ASSESSMENT OF ON-FARM AND OFF-FARM INCOME GENERATING ACTIVITIES IN KISARAKE DISTRICT

BY

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This study was designed to assess on-farm and off-farm income generating activities in Kisarawe District. The study was conducted in five villages of Sungwi Division namely Kazimzumbwi, Sungwi, Kisarawe, Kifuru and Visege. It involved 101 randomly selected farmers. The general objective of the study was to assess income-generating activities. The specific objectives of the study were, (a) to identify the major on-farm and off-farm income sources at household level, (b) to identify the most important sources of income at household level and, (c) to delineate the main factors on income generation for identified sources. The study used a cross-sectional design that employed the survey method. The survey population comprised of smallholder farmers in five villages of Sungwi Division. Data were collected by using structured questionnaire. A random sample of 101 respondents was picked using a table of random numbers from the sampling frame that was developed. Field observations supplemented the questionnaire. Statistical Package for Social Sciences was used to analyse the data. Frequencies and percentages were used to present the results. The findings of the study show that the major on-farm income sources are cassava, cashewnut, orange, paddy and potato production. Major off-farm income sources were carpentry work, petty business and charcoal selling. But of the two income sources, most farmers depended on more on-farm activities. Off-farm sources have low contribution to income in the District. The most important income sources were obtained from on-farm activities namely crop (cassava and cashewnut) and local chicken production. However, income generation was affected by lack of market information, vermine, lack of market, lack of credit, unreliable rainfall, high cost of inputs, pests and
diseases. It was observed from this study that the District is only 28 kilometers from Dar es salaam, which facilitates easy transportation of produce to the main market (Kariakoo), and from town to the District. Being near the forest, raw materials for off-farm activities are obtained easily. Carpentry and charcoal business draws raw materials from the forest. About 52.5% of the respondents kept records for off-farm income generating activities. The study, among other things, recommends that Government and NGOs should mobilize the formation of farmers' groups to facilitate access to credit. The Ministry of Cooperatives and Marketing should provide market information to farmers through their associations on what to produce for both local and export markets. Well articulated official policies and incentives for the off-farm sector should be developed. Planners and policy-makers should recognize the important positive implication of improving smallholder farmers economic situation, and the need to support economic activities in the overall village development plans. There is a need for the government and Non Governmental Organizations (NGOs) to provide more technical and financial support to the farmers to undertake and augment income generating enterprises, such as simple technologies on processing and preservation of fruits and vegetables.
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DECLARATION

I, Florence Lameck Washa do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work and has not been submitted for a higher Degree in any other University.

Signature........................................

Date.................................
To my beloved parents Lameck Washa and Meruzi Ng'hebi who laid the foundation of my education.
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CHAPTER ONE

INTRODUCTION

1.1 Background

Over 90 percent of Tanzania's population lives in the rural area, and is directly or indirectly dependent on agriculture for living. The agricultural sector has consistently contributed more than 75 percent of Tanzania's export earnings, and accounts for more than 45 percent of the GDP (Bank of Tanzania, 1990). This implies that the agricultural sector will continue to play a central role in feeding the nation, generating income, and employment and in providing resources to other sectors of the economy including the growth of off farm rural economy, which is a recognizable stage in the transformation of semi subsistence economy to full commercialization (Food Studies Group, 1992).

Evidence from surveys done in Tanzania and other developing countries suggests that levels of off- farm earnings are generally low, whereas the majority of rural households reported that agricultural production is their main occupation, and subsequently their main source of income (Marketing Development Bureau, 1985; Food Studies Group, 1992).

Nevertheless, there is need to undertake a study at household level with the intention of having a reliable assessment of income generation from both the agricultural sector and off-farm activities. This will be a good benchmark to generate accurate database for better planning and decision-making purposes in
the village (rural) communities in the country. Agriculture and off-farm rural activities need to be developed and assessed for the overall social economic status, including off-farm enterprises for domestic and income earnings. It is vital to establish the determinants or factors affecting their level of productivity. Odegaard (1985) and Shayo, et al. (1988), argued that high consumer prices for food on parallel markets during the 1970's coupled with relatively low producer prices for export crops, induced small farmers to switch from cash crops to food crop production, this trend was towards food self sufficiency, but not surplus production for the market. There is increasing evidence that diverse livelihoods are widespread and enduring, even in relatively undiversified economies. These secondary sources of income are often ignored in official data (Gordon, 1999). Livelihood diversification can be regarded as a good thing for it offers potential for reducing risk associated with dependency on a single activity (Gordon, 1999).

1.2 Problem Statement

The on-farm and off-farm activities form the potential panacea for beefing up low-income households in both rural and urban centres. It is now being acknowledged that one of the strategies to alleviate poverty is for household families to undertake on-farm and off-farm enterprises (the informal sector) (Minde, 1985).

Nevertheless there is paucity of empirical information and data on this sector in Tanzania. To mitigate this problem, calls for a comprehensive baseline survey on the subject on a country-wise basis. It is on this observation that the study on assessment of on-farm and off-farm income generating activities in Kisarawe District in Coast Region was proposed.
1.3 Significance of the Study

It is anticipated that the results of this study will show the current situation of the ongoing on-farm and off-farm social economic activities.

Presumably there are positive and negative spillovers or externalities accruing from on-farm and off-farm activities; but the fundamental premise is that more positive externalities are nested in these enterprises or activities which directly or indirectly contribute to the well-being of the local community and the nation at large. The findings and data generated from the study will form a basis for better planning, decision making, revelations for further research work and policy formulation.

