areas; the sensitization was not done in monitoring and evaluation, thus resulting into weak monitoring and maintenance of the improved roads.

## 5.2 Recommendations

These findings have several implications on the government strategy of rural development. Rural road provision would provide benefits to a broad base of rural dwellers in terms of social and economic activities. They reduce some of the disadvantages associated with living in the rural area. However, as the distribution of impacts is uneven:

- i. The government should deploy resources to the most disadvantaged and the most remote communities, and small amount of funds should be set to maintain the already improved roads especially in urban areas.
- ii. Government should ensure earlier projects are completed before initiating and supporting new projects. Local Government Authorities should give priority to the on going projects in allocation of funds instead of funding new road projects. This will encourage communities to involve themselves more in the implementation of development projects. In areas/villages where road project are not complete because of financial resources from central government, community participation should be encouraged.
- iii. Rural road projects having important role in alleviating poverty among rural communities. The government and other stakeholders should put more efforts to scale-up rural road projects in other districts where VTTP has not been implemented in the country.

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## APPENDICES

### Appendix 1: Household questionnaire

#### VILLAGE TRAVEL AND TRANSPORT PROGRAMME; PEOPLES' INCOME AND ACCESS TO SOCIAL SERVICES IN KILOLO DISTRICT - IRINGA

##### *Instructions*

Please circle on the numbers that you think fits best

Write your response(s) in the lines provided

In case of any additional information which you feel that will help the researcher, please be free to add it in the space after the questions or you may attach an additional paper.

#### I. QUESTIONNAIRE IDENTIFICATION

Questionnaire Number.....Date of interview.....Interviewer.....

Name of respondent..... Region.....District.....

Division.....Ward.....Village.....Hamlet.....

##### Basic respondent's data

Person	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
1. Sex										
2. Age										
3. Marital status										
4. Main occupation										
5. Work on farm										
6. Household head										
7. Household possession										

##### Key:

**Sex:**                    1. Male                    2. Female

- Marital Status:** 1. Single 2. Married 3. Widow  
4. Widower 5. Divorced 6. Separated 7. Others
- Main Occupation:** 1. Farmer 2. Civil servant 3. Business person  
4. Unemployed 5. House work 6. Others
- Work on farm:** 1. Full time 2. Part time 3. None
- House hold head:** 1. Adult male 2. Adult female 3. Orphan

**Household possession**

1. Bicycle 2. Wheelbarrow 3. Animal drawn cart,  
5. Motor vehicle 7. Motor cycle 8. Donkey

**8. Education:**

1. None 2. Primary school years .....
3. Secondary School years..... 4. Post secondary years .....
5. Adult education years..... 6. Others (specify) years .....

- 9. Family type:** 1. Monogamy 2. Polygamy 3. Polyandry

**III. VTTP Activities and the Associated Income**

10. Did you participate in road activities? [i] Yes [ii] No
11. Who else in your household ever worked in the road construction project at any time? Men.....Women.....
12. Were you paid for the work you did? [i] Yes [ii] No
13. If yes, how were you paid?

[i] Paid on daily basis (Specify.....tshs)



[ii] Piece work payments (Specify how much per day) .....tshs

[iii] Others (specify).....

14. What activities did you perform during road construction?

Activity	Highly Involved	Sign. Involved	Not Sign. Involved	Not involved at all
Surveying				
Bush clearing				
Stripping and grubbing				
Boulder removal				
Excavation to level				
Ditching				
Spreading				
Watering				
Camber formation				
Culvert laying				
Others (specify)				

15. What are the activities that were done by VTTP

- i. ....
- ii. ....
- iii. ....
- iv. ....

16. What are some of the activities that arisen as a result of road work project

Activity

17. How many days/months did you work? .....

**III. VTTP Activities and the Associated Income**

**IV. Other Activities and Income not directly associated with VTTP**

18. Apart from road work, what are the other activities that you do?

[i] .....

[i] .....

[iii] .....

[iv].....

