AN ASSESSMENT OF THE ROLE AND UTILITY OF STOCK FRIENDS CONCEPT AS A STRATEGY IN POVERTY ALLEVIATION: THE CASE OF NGOMENI COMMUNITY OF MWINGI DISTRICT IN KENYA

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DECLARATION AND APPROVAL

DECLARATION

This thesis is my original work and has not, wholly or in part, been presented for an award of a degree in any other university.

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SUPERVISORS' APPROVAL

This thesis is the candidate's original work and has been prepared under our guidance, and is submitted with our approval as his official university supervisors.

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DEDICATION

To Jennifer my wife and Tony and Loy my children

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ABSTRACT

One of the biggest challenges facing the third world today is high levels of poverty among its population of which Kenya is not an exception. Different ways of poverty alleviation are applied ranging from political, economic, socio-economic and socio-cultural. One such socio-cultural way is the stock friend's strategy. Although this strategy contributes to poverty alleviation in pastoral and agro-pastoral societies, the strategy is partially effective among the Ngomeni Community of Mwingi District, because of unknown factors. However, it was postulated that the problem may lie in community's poor awareness of the strategy; community poor understanding of the purposes of stock exchange; community poor understanding of the right types and numbers of livestock for the exchange; low socioeconomic status of the participants; and the rate of adoption of the strategy. The strategy is thus threatened with disappearance, which will be detrimental to the community socially and economically. The study therefore assessed the influence of these postulated problems on community adoption of the stock exchange strategy, and subsequent poverty levels of the community, and suggested some recommendations for promoting the strategy from the findings. This was accomplished through use of a socio-ecological survey of 233 households, sampled from a sampling frame of livestock keepers from four sub-locations, and complemented by key informant's interviews of resource people in the area. The data was analysed using the Statistical Package for the Social Sciences (SPSS) computer software. Descriptive and regression analyses were used to determine the associations and influences of the six factors (independent variables), and one intervening factor, on poverty levels of the community (the dependent variable). The most important factors found to be associated with and influencing poverty were: the degree of community awareness of stock exchange strategy (β value of -0.433 that explained 23.8% variation); the degree of community understanding of the purpose of stock exchange strategy (β value of -0.345 that explained 17.4% variation) ; community knowledge of type and numbers of stock used in the stock exchange (β value of -0.449 that explained 25.5% variation); and adoption of the stock exchange strategy itself. These are therefore the factors that should be addressed by any interventions directed towards solving the poverty problem of this Community through the use of the stock friend's concept.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF PLATES

LIST OF APPENDICES

LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
CBS	Central Bureau of Statistics
CIPAV	Centre for the Investigation in sustainable systems of Agricultural Production
FEWS NET	Famine Early Warning System Network
GoK	Government of Kenya
HIV	Human Immune Virus
ICIPE	International Centre of Insect Physiology and Ecology
KAP	Knowledge- Attitude- Practice
KSHS	Kenya shillings
KNBS	Kenya National Bureau of Statistics
LRRD	Livestock Research for Rural Development
LU	Livestock Unit
MDGs	Millennium Development Goals
NGO	Non-Governmental Organization
PRSP	Poverty Reduction Strategy Paper
SPSS	Statistical Packages for the Social Science

CHAPTER ONE
INTRODUCTION

1.1Background

Globally, more than six billion people are sharing the earth. Of these, over one billion have consumption levels below one US dollar a day while over two billion live on less than two US dollars a day (World Bank, 2001). Meanwhile in the last fifty years, average life expectancy in the developing countries as a whole has increased (Kane, 1995), resulting in an increase of the population and so a demand on natural resources. Such increase in the demand for natural resources has lead to over-exploitation of the resources, especially in marginal and other unviable environments resulting to land and resources degradation which in the long run contributes to poverty. In the Sub-Saharan Africa, poverty has increased since 1990 and will, at the present trend, drop only very slowly in the next eleven years, unless there is a major change in prospects (World Bank, 2004).