1.4 Justification

The need to undertake the study emanates from the fact that there is paucity of reliable qualitative and quantitative household data and information on income generation from both agriculture and off-farm sources bearing in mind that they play a potential role in mitigating food insecurity and poverty on a wide dimension in the rural communities. The researcher hypothesizes that food security will be achieved by stimulating economic growth in market oriented production, which should generate additional income for smallholder farmers and increase off-farm employment for rural and peri-urban populations.

This study is aimed at examining the problem comprehensively with the aim of assessing the income generation from both sources to determine their impact on the livelihood and well-being of the rural household. It also assists to identify the socio-economic constraints affecting the efficiency of income generation in the
study area and recommend remedial policy and intervention strategies

1.5 Objectives of the Study

The overall aim of the study was to assess the income generating activities from on-farm and off-farm sources.

The specific objectives of the study were:

(i) To identify the major on-farm and off-farm sources of income at household level.

(ii) To identify the most important sources of income at household level

(iii) To delineate the main factors on income generation for the identified sources.

(iv) Basing on the result from (i) to (iii) to recommend interventions and strategies to improve the socio-economic welfare of the people in the District.

1.6 Definitions of Terms

The following are operational definitions of some of the terms used in the study.

(i) Farm enterprises-Production activities including crop and livestock production, bee-keeping, aquaculture and fishing.

(ii) Off-farm activities-These are non primary economic activities which exclude agriculture and livestock production but include services, wage labour, construction, mining, manufacturing, agro-industrial processing and marketing of agricultural commodities
(iii) Household—People who at the time of survey were living together (sleeping under the same roof or in the same compound) including guests who had been there since more than two weeks before (Collier et al., 1986 pp 29-30). Where polygamy existed, the husband, wives and children were taken to constitute one household.

(iv) Rural areas—These are residential areas; villages and small towns which were identified as being rural in the 1988 national population census.

(v) Household head—The person who is responsible for day to day decisions regarding activities of the household.
CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This chapter reviews different literature on income generating activities: off-farm, their characteristics, their importance to economic growth, farm enterprises, major cause of low farm productivity, changing economic situation and some of the factors influencing income generation activities in both on-farm and off-farm enterprises.

The agricultural sector has been experiencing problems with respect to growth. Taking into account the importance of this sector to the national economy, there is a need to identify problems currently facing this sector in order to determine appropriate remedial measures bearing in mind the positive externalities of the off-farm production activities (Elis, 1980). Agricultural production in sub-Saharan Africa has increased at about 1.5 percent per annum between 1965 and 1990, while population growth averaged close to 3 percent over the same period (Dejene et al, 1997). The agricultural growth rate is well below the estimated 4 percent per year which is essential for many Sub-Saharan countries to reduce poverty, augment additional income earning opportunities for the rural poor and attain sustainable growth (Cleaver and Schreiber, 1994; Badiene and Delgado, 1995).

There is increasing consensus among economists and policy makers, that growth in the off-farm sector is associated with more developed economies where agriculture has provided the initial boost with linkages and multipliers to other sectors of the economy.
The agricultural sector is almost always the key to the development of a robust off-farm sector, with consumption linkage (agricultural income being spent on consumer goods) usually stronger than direct linkages to agriculture (input supply or agro-processing). Rural linkages facilitate market access and the transfer of finance, income and skills (World Bank, 1997). The World Bank has called for more rigorous socio-economic undertakings in assessing rural incomes accruing from both agricultural and off-farm activities and has taken the task of developing new strategies for rural development which centre on four interrelated key challenges namely:

1) Poverty reduction.

2) Economic growth (in both agricultural and off-farm sectors).

3) Food production and

4) Environmental sustainability (World Bank, 1997).

The rural livelihood concept used here by the researcher is based on that provided by Ellis (1998b), “A livelihood comprises incomes in cash and in kind, the social relations institutions that facilitate or constrain individual or family standards of living and access to social services that contribute to the well being of the individual or family”.

There is increasing recognition that households and individuals frequently have multiple sources of livelihood, and that this is widespread and enduring, even within relatively undiversified economies. Official data often give little indication of this because of the informal nature of many activities, sensitivities about providing information on income generation and the tendency for socio-economic surveys
(whether single visit or frequent visits at household levels) to neglect secondary sources of income or employment (Ellis, 1998). Yet as the World Bank (1997) stresses, an understanding of this complexity is central to the development of appropriate policies and intervention strategies to help poor people improve their livelihoods through income generation. Poor rural people seek livelihoods in the off-farm sources to:

(a) Complement seasonal agricultural incomes;
(b) Supplement inadequate or absent agricultural incomes and,
(c) Take advantage of opportunities arising in the off-farm season.

For the poorest, (a) and (b) are the most important in almost all rural areas and peri-urban centres in Tanzania and the rest of the developing countries (Ellis, 1998; Minde, 1985). Activities in the off-farm sources are particularly important for the rural poor, especially women who are comparatively disadvantaged and who form most of the victims of the poverty vicious cycle (Turuka, et al, 1998).

2.2 Off-farm Activities

Off-farm activities are also called off-farm enterprises or micro enterprises. They form a part of the rural informal sector. According to Seppala (1996), the informal sector may be an enterprise employing five people or less and which operates informally.

2.2.1 Characteristic of off-farm activities

Off-farm enterprises are normally undertaken by either the head of the household or by some members of the household or all members of a household or some
members of a household in collaboration with members of another household. Rural off-farm enterprises are normally small. For example, in Sub-Saharan Africa, one person enterprises constitute about 50% of off-farm enterprises, while more than 95% of them employ at most five people (Haggblade et al., 1989). The authors add that the activities are dominated by trade followed by manufacturing and services, while construction and mining come last. Moreover, women feature prominently in these activities. They give an example of rural Zambia where women own 60% of the off-farm enterprises.