19. Of the activities mentioned in 18 above, which one generates income for you?

Activity	Average Income per Unit Sold

20. Do you own arable land?            [i] Yes                            [ii] No

21. How large is your arable land? .....acres

22. Size of the cultivated land

Cultivated land before VTTP (in acres)	Cultivated land after VTTP (in acres)

23. If there is a change in cultivated land, kindly give the reason(s) for the change.....

24. How far is your farm from the improved VTTP road? .....walking minutes

25. In the table below, kindly indicate amount of harvest obtain and the means used to ferry from the farms before and after the VTTP

Type of Crop	Before VTTP			After VTTP		
	Harvest on farm (kg/bags/tins)	Ferried Harvest (kg/bags/tins)	Means Used	Harvest on farm (kg/bags/tins)	Ferried Harvest (kg/bags/tins)	Means Used

Key:

- 1 Head loading    2 Bicycle    3 Donkey    4. Animal Drawn cart  
 5 Wheelbarrow    6 Motor vehicle

**V. ACCESS TO SOCIAL SERVICES**

25. How far (in walking minutes) is your household to the nearest improved road?

.....

26. Kindly complete the table below showing the situation of access to social services before and after the programme

Social Services	Distance from HH (in min.)	Means of Transport		Situation of access		Means of ferrying goods	
		Before	After	Before	After	Before	After
Market							
Water							
Health							
Education							
Court							
Police							
Others (specify)							

**Key**

A: Means of Transport

- 1. On Foot 2 Bicycle 3 Donkey 4 Animal Drawn cart
- 5 Wheelbarrow 6 Motor vehicle 7 Motor cycle 8 Others (Specify)

B: Situation of Access:      1. Very difficult      2 Difficult      3. Relatively fair  
 4. Not difficult 5. Unchanged 6. Motor vehicle  
 7. Others (specify)

C: Means of ferrying goods: 1.Headloading      2. Bicycle      3. Donkey  
 4. Animal drawn cart      5. Wheelbarrow 6. Motor vehicle  
 7. Others (specify) .....

27. Are there any Non Motorised Transport means that operate in your area?

- [i] Yes      [ii] No

28. If yes, was it introduced by the VTTP?   [i] Yes      [ii] No

29. In the table below kindly mention them

- i. ....
- ii. ....
- iii. ....
- iv. ....

30. Do you have a health centre in your village?

- [i] Yes      [ii] No

31. How far is it from your homestead? .....walking minutes

32. In case of emergency how do you ferry patients to the nearest health centre?

Means of transport	Before VTTP	After VTTP
[i] Ambulance		

[ii] Hire a private car		
[iii] Stretcher (machela)		
[iv] Bicycle		
[v] Wheel barrow		

33. Why do you choose the means identified in (32) above?

- i. Road situation from where the patient is
- ii. Availability of the means of transport
- iii. Financial capability
- iv. State of the patient
- v. State of the patient

34. Road condition can lead to poor education status in your area [i] Strongly agree  
 [ii] Agree [iii] Somehow [iv] Disagree [v] Strongly disagree

(b) Give reason for the choice above.....

**Housing Condition**

35. Does your household own any house anywhere in this village?

- [i] Has house
- [ii] Has no house

36. Kindly indicate in the table below the housing condition before and after VTTP

Housing condition	Before VTTP	After VTTP
Type of wall		
Type of roof		
Type of floor		
Toilet		

**\* Key**

**Type of wall**

1. Mud            2. Mud Bricks            3. Burnt bricks            4. Blocks  
 5. Others (specify).....

**Type of Roofs**

1. Tin/tiles    2. Grass thatched    3. Straw/polythene  
 4. Others (specify)

**Type of floor**

1. Mud            2. Concrete            3. Cement    4. Others (specify)

**Type of toilet**

1. No toilet    2. Pit latrine            3. Flash toilet    4. Others (specify)

37. Do you think there is any change in housing condition before and after VTTP?

- [i] Yes                      [ii] No

38. Do you think the change has any association with VTTP?      [i]Yes [ii] No

Give reasons.....