One of the biggest challenges facing Kenya today is high levels of poverty among its citizens. Poverty has been persistent in the country despite government's effort to combat it through national development programmes. This is reflected in the rising number of people without food, and with inadequate access to other basic necessities (Mango *et al.,* 2004). Kenya's current Poverty Reduction Strategy Paper (PRSP) perceives poverty as inadequacy of incomes and deprivation of basic needs and rights, and lack of access to productive assets, as well as poor social infrastructure and markets. The minimum level of consumption at which basic needs are assumed as satisfied is known as the poverty line. Most of the poor live in the rural areas and include subsistence farmers and pastoralists (Mango *et al.,* 2004). The absolute (overall) poverty line is estimated at KShs 1,239 per adult equivalent per month in rural areas and at KShs 2,648 in urban areas. The absolute poverty line is the minimum amount of money necessary for people to afford (on adult equivalent basis) their basic minimum food and non-food requirements. Mwingi District has 60% of its people (individuals) living in absolute poverty, while 66.5 % of the households are in absolute poverty and 55 % of individuals in hard-core poverty (GOK, 2002).

Pastoral nomadic people live in unpredictably varying environments (Bollig, 1996), and initiate exchange of livestock for reasons of security. Herders exchange livestock in return for social capital and symbolic capital. Both forms of capital may be put to use in times of need as herds can decrease rapidly in bad seasons, or in an epidemic or a raid. Formalized relations like bride wealth exchange, bride wealth distribution, and stock-friendship create a social universe where people are connected by long-relay circles of livestock exchange. During periods of stress, minor and less formalized transactions are nested into these circles. During a drought, these gifts are essential for maintaining household viability and a minimum of exchange obligations (Bollig, 1996).

One of a number of strategies that pastoralists and agro-pastoralists use to combat and alleviate poverty is based on the stock friend's concept. According to Widstrand (1975), stock friend's strategy is the loaning and sharing of animals/herds as a survival strategy. It is also used for building social contacts and bonds within the group/community. Such relationships are built with friends spread widely as a safety mechanism to ensure survival of some stock in time of catastrophe in own location. It is also used as a means of improving breeds and providing immediate subsistence to those in need.

Development agencies fail to appreciate and use some of these traditional methods to complement the efforts in alleviating poverty, and so enhance the loss of some of these useful socio-cultural roles, with the poorest members of the community affected most. But more pathetic is that the communities themselves seem to be dropping these socio-cultural innovations either through downplaying and neglect, or through faded awareness of the innovations. The result is the ultimate disappearance of the innovative cultural practices such as seemingly the case of the stock-friends strategy among the Mwingi agro-pastoralists. This strains the traditional pastoral economy, with the Mwingi agro-pastoralists failing to benefit from the stock friends provisions at the expense of their social wellbeing as poverty is perpetuated.

The Knowledge, Attitude and Practice (KAP) concept, primarily used in medical and health research, assumes that for adoption of innovations (such as use of new medication, use of the

stock friend's strategy, etc) is influenced by the degree of knowledge of that innovation and the attitude so formed by the potential user of that innovation. Yet another concept that explains adoption is Everret Rogers' adoption of innovation theory (Rogers, 1983), which suggests that among other factors that influence adoption, affordability, availability , accessibility and adaptability of the innovation intended to be adopted are necessary and important. Both these concepts can be used in determining the extent of adoption of the stock friend strategy among Ngomeni agro-pastoralists.

Incidentally, the stock exchange strategy has been adopted and practised by some agro-pastoralists of Ngomeni in Mwingi, but its impact on poverty levels and alleviation has not been obvious, or clearly understood by development proponents and the communities alike. What has been assumed, however, is that communities' general awareness of the stock-friends strategy, and their ability to offer cattle for exchange to the needy, are necessary conditions for the adoption of the strategy. In turn, the stock friend strategy would influence alleviation and possible eradication of poverty among the Mwingi agro-pastoralists. Thus, an assessment of the role and utility of the stock friend concept among Ngomeni agro-pastoralists may generate informed suggestions as to how the concept may be applied to mitigate poverty among the herders.