2.2.2 Importance of off-farm enterprises

Off-farm activities are important for creating employment, production of locally needed commodities, income generation, growth of farm activities and poverty alleviation. Moreover, they employ many women. For example in Zambia, Benin, Ghana, Kenya and Nigeria 25-54% of off-farm enterprises employees are women. In doing off-farm activities rural people produce locally needed commodities. This is corroborated by the World Bank (1990, p.3) which documents that products from off-farm enterprises are for local market.

They are also an important source of income for many rural people in most developed and developing countries (Oludimu, 1991 p 371).

In Tanzania most rural households undertake off-farm activities on a part-time basis during the dry season when agricultural activities are done to a lesser extent. However data on off-farm activities are scarce.
2.3 Farm Enterprises

Agriculture is the main source of income for the world's poor (World Bank, 1990). Inspite of that fact, the contribution of agriculture to the national income varies greatly among the developing countries. For example, in Botswana and Malawi it contributes only 5% and 35% of Gross National Product (GNP) respectively (Mead, 1994). Since the majority of the farmers in developing countries live in rural areas, policies should strive to raise agricultural productivity to help rural poor (World Bank, 1990 p 33)

In Tanzania the Agricultural Sector accounts for 46% of Gross Domestic Product (Msambichaka and Naho, 1995). According to Bagachwa (1995) about 87% of Tanzanian rural households depend wholly on farm sources of income. Seppala (1996) estimates that the average proportion of income from off-farm activities in rural areas of Lindi Region Tanzania is at most 20%. The contribution of off-farm activities to rural incomes has been increasing. Smallholder farmers generate their income mainly by the sale of agricultural products especially sale of food crops, livestock and livestock products. According to study conducted by Kayunze (1998) indicated that the remittances raised the level of income of the households of outmigrants by 31% and the relative effect of remittance proved to be much greater on the poor households than the better-off households. On the other hand, migration of people from rural to urban areas affect income of the rural areas. The absence of male youth from villages affect the entire mode of production, thus encouraging more women to come out and take charge for the whole system.
2.3.1 Major causes of low farm productivity

Poor adoption of recommended agricultural technologies and especially decreased use of agricultural inputs, is the major cause of low agricultural productivity. According to URT (2001), the availability and use of fertilizers has been progressively declining. In most cases the supply of fertilizers, improved seeds and agro-chemicals has been low in the national demand. For example in 1995, the national demand for improved seeds was 12 000 tons but only 3 800 tons were supplied, this is a small difference as compared to past years. The big deficit occurred in 1999 / 2000 where out of demand of 30 000 tons only 7 080.4 tons were supplied and only 8 196.2 tons were supplied in 2000/2001. The declining trend in agricultural input supply indicates that smallholder farmers are not able to buy those inputs.

Elimination of subsidies in the case of fertilizers and the free market for input supply has led to a drastic decrease in inputs use, because cooperatives are unable to provide farmers with inputs on loan (Ponte, 2000). Producers' limited capital and access to financial services is thus a major reason hindering the adoption of recommended agricultural technologies, which results into low agricultural productivity.

2.4 Changing Economic Situation

For many years, developing countries have experienced severe socio-economic crisis that has compelled them to adopt World Bank/IMF-sponsored Structural Adjustment Policies (SAPs). The crisis started in the early 1970s and intensified in
1980s, coupled with the implementation of SAPs since mid-1980s, have eroded tremendously the purchasing power or the real value of salaries and wages of the majority of the people in Tanzania. As a result, their socio-economic condition has worsened progressively (Maliyamkono and Bagachwa, 1990).

Maliyamkono and Bagachwa (1990), further observed that in rural areas, the economic crises and Structural Adjustment Policies coupled with a combination of rising population pressure, environmental degradation, lack of appropriate innovations, low level of investment in agriculture, inadequate and irregular supply of inputs have led to a decline in output per unit of land (Marketing Development Bureau, 1986). The responses of the poor to these social-economic hardships vary widely. In urban areas, the poor are increasingly inventing plausible ways of becoming self reliant. The majority are now involved in on-farm and off-farm income generating activities. In rural areas there are three main social trends which show how rural people have reacted to these socio-economic hardships (Maliyamkono and Bagachwa, 1990). The first trend is that the majority of farmers are increasingly switching from the production of export crops like cashew, coffee, tea and cotton to food crops like cassava, maize, rice, wheat and banana. This is because the export crop producer prices offered to farmers are very unattractive. Also, the marketing channels of export crops, most of which are government agencies i.e Cooperatives and Marketing Boards are cumbersome and tedious since these agencies are very inefficient. On the other hand, the demand for food crops is increasing and it is the private businessmen who buy the crop directly from farmers and offer relatively better prices compared to the government agencies. The second trend is that farmers producing export and food crops are selling their
products to parallel markets which apparently offer more attractive prices than government institutions. The third trend is that some farmers are responding by seeking either part-time or full-time employment in off-farm economic activities.

The current economic activities being carried out by the urban and rural poor in Tanzania are more or less the same as far as income-generating activities are concerned. However, the economic activities show people’s hidden potentiality to react via social processes of self-help and self-organization in order to defend and protect their situation from problems of poverty and hunger (Ghai, 1987).

2.5 Factors Influencing Income Generation Activities

2.5.1 Non integration of off-farm activities in the formal development plans/programmes

Since rural people are fully involved in the development process, it is important that they are fully integrated into the formal financial sectors of the country. Rural people have been receiving little or no credit from banks in sub-Saharan Africa. This has a negative effect on rural people and productivity in general. The greater part of loans provided by commercial and development banks do not benefit the rural poor as intended.

Agricultural credit refers to supply of finance to farmers to enable them to develop their business. An almost universal requirement in agricultural production is finance. Credit for farming operations is provided in a variety of ways including private moneylenders or financial institutions such as banks or government subsidized credit service. In many countries the private money lenders are
preferred by smallholder farmers because their service is more handy, flexible, personalized source of credit compared to large government banks (Lugeye, 1991). Despite this, experience has shown that credit is only available to few progressive farmers and big government officials while majority are not aware of its existence or cannot qualify for credit even if they were informed.