39. Is the road easily passable during the rain season?

<b>Passability of the road during rain season</b>	<b>Before VTTP</b>	<b>After VTTP</b>
Easily passable		
Passable		
Not easily passable		
Not passable		

**VI. LEVEL OF COMMUNITY PARTICIPATION**

40. Were you informed when road construction began?      [Yes]            [No]

- (b). If Yes, who informed you?    [i] Village officials    [ii] Neighbours/Friends  
    [iii] District engineer    [iv] Councillor    [v] Others (specify)

41. How was information passed?

- [i] Home visitation by identified informers
- [ii] Village assembly
- [iii] Posters
- [iv] Through mass media
- [v] Others specify

42. Were you involved in planning on how road works should be undertaken?

- [i] Yes
- [ii] No

43. If yes indicate the extent of your involvement.

Scale: 1- Not significantly involved 2- Significantly involved 3- Highly involved

Type of activity	Extent of Involvement		
	1	2	3
Planning	[ ]	[ ]	[ ]
Implementation	[ ]	[ ]	[ ]
Monitoring and Evaluation	[ ]	[ ]	[ ]
Maintenance	[ ]	[ ]	[ ]

44. If not significantly involved; Why?

- [i] Busy
- [ii] Unaware
- [iii] Others (specify)

45. Did you contribute anything for road construction? [i] Yes

- [ii] No

46. If Yes; what did you contribute during road works?

- [i] Give cash (specify amount given)
- [ii] Labour contribution (No. Of days worked: Paid .....Not paid.....)
- [iii] Land where road passed (Land size .....ha)
- [iv] Ideas on how construction should be done
- [v] Cash and Labour

47. Were the contribution

[i] Forcefully?

[ii] Willingly

[iii] According to the regulation set by village

[iv] Others specify



48. Who was involved in ensuring that the road activities went as planned?

- [i] Village road committee    [ii] District engineer    [iii] Village leaders
- [iv] Few people chosen to do the work    [v] No one did that
- [vi] I don't have Idea

49. Were there any road construction standards which were to be met during construction? [i] Yes    [ii] No

50. If Yes what were they? .....

51. Were you at one point checked to see if the standards set have been met?

- [i] Very often    [ii] Often    [iii] Somehow    [iv] Not very often    [v] Never

52. Do you think the road was constructed to your expectation?

- [i] Yes    [ii] No

Give reasons.....

53. Do you have any idea as to how much it cost to construct the road in your village?    [i] Yes    [ii] No

(b) If Yes How much? .....

54. In the table below, kindly indicate the number of motorised and non-motorised means of transport that you own before and after road works

Means of Transport	Owned (give number)	
	Before VTTP	After VTTP
Motorized		
1.....		
2.....		
3.....		
4.....		
Non-motorized		
1.....		
2.....		
3.....		
4.....		

**VII: Benefits of the VTTP to the Community**

55. In the table below kindly indicate the benefit that are realised from the introduction of non motorised transport.

Benefits	Tick	Rank (use 1, 2, 3)*
1. Employment		
Workshops for repair		
Training of the animals		
2. Reduced time		
Increased frequency of public means of transport		
Collecting harvest from field		
3. Lessening head loading		
4. Easy access to agricultural inputs e.g. fertilizers, seeds..		
5. Others (specify)		

Key\* 1 - Mostly recognized benefit

2 - Recognized benefit

3 - least recognized benefit

**Appendix 2: Interview Checklist**

1. Awareness of VTTP in Kilolo District (Objectives)
2. Where did the programme take place in the District and when did it begin
3. How is the programme undertaken?
4. What are the main activities [Probe: who did what, when, how, where]
5. Were the casual labourers paid? [Probe: how much, what were the criteria for payments]
6. What is the status of the programme in your district/ ward/ village [Probe: number of bridges/ culverts constructed/ installed, distance (in kilometre) maintained/ constructed]
7. Are there any activities that arose as a result of VTTP in your area? Mention them.
8. What would you consider as the immediate benefits/ results of VTTP in this district/ ward/ village? [Probe: the introduction of non-motorised transport, access to social services like health centres, schools, water sources, market, police, court of law, agricultural inputs]
9. How did the community participate in the programme? [Probe: levels of participation – planning, implementation, monitoring and evaluation and maintenance]
10. What are your general comments on VTTP and its sustainability in your district/ ward/ village