1.2 Statement of the problem

Although the stock friend's strategy is known to have benefited pastoralists and agro-pastoralists in many parts of Kenya through the reduction of poverty and attenuation of its agonizing impacts through exchange of livestock and products, the strategy has not been as beneficial among the Ngomeni community of Mwingi District.

One explanation for this is the low socioeconomic status (SES) of the people which hinders them to offer livestock for the exchange, and their lack of awareness and knowledge of the concept. Thus, this old traditional strategy seems to have been neglected, and has thus faded away, eroding the interest of the communities, culminating to inadequate understanding of the strategy

and the processes involved. Yet the stock friend strategy demonstrates tremendous potential to rid of poverty in Ngomeni.

Thus the problem is exacerbated, presumably, by the communities' (1) blurred awareness of the existence of the strategy amongst them; (2) lack or inadequate understanding of the purpose of stock exchange strategy; (3) lack or inadequate knowledge of types (e.g. for breeding, milking, etc) and numbers of the livestock exchanged; (4) lack or inadequate knowledge of the appropriate frequency of the exchange; (5) the low socioeconomic status of the participants (both of the giver and of the receiver of the exchange); and (6) lack or inadequate understanding of the actual role of the strategy.

The demise of the strategy will be detrimental to the community's social and economic wellbeing.

1.3 Study objectives

The broad objective was to investigate the role and the utility of the stock friends strategy in poverty alleviation in Ngomeni Division, Mwingi District, through the assessment of communities' awareness and understanding of the strategy and its processes, their ability to offer the cattle for exchange (as dictated by their socioeconomic status), and their adoption of the strategy, which is expected to influence poverty alleviation among the communities.

These relationships are depicted in the conceptual framework model 1 (Figure 2).

Specifically, the study concentrated on assessing:

1. The community's awareness of the existence of the strategy amongst them;
2. The community's understanding of the purpose of stock exchange strategy;
3. The community's knowledge of the types (e.g. for breeding, milking, etc) and numbers of the livestock exchanged;
4. The community's knowledge of the frequency of the exchange;
5. The socioeconomic status of the participants (both the giver and the receiver of the exchange);

6. The role and utility of the stock friends strategy among Ngomeni community;
7. The relationships between community awareness and knowledge about the strategy, their socioeconomic statuses in influencing adoption of the strategy, and the consequent influence on the poverty levels.
8. The potentiality of stock exchange strategy to be made more adoptable and useful to the Ngomeni communities so as enhance poverty alleviation.

1.4 Hypotheses

The study hypotheses to be tested are the relationships of the variables depicted in the study's conceptual frame work models (Figures 1 and 2), stated as follow:

H_0 1: There is no statistical significant relationship between community awareness of existence of stock exchange strategy and their adoption of the strategy, and so their poverty levels.

H_0 2: There is no statistical significant relationship between community's understanding of the purpose of stock exchange strategy and their adoption of the strategy, and so poverty levels.

H_0 3: There is no statistical significant relationship between community's knowledge of types (e.g. for breeding, milking, etc) and numbers of stock exchange involved in the strategy and their adoption of the strategy, and so poverty levels.

H_0 4: There is no statistical significant relationship between community's knowledge of frequency of stock exchanged and their adoption of the strategy, and so poverty levels.

H_0 5: There is no statistical significant relationship between the socioeconomic statuses of the givers of the exchange and their adoption of the strategy, and so poverty levels of the receivers.

H_0 6: There is no statistical significant relationship between the community's understanding of the role of stock exchange strategy and their adoption of the strategy, and so poverty levels.

H_0 7: There are no statistical significant relationships between the six independent variables, in depicted in the conceptual model (Figure 2), and adoption of the strategy, and so poverty levels of receivers.