In the past, developed and developing countries provided loans at subsidized interest rates to large-scale enterprises to increase employment and production. In contrast, little has been done to provide credit to small scale enterprises in developing countries for the last two decades. Mead (1989) has shown that small-scale enterprises provide goods, which are primarily, consumed by poor persons, utilize less capital and less foreign exchange and generate more employment of unskilled persons than do large scale enterprises. Small scale and micro enterprises development projects have been among the most successful within the limited range of strategies adopted by donors. Small scale enterprises are very important as they create employment and thus generate income, reduce imports and increase consumer goods available. African development, cooperatives and other banking institutions give credit according to their objectives and priorities. Evidence has shown that commercial and rural development banks in Tanzania will not lend to farmers who have little security to guarantee the loan, lack positive credit experience and are unable to prepare feasibility studies or meet high interest rates.
2.5.2 Customary laws and law of succession

Customary laws and law of succession deny women the control of children and produce raised by them. Women are reluctant to engage fully in income generating activities for fear that in-laws might take whatever has been gained through their efforts if their husbands die as most of the property goes to the husband's family.

2.5.3 Limited access to education

Many rural children drop out of school due to cultural biases in favour of domestic child labour, lack of school fees and early pregnancies. These result in high levels of illiteracy among rural people which forces them to engage in business activities which require little technical and managerial knowledge, but which earn them very little

2.5.4 Health of household members

Health factors constrain productivity. Poor food intake and poor primary health care services in rural areas negatively affect the health and energy of the rural people, and therefore their ability to perform income generation activities.

2.5.5 Limited access to information and markets

Majority of the rural people are not mobile because they are very busy with farm and household duties, and even they don't know where to get this information. Sometimes they might be knowing about the market but because of poor roads they cannot transport their products to market.
Apart from the above, rural people lack the technical knowledge on how to start business. Often assistance to farmers project is not accompanied by technical assistance package (Tovo, 1991). There is lack of monitoring and evaluation activities by the government or non governmental organizations. Once started farmer projects are left to operate on their own without guidance. Farmers are not guided and supported on ways to improve their activities and how to evaluate their projects in light of their objectives.
CHAPTER THREE
METHODOLOGY OF THE STUDY

3.1 Overview
This chapter deals with the methodological process which generated data for this study and outlines the statistical procedures which were used in analyzing the data. It includes description of the study area, research design, population, sample size, development and administration of the research instrument, pre-testing of the instrument and statistical analysis of data.

3.2 Location of the Study
This study was conducted in Kisarawe District located about 28 km from Dar es Salaam City centre. The District is situated roughly between latitude 6.35° and 7.35° south and between longitudes 38.15° and 39.3° east. It borders Mkuranga District to the east, Morogoro and Kibaha District to the west, Dar es Salaam to the north, and Rufiji District to the South (see Figure 1).

The District covers an area of 3535 sq km and ranks third among the five Districts of the Coast Region in terms of area. The District was thought to be ideal for studying on-farm and off-farm activities due to its high agricultural potential, which have caused good growth of off-farm activities. Administratively it has four Divisions, 14 wards and 77 registered villages.

The study was confined to Sungwi Division, which is one among four in Kisarawe District. Other Divisions are Cholesamvula, Maneromango and Mzenga (see Figure
The choice of the study area was based on: Easy accessibility by road throughout the year and the population in the division which is involved in a variety of activities both on-farm and off-farm, compared to the remaining Divisions where activities are less diverse. The financial and time constraints facing the researcher were other factors, which influenced the choice of the area.

Data were collected from five villages randomly selected from among 20 villages in Sungwi Division. These villages are Kazimzumbwi, Visegese, Kifuru, Sungwi and Kisarawe.
Fig 1: Map of Coast Region showing its Districts.

Source  Kisarawe District Land Office
Fig 2: Map of Kisarawe District showing surveyed area (Sungwi Division).

Source: Kisarawe District Land Office.
3.3 Research Design

The study used a cross-sectional survey design. A cross-sectional survey consists of asking questions, of a representative cross section of the population, at a single point in time. Instruments like questionnaires can be used (Bailey, 1978). According to Babbie (1990), this design is the most appropriate so long as the researcher can identify the population relevant to his/her interest.

The design can also be used for the determination of the relationship between variables. There were no problems in identifying the population for this study. In sample surveys, questionnaires and interviews are the main techniques used for data collection.

3.4 Sampling Procedures

3.4.1 Population

The target population for the study included all smallholder farmers in Kisarawe District.

Smallholder farmers can be identified by the following characteristics. They have low per capita income, they own small farms on average one hectare and they do subsistence farming, but sell the surplus for cash.

Simple random sampling procedure was used to select the names of 101 individual farmers from village registers.
3.4.2 Sample Size

The researcher decided to work with such sample size of 100 because of limited time and financial resource. However sample size is statistically large enough to make scientific conclusion.

3.5 Development and Administration of the Instrument

A questionnaire was developed in English then translated to Kiswahili with closed and open ended questions to collect both qualitative and quantitative data. After development of the instrument, comments were sought from agricultural professionals like agricultural economists and agricultural extensionists from SUA. Their comments and suggestions were incorporated into the questionnaire ready for pre-testing under field conditions. twenty respondents were used to pilot test the instrument. After pre-testing, it was found that no major changes in content were necessary except that certain questions were not clear and these were modified.