1.5 Justification

Pastoral and agro-pastoral societies are closely inter-related through well-defined and extensive institutional and social frameworks for sharing livestock when some members of the community lose their herds (Tandigar and Farah, 1996). Loaning animals and sharing herds is one very important part, not only for survival strategy, but also for building up of social contacts and bonds within the group. For example the Pokot, as well as herdsmen of many other groups, use the intricate system of stock friends to build relations with friends spread as widely as possible so as to have some stock left elsewhere in time of a local catastrophe. Thus the stock friends strategy does not only involve loaning and sharing herds, but also borrowing breeding or milking animals to improve one's herd, or to subsist on his friends stock in time of difficulties. This study assessed the contribution of the stock friend's strategy through livestock sharing and exchange, to combat poverty among the Ngomeni community.

A survey carried out by the Ministry of Livestock and Fisheries Development in Ngomeni Division indicated that most of the livestock were grounded on stock friend's strategy basis, although the communities had little knowledge on its importance in poverty alleviation (GOK, 2005). Although economic factors are certainly significant in explaining poverty levels among rural agricultural households, they fail to account for all causes of household poverty, and as to why some households become and remain poor while others come out of poverty yet they seem to operate within the same economic environment. This research therefore addressed socio-cultural factors, as one of the traditional ways of alleviating poverty in Ngomeni.

Socio-cultural factors are significant in livestock exchanges. In some groups, such as the pastoral and agro pastoral communities, the exchanges may even outweigh economic considerations in poverty alleviation. They establish the context in which the socio-economic factors become significant in poverty alleviation. In order to understand these dynamics, the study focused on

socio-cultural ways of poverty alleviation in pastoral and agro pastoral communities especially the stock friend's strategy, which seems to be fading away. The Ngomeni people are in semi arid environment where livestock keeping contribution is high compared to other enterprises. Thus a way is needed to promote this industry, to be consistent with environmental and cultural ways of the community. Stock exchange friendship is one of the ways.

1.6 Definitions of terms

The following key terms and concepts are defined as follows:

Stock friends: *S*tock Friends strategy: The loaning/ transfer/ exchange and sharing of animals/ herds in a pastoral or agro pastoral society for the purpose of security, strengthening social bonds and social capital, assisting partners during difficulties, etc.

Household: A social group in which members resides at the same compound or *boma*, share needs, and make joint coordinated decisions on resources allocation and income pooling.

Poverty: Is the inability of an individual or a household to access the basic needs that are primarily food, shelter, clothing, education, and health.

Pastoral household: is a household where more than fifty percent of total income, including the value of goods produced and consumed within household, comes from livestock

Agro-pastoral household: is a household where half of the total income, including the value of goods produced and consumed within the household, comes from livestock and the other half comes from crops production.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews literature relevant to the theme of the study, including issues of poverty, stock friend's concept and its adoption and the people involved in the stock friends strategy.

2.1 Poverty in broad sense

Poverty is the inability of an individual or a household to access the basic needs that is food, shelter, clothing, education, and health (GOK, 2002). A common method used to measure poverty is based on incomes or consumption levels. A person is considered poor if his or her consumption or income level falls below some minimum level necessary to meet basic needs. This minimum level is usually called the "poverty line". which is defined as the percentage of the population living on less than $1.25 a day at 2005 international prices(World Bank, 2010).What is necessary to satisfy basic needs varies across time and societies (World Bank, 2000). Poverty has many dimensions; and has to be looked at through a variety of indicators levels of income and consumption, social indicators, and indicators of vulnerability to risks and of socio-political access (Mango *et al.*, 2004). Poverty is hunger. Poverty is lack of shelter. Poverty is being sick and not being able to see a doctor. Poverty is not having access to school and not knowing how to read. Poverty is not having a job, is fear for the future, living one day at a time. Poverty is losing a child to illness brought about by unclean water. Poverty is powerlessness, lack of representation and freedom (Mango *et al.*, 2004). In this study reference was made to poverty as the inability of a household to access the basic needs like food, clean water clothing, education, and health.