Data presented under this study were those related to on-farm and off-farm activities, major sources of income at household level, most important sources of income and main factors and constraints to income generation from identified sources. Data on other general characteristics of the respondents including age, gender, education, marital status and distribution of land size among respondents were also collected. The researcher was assisted by an enumerator to administer the questionnaire.
3.6 Data Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS) computer program, to determine descriptive statistics (frequencies and percentages). The data collected were summarized, coded, and transferred to computer code sheets for processing. Qualitative data were processed by categorizing, summarizing and presenting them in tabular form.

3.7 Measurement of Variables

Variables examined in this study were age, gender, education, marital status, and distribution of land size. Other variables were major income generating activities, duration spent on on-farm and off-farm activities, credit obtained by respondents, problems of on-farm and off-farm, market information, capital, availability of raw materials for off-farm activities, record keeping and market availability.

However other variable like income earned by respondents could not be obtained in this study because respondents were not willing to give correct information.
CHAPTER FOUR

RESULTS AND DISCUSSION.

4.1 Overview

This chapter presents the results from the analysis of data. The general objective of the study was to assess income-generating activities from on-farm and off-farm sources. The chapter is divided into eight sub-sections.

a) General characteristics of the respondents.

b) Income generation.

c) Sources of income by importance.

d) Sources of on-farm incomes

e) Major off-farm incomes

f) Factors affecting income generation

g) Problems in income generation

h) Opportunities for income generation.

4.2 General Characteristics of the Respondents

This section discusses general characteristics of sampled respondents in the area. The general characteristics examined in this study were age, gender, marital status, level of education, land size and crops grown by respondents. The purpose of choosing these characteristics was to determine whether they have any influence on income generating activities.
4.2.1 Gender of the respondents

Gender distribution of respondents is presented in Table 1. Out of 101 interviewed individuals 53 were females (52.5%) while 48 individuals were males (47.5%), which compares well to the national female; male ratio of 51:49

Results shows that majority of women are involved in farm activity as compared to men whose majority are involved in carpentry work, charcoal making and petty business (off-farm). These results agrees with URT (2001a) that majority of women constitute a significant proportion of on-farm labour in rural households.

4.2.2 Age distribution of the respondents

The results in Table 1 show that the majority (43.6%) of the respondents are between 26-45 years of age. This was followed by the age category of 55 years and above (34%) and 46-55 years group (21%) respectively. The results revealed that very few (0.9%) respondents were between 18 and 25 years. The results imply that there were very few youth involved in both on-farm and off-farm income generating activities. The reason for this could be that most of them had left for Dar-es-salaam city to look for more paying jobs. The majority of the respondents are middle aged people whom Ishengoma (1998) regarded as the most active, participative and productive segment of the rural population.

4.2.3 Marital status of respondents.

The majority of the respondents were married (79.2%). Very few respondents were separated (1.9%), divorced (2.9%) , single (5.9%) and 8.9% widowed (Table1). This implies that the greater proportion of the respondents were mature people. This is because both the divorced and widowed implicitly belong to adult category.
According to Mtama (1997) marriage has an effect in the production process as it increases labour availability in the households. The results suggest that income generating activities could be shared between husbands and wives and other family members.

4.2.4 Education of the respondents

Education is perceived as among the factors that influence an individual's perception of an intervention before making decision to take part. It also imparts the desire of an individual to learn more, to attend training and seek information regarding agricultural and off-farm activities (Luhasi, 1998).

According to Table 1 about 59.4% of all sampled respondents have attained primary level of education, whereas 17.8% have attended adult education classes. The results revealed that only 7.9% of the total respondents reported to have completed secondary level of education. However 14.9% of the respondents have not attended school. The majority have completed primary level of education. Granted that those who attended formal schools know how to read and write, therefore there is a possibility that change agents can easily communicate with them through posters, extension leaflets, newsletters and other written materials. Due to high literacy level, the community has potential to actively participate in seeking information regarding income generation and improve their business activities and hence their incomes.
Table 1: General characteristics of the respondents.

<table>
<thead>
<tr>
<th>Characteristics of the respondents</th>
<th>Number of mentioned</th>
<th>Percent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>48</td>
<td>47.5</td>
</tr>
<tr>
<td>Female</td>
<td>53</td>
<td>52.5</td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>60</td>
<td>59.4</td>
</tr>
<tr>
<td>Secondary</td>
<td>8</td>
<td>7.9</td>
</tr>
<tr>
<td>Adult</td>
<td>18</td>
<td>17.8</td>
</tr>
<tr>
<td>None</td>
<td>15</td>
<td>14.9</td>
</tr>
<tr>
<td>Christian</td>
<td>30</td>
<td>30.3</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25years</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>26-45years</td>
<td>44</td>
<td>43.6</td>
</tr>
<tr>
<td>46-55years</td>
<td>21</td>
<td>20.8</td>
</tr>
<tr>
<td>&gt;55years</td>
<td>34</td>
<td>33.7</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>6</td>
<td>5.9</td>
</tr>
<tr>
<td>Married</td>
<td>80</td>
<td>79.2</td>
</tr>
<tr>
<td>Widowed</td>
<td>9</td>
<td>8.9</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
<td>2.9</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Land size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.4-2.4 Ha</td>
<td>65</td>
<td>64.4</td>
</tr>
<tr>
<td>2.5-5.0 Ha</td>
<td>28</td>
<td>27.7</td>
</tr>
<tr>
<td>&gt; 5.2 Ha</td>
<td>8</td>
<td>7.9</td>
</tr>
<tr>
<td>Crops grown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cassava</td>
<td>92</td>
<td>91.1</td>
</tr>
<tr>
<td>Maize</td>
<td>86</td>
<td>85.1</td>
</tr>
<tr>
<td>Cashew</td>
<td>78</td>
<td>77.2</td>
</tr>
<tr>
<td>Orange</td>
<td>77</td>
<td>76.2</td>
</tr>
<tr>
<td>Cowpeas</td>
<td>53</td>
<td>52.5</td>
</tr>
<tr>
<td>Coconut</td>
<td>33</td>
<td>32.7</td>
</tr>
<tr>
<td>Paddy</td>
<td>33</td>
<td>32.7</td>
</tr>
<tr>
<td>Sweet potato</td>
<td>23</td>
<td>22.8</td>
</tr>
</tbody>
</table>

Source: Survey data, 2000.
4.2.5 Land size among respondents

Table 1 shows the land available for use in farm production. About 64.4% of the total sampled respondents had land size between 0.4 and 2.4 ha, whereas about 27.7% of the respondents had land size between 2.5 to 5.0 ha. Only 7.9% of them had land in excess of 5 ha.