2.2 Classification of poverty

Relative poverty is a measurement of the resources and living conditions of parts of the population in relation to others. Relative poverty, is a matter of social equity, and is associated with the development of policies for the reduction of social inequalities and the creation of mechanisms to compensate for the more extreme differences in wealth, living conditions and

opportunities (Sen, 1994). Absolute poverty is, understood as the minimum set of resources a person needs to survive. Absolute poverty is a matter of acute deprivation, hunger, premature death and suffering; in practice, it may be difficult to measure it in a consistent way, but the consensual understanding is that this is an intolerable situation, requiring prompt corrective action (Sen, 1994). The other classifications are chronic poverty, consumption poverty and resource capability (Schwartzman, 1998).

Hardcore poor are defined as those who would not meet the minimum food calorie requirements. In this case, the rural hardcore poor are those whose total expenditure is less than Kshs 927 per adult equivalent, per month. Mwingi District has more than half 55% of its people living in hardcore and 45 % of the household are below the hardcore poverty line. The poverty situation in the district is evenly distributed, but varies from division to division and among each socioeconomic group. The poverty levels in the division show an increasing trend if not checked. Poverty levels in Mwingi district are shown in Table 1 below. Poverty is hunger. Poverty is lack of shelter. This poverty has been worsened by the recurrent droughts, which cause severe food shortage and animal deaths (GOK, 2002).

Table 1 Distribution of poverty by types in Mwingi District

	Total number	Food poverty (%)	Absolute poverty (%)	Hardcore poverty (%)
Individuals	303,828	65.5	60	55
Number of households	58,433	53.5	66.5	45

Source: (GOK, 2002).

2.3 Measuring poverty at the country level

Kenya is a low-income, food-deficit country with a GDP per capita of about US$775 and more than half of its population below the poverty line (52%), (World Bank, 2010) and a Gross National Income (GNI) of US $1,492 (UNDP, 2011). The 2011 UNDP Human Development Report ranked Kenya among the low human development countries of the world, placing it 143rd

out of 187 countries. Ngomeni Division which is in Mwingi North Constituency had its poverty line at 59% (World Bank, 2010) thus much higher than the national average.

Information on consumption and income is obtained through sample surveys. Such surveys are conducted regularly in most countries. These sample survey data collection methods are increasingly being complemented by participatory methods. Interestingly, new research shows a high degree of concordance between poverty lines based on objective and subjective assessments of needs (World Bank, 2000). For the purpose of Ngomeni households, poverty was assessed from the community point of view of what poverty was at their household level.

2.4 Multidimensional poverty index (MPI) approach

The Oxford Poverty and Human Development Initiative (OPHDI) of Oxford University and the Human Development Report Office of the United Nations Development Programme (UNDP) launched in July 2010 a new poverty measure that gave a "multidimensional" picture of people living in poverty which its creators said could help target development resources more effectively. The Multidimensional Poverty Index (MPI) had supplanted the Human Poverty Index, which had been included in the annual Human Development Reports since 1997. Research findings from the Multidimensional Poverty Index were made available at a policy forum in London and on line on the website of OPHI. Like development, poverty is multidimensional but this was traditionally ignored by headline figures. The MPI published for the first time in the 2010 Report, complemented money-based measures by considering multiple deprivations and their overlap. The index identified deprivations across the same three dimensions as the human development index (HDI) and shows the number of people who are multidimensionality poor (suffering deprivations in 33% of weighted indicators) and the number of deprivations with which poor households typically contend. It could be deconstructed by region, ethnicity and other groupings as well as by dimension, making it an apt tool for policymakers (UNDP, 2011) Nutrition ,child mortality, make up health, years of schooling, children enrolled make up education,cooking fuel, toilet, water, electricity, shelter, and assets make up living standards. The dimensions are health, education, and living standards while others. Nutrition ,child mortality, years of schooling, children enrolled ,cooking fuel, toilet, water, electricity, shelter, and assets are indicators((UNDP, 2011). In Ngomeni study, the same

dimensions were used but with difference in combination of indicators as outlined in the measurement of variable poverty level of receivers that poverty in each household, was assessed on the basis of adequacy of basic needs, namely food, water, shelter, health care, energy source, education, and regular cash income.