Generally the results imply that land is not a problem in the area compared to other parts of the country e.g. Kilimanjaro, Arusha and Mbeya. Due to this, there is potential for agricultural activities in the area. For example, investment in horticultural crops is very possible because they have ready market in the nearby city of Dar-es-salaam.

4.2.6 Crops grown by respondents

Table 1 indicates the distribution of respondents according to the type of crops grown. Crops produced by respondents are maize, cassava, cashew, oranges, cowpeas, coconut, paddy and sweet potato. Of food crops grown by smallholder farmers, cassava was found to be the most prefered crop (that is according to 92% of the respondents). Cassava is more grown because it is resistant to drought, pests and diseases, also easily marketed in the city and is the main staple food for coastal people.

Cashewnutt is the second crop following in order of importance. It is the main cash crop grown in area.
4.3 Income Generation Activities.

Both on-farm and off-farm income generating activities were surveyed in the study area in order to see their contribution. On-farm incomes were obtained from cassava, cashew, orange, paddy, potato and livestock. Off-farm sources were carpentry, petty business and charcoal making.

Importance of income generating activities was determined by the number of respondents mentioning that particular source. The results are presented in Table 2.

Table 2: Sources of income by rank.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Activity</th>
<th>Number of respondents</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cassava</td>
<td>54</td>
<td>54.0</td>
</tr>
<tr>
<td>2</td>
<td>Cashewnut</td>
<td>35</td>
<td>34.7</td>
</tr>
<tr>
<td>3</td>
<td>Orange</td>
<td>24</td>
<td>23.8</td>
</tr>
<tr>
<td></td>
<td>Paddy</td>
<td>24</td>
<td>23.8</td>
</tr>
<tr>
<td>4</td>
<td>Potato</td>
<td>17</td>
<td>16.8</td>
</tr>
</tbody>
</table>

**Off-farm**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Activity</th>
<th>Number of respondents</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Carpentry</td>
<td>24</td>
<td>23.8</td>
</tr>
<tr>
<td>2</td>
<td>Petty business</td>
<td>18</td>
<td>17.8</td>
</tr>
<tr>
<td>3</td>
<td>Charcoal making</td>
<td>13</td>
<td>12.8</td>
</tr>
</tbody>
</table>

Source: Survey data, 2000

Slightly more than 50% of respondents mentioned cassava as number one contributor to on-farm income. This result was considered true because majority of respondents grow cassava both for food and cash.
Cashewnut ranked second, mentioned by 34.7% of respondents. Although cashewnut is a cash crop, the results suggest that its contribution is smaller compared to cassava. The reason for this could be that, it takes long time to come into maturity, it is susceptible to fungal diseases and its cost of production is higher to the extent that farmers fail to manage the crop profitably.

Orange and paddy ranked third as a source of income mentioned by only 23.8%. That is, their contribution to on-farm income was small. This implies that they are just produced for subsistence. The contribution of sweet potato were considerably very small, hence ranked fourth.

In off-farm activities, carpentry ranked number one in income generation. Petty business and charcoal making ranked second and third respectively.

4.4 Sources of On-farm Incomes

On-farm incomes are incomes from sale of crops and/or livestock products, bee-keeping products, aquaculture and fishing.

In a farming community crop production ranks first in importance followed by livestock production. The most commonly grown crops in the area were maize, cowpeas, cassava, cashewnut, sweet potato, oranges and paddy. Livestock kept are mainly local chicken. Table 3 below shows on-farm income generating activities in the area.
Table 3: On-farm income generating activities in area (n=101)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number mentioning</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local chicken</td>
<td>75</td>
<td>74.5</td>
</tr>
<tr>
<td>Crops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cassava</td>
<td>54</td>
<td>54.5</td>
</tr>
<tr>
<td>Potato</td>
<td>17</td>
<td>16.6</td>
</tr>
<tr>
<td>Cashew nut</td>
<td>35</td>
<td>34.7</td>
</tr>
<tr>
<td>Orange</td>
<td>24</td>
<td>23.8</td>
</tr>
<tr>
<td>Paddy</td>
<td>24</td>
<td>23.8</td>
</tr>
</tbody>
</table>

Source: Survey result, 2000.

Majority (74.5%) of respondents raise local chicken (Table 3). This is because they are cheaper to raise in terms of feeding and management and also they multiply faster. Chicken are raised in a free range system. The main purpose for raising them is both for food and selling. In case of selling, the chicken have ready market and fetch good price of Tsh 1500-2000. Observation shows that on average every household had at least 10 chicken.

Cassava is the major food and cash crop grown in Kisarawe District. Majority of farmers cultivate cassava because it is their traditional food and also the source of income. The crop is resistant to draught, pest and diseases and also gives high yield. Under good management about 7.5 tonnes of fresh cassava can be obtained per hectare, and they can store well in the field in case of lack of market. It is used as a snack during breakfast, as well as dinner and its price is affordable by the majority. It fetches high prices during Ramadhan fasting whereby it is used for breaking fast. Besides, the cassava plant has multiple uses for example cassava leaves are traditional vegetable (kisamvu) and dried stems are used as firewood. The crop is very important in the area because it also guarantee food security. Table 3 shows that cassava was a source of income for 54% of the respondents.
The results further show that cashewnut had significant contribution to the income of the respondents. About 34.7% of the respondents depend on cashewnut. These figures are smaller than expected as the District has a programme of reviving the crop. However this crop has high production cost, for example the cost of sulfur used for controlling fungal diseases is not affordable by the majority of farmers who are poor. These results agree with Ponte (2000) that prices for inputs are not affordable by smallholder farmers. Due to this fact majority of farmers have abandoned cashew farms and shifted to cassava as their cash crop as a result many farms are left in bush, which again aggravates the problem of vermine.

Table 3 shows that paddy and oranges had equal contribution (23.8%) to the income of respondents. Oranges could have big contribution to the income but this competes with other orange producers from Tanga, Morogoro and Kibaha for the same market (Kariakoo). Oranges produced in Kisarawe are traditional varieties which are not preferred by customers and most of them appear black because are infected with fungal diseases, as a result they are just sold locally. Farmers produce local varieties of paddy which is low yielding. The varieties are tasty with good aroma. Lack of water, inputs, labour demand, and vermine seem to limit increased paddy production hence their contribution to income.

Sweet potato is a tuber crop grown in the area. The crop is resistant to draught but it seems that the crop is not preferred by respondents because they do not fetch good price. The results show that about 16.6% of the total sampled households indicated that sweet potatoes was a source of household income.
4.5 Factors Affecting Income Generation

4.5.1 Problems in income generating activities

Market information is a key ingredient in business. Lack of knowledge and skills for business planning and management among entrepreneurs are key constraints to the development of smallholder farmers. The majority of farmers do not know, for example how to calculate cost of their production, how to analyse consumer needs and how to set price for their products (Ssali, 1998). On top of that farmers have little information about the market in which they operate and there is no institution or private sector organization providing market information that is accessible by smallholder farmers. This results in a limited range of products and little recognition of the opportunities for diversification. Results have revealed that 89.1% of respondents have no market information this implies that farmers will continue to operate under loss and they will not get out of the vicious circle of poverty.

Large part of the District is covered with forest, forest reserve area covers about 500 sq km, which is 14.4% of the total land in Kisarawe District, whereby area suitable for agriculture is 3090 sq km (URT, 2001b). Farms are small and scattered; as a result control of vermine like wild pigs, warthog, and monkeys is difficult. These attack crops at growing and maturity stages and cause big crop loss. Field results have revealed that about 86.1% of respondents reported that vermine were the major problem in their farming activities.
Table 4: Problems affecting income generation activities.

<table>
<thead>
<tr>
<th>Rank</th>
<th>On-farm</th>
<th>Number mentioning</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lack of market information</td>
<td>89</td>
<td>89.1</td>
</tr>
<tr>
<td>2.</td>
<td>Presence of vermin</td>
<td>87</td>
<td>86.1</td>
</tr>
<tr>
<td>3.</td>
<td>Lack of market</td>
<td>82</td>
<td>81.2</td>
</tr>
<tr>
<td>4.</td>
<td>Lack of credit</td>
<td>79</td>
<td>78.2</td>
</tr>
<tr>
<td>5.</td>
<td>Unreliable rainfall</td>
<td>73</td>
<td>72.3</td>
</tr>
<tr>
<td>6.</td>
<td>High cost of inputs</td>
<td>38</td>
<td>37.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rank</th>
<th>Off-farm</th>
<th>Number mentioning</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lack of market information</td>
<td>89</td>
<td>89.1</td>
</tr>
<tr>
<td>2.</td>
<td>Lack of credit</td>
<td>66</td>
<td>65.3</td>
</tr>
<tr>
<td>3.</td>
<td>Lack of market</td>
<td>33</td>
<td>32.7</td>
</tr>
</tbody>
</table>

Source: Survey result, 2000.

In the light of trade liberalization, market orientation is taking a crucial role in the economic success of farmers and entrepreneurs (Ssali, 1998). As liberalization gains ground local producers lose assurance of markets. Imported goods and produces are seen by consumers as being superior to local ones. About 81.2% of the respondents stated that there was no reliable market for sale of products from off-farm activities. The results imply that farmers do not know what is demanded by customers. These results compare well with those of Mandara (1998) that farmers are faced with problems of market due to lack of information and poor infrastructure.

All over the country smallholder farmers are constrained by lack of funds to run their business. They depend on own savings, which take longer to accumulate. The little amount of money available does not allow for investing (Ssali, 1998). Access to credit by smallholder farmers is sometimes difficult due to inflexible credit requirement conditions set by financial institutions (Minga, 1998). Consequently entrepreneurs rely exclusively on their families and friends for capital which is
generally insufficient (Wurdennman, 1998). The overall results showed that about 65.3% of the respondents reported the lack of credit for off-farm activities as a major problem. The results have also revealed that the majority of the respondents (78.2%) undertaking on-farm income generating activities that lack of credit was also a major hindrance for undertaking business activities in the area. This agrees with what was mentioned by Lugeye (1991) that credit is only available to few progressive farmers.

Unreliable rainfall was reported by 72.3% of the respondents to be among factors limiting agricultural development. In most African countries, agriculture is rainfed and therefore highly susceptible to drought (Makundi, 1996). Agricultural production is normally subject to fluctuations because of the changes in weather conditions. The rain-dependent agriculture practised by most farmers means that there are good levels of production when there are adequate rains and poor levels when there are no rains.

A steep increase in prices and poor availability of agro-chemicals prohibit development of agricultural activities. Prices of inputs such as pesticides and fungicides, medicines for preventing and treating crops and animal diseases limit growth and development of the rural sector (Ishengoma, 1998). The results in Table 4 show that 37.8% of the respondents revealed that high cost of input constrain respondents in their farming activities. This implies that farmers have low purchasing power and thus cannot afford prices of inputs. It may also imply that selling price is lower than production cost (Machumu, 1995; Ponte, 2000; Wambura, 1988)
Smallholder farmers continue to be in poverty due to lower producer prices, poor input availability and poor market structure among others. However, after the implementation of the major economic reforms the smallholder farmers are still in vicious cycle due to high input prices caused by the removal of subsidy.

4.5.2 Opportunities for income generation

The District is only 28 kilometers from Dar es Salaam, this distance facilitates easy transportation of produce to the main market (Kariakoo), and from town to the District. Being near the forest, raw materials for off-farm activities are obtained easily. Carpentry and charcoal business draw raw materials from the forest.

Many business activities in the informal sector do not keep records due to different reasons. However, a survey done by Page (1979) indicated that businessmen who keep financial records are apparently more successful than those who do not keep records. About 52.5% of the respondents revealed that records were kept for off-farm income generating activities. Record keeping will enable them to evaluate their activities and facilitate access to credit.

4.6 Major Off-farm Income Generation Activities.

Carpentry is the major off-farm income generating activity in the area. The results showed that 23.8% of the respondents reported that carpentry was the major off-farm activity. Besides the District having a big forest area, it seems that the potential of using timber to make carpentry products is not fully exploited. This could be caused by lack of technical skills and appropriate working tools.
Petty business and charcoal making (17.8% and 12.8%) were other off-farm income activities. These results suggest that petty business was not well developed in the area hence their low contribution to off-farm income. The results imply that farmers lack entrepreneurship in business and they need training. Through probing it was revealed that people are aware of environmental degradation therefore they do not engage themselves in charcoal business. Results imply that the community is aware of environmental conservation, as the proportion of respondents engaged in charcoal making is low.
CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.0 Overview

In view of the results from the study, some major conclusions and recommendations can be drawn with regard to household income accruing from on-farm and off-farm activities.

5.1 Conclusions

Based on the findings of the study, the following conclusions can be drawn:

(i) Major on-farm income sources were cassava, cashewnut, orange, paddy and potato production, while the major off-farm sources were carpentry work, petty business and charcoal selling.

(ii) The most important income sources were on-farm, namely crop (cassava and cashew) and local chicken production.

(iii) Income generation was affected by lack of market information, vermin, lack of market, lack of credit, unreliable rainfall, high cost of inputs, pests and diseases.
5.2 Recommendations

i) The government and NGOs should mobilize the formation of farmers groups to facilitate access to credit institutions. Farmers should be trained on credit utilization to enable them avoid credit misuse and long repayment period.

ii) Smallholder farmers should be provided with information by the Ministry of Cooperatives and Marketing through farmers associations on markets, and should be encouraged to produce for different needs for both local and export markets.

iii) Well articulated official policies and incentives for the off-farm activities should be developed. Planners and policy makers should recognize: important positive implication of improving smallholder farmers economic situation. There is need to support economic activities from village government and thus integrating economic activities in the overall village development plans.

iv) The government and non-governmental organizations (NGOs) should provide more technical and financial support to the farmers to undertake and augment income generating enterprises, such as simple technologies on processing and preservation of fruits and vegetables.
REFERENCES


of Dar es salaam. pp 29-36


Appendix 1. QUESTIONNAIRE DESIGN FOR THE INCOME GENERATION ON-FARM AND OFF-FARM ACTIVITIES IN KISARWAE DISTRICT.

PART ONE: BACKGROUND INFORMATION.

1. Name of village.
2. Ward.
3. Date of interview.
4. Name of respondent.
5. Age of the respondent.
6. Gender of respondent.
   1 = Male  2 = Female
7. Education level of the respondent.
   1 = Primary education.
   2 = Secondary education.
   3 = Adult education
   4 = None.
8. Marital status of the respondent.
   1 = Single.
   2 = Married.
   3 = Widowed.
   4 = Divorced.
   5 = Separated.
9. How much land do you own? ........ acres
10. How much land is used for agriculture? ....... Acre

PART TWO: MAJOR SOURCES OF INCOME.
11. What are your major crops? 
12. What farm income generating activities are you engaged in?
   Livestock
   Crops
13. Do you rent land in?
   1=Yes  2=No
14. Duration spent on farm income generating activities as compared to off-farm income generating activities
   1=More time
   2=Less time
   3=Equal time
15. Have you ever obtained credit.
   1=Yes
   2=No
16.5. If yes, when ........

CONSTRAINTS TO FARM INCOME GENERATION ACTIVITIES.
17. Tick three most important problems you encounter in your farming activities.
   1=Pest and disease
   2=Wild animals.
   3=Financial problems.
4=Marketing problems.
5=Low producer price.
6=Lack of capital.
7=High cost of inputs.
8=Unreliable rainfalls

OFF-FARM INCOME GENERATING ACTIVITIES

18. What are your major off-farm income generating activities..............................

19. Where do you sell your produce?
20. When do you sell your produce?
21. Is there any other market for your produce
22. Do you pay any fee for your activity/business
   1=Yes
   2=No
23. What is the source for your raw material and input for off-farm business?..............
24. How easy is it to get raw materials?
   1=Easy
   2=Very easy
   3=Difficult.
   4=Very difficult.
25. Have you ever obtained credit for off-farm activity?
   1=Yes
   2=No
26. Do you keep record for your off-farm.
   1=Yes
   2=No

27. How do you use such records?..........................

28. What problems do you face in off-farm activities?

    THANK YOU VERY MUCH FOR YOUR COOPERATION.