2.5 Millennium Development Goals

The flows of trade and capital that integrate the global economy may bring benefits to millions, but poverty and suffering persist. Responding to such concerns, governments and international development agencies have begun to re-examine the way they operate. In September 2000, 189 countries signed the Millennium Declaration, which led to the adoption of the Millennium Development Goals (MDGs). The Millennium Development Goal called for halving the proportion of people living in extreme poverty and suffering from hunger between 1990 and 2015. The MDGS are a set of eight goals for which 18 numerical targets have been set and over 40 quantifiable indicators have been identified. The goals are: (i) Eradicate extreme poverty and hunger; (ii) Achieve universal primary education; (iii) Promote gender equality and empower women: (iv) Reduce child mortality; (v) Improve maternal health; (vi) Combat HIV/AIDS, malaria, and other diseases; (vii) Ensure environmental sustainability; and (viii) Develop a global partnership for development.

While each goal is important in its own right, they should be viewed together as they are mutually reinforcing. Achieving them will require building capacity for effective, democratic, and accountable governance, protection of human rights, and respect for the rule of law (World Bank, 2004). The goals on poverty, education and health were addressed by the study.

2.6 Pastoral people's perception of poverty

Sociological problems that affect pastoral development are mainly cantered on the socio-economic values placed on the livestock by pastoral people. Cattle are kept as a tradition, for prestige, power and status. Cattle as wealth are means of subsistence and power to purchase and exchange for other commodities (Aboud and Aboud, 1994). Cattle are a form of security in terms of disaster and old age. They are a way of acquiring more wives and, so more children to herd

our big herds and, above all, our cattle are for ceremonial and ritual obligations. Cattle are form of a bank, as the business men and employed people put money in a bank and turn to bank for day to day needs (Aboud and Aboud, 1994).

Santos and Barrett (2006) asserted that poverty is associated with particular Communities' or categories of people. Irrespective of income or nutrition, the cultural constructions surrounding cattle herders place them at the centre of society and portray them as rich, while others who are at the periphery, in the bush, are regarded as poor. Pastoralist societies define poverty in terms of lack of livestock, this being their key resource. Pastoralists are relatively wealthy (with herd sizes ≥ 40 cattle) or poor (with herd of one cow). Social transfers (gifts between households) are used to manage shocks after a catastrophe, but not all herders have equal access to such transfers. Access to such transfers is based on ethnicity and social acquaintance. Therefore if pastoralists base their wealth on livestock related activity like sharing and exchange of livestock, it has an impact on their way of life.

2.7 Importance of livestock in pastoral economy

The importance of livestock and their contribution to human welfare and improved agriculture is recognized (LRRD, 2004). They contribute about 25% of the agricultural gross domestic product in sub-Saharan Africa, and even exceed this value in some West African countries (LRRD, 2004). They provide income, which is vital to household food security Thus; livestock is their insurance to survival (Aboud, 1982). For the Karamojong, cattle play a major role in, personal aspirations, political inclination, dancing, and songs (Hudson, 1970). The indication is that almost all activities be they economic, social, or cultural are cantered on livestock.

2.8 Adaptive measures of pastoralism

Pastoralism as an adaptive strategy based upon the three main resources of animal herds, pasturelands and water (Negi, 1995). The pastoral and agro pastoral economy is subsistence oriented. It aims at providing a regular supply of food for the extended families and the communities for physical and social well-being. They protect their herds against natural risks through strategic methods, such as Sharing and loaning stock to others. They tend to keep a

variety of livestock, to meet the different ecological situations and exchange requirements. For example, goats are kept as quick producing animals, for milk yields and offspring's (Widstrand, 1975).

The pastoral communities have developed different safety net mechanisms for their poor clan members. Supports mechanisms such as sharing livestock products are crosscutting and used by all communities. In Afar and Somali, this type of sharing resources and benefits is so extreme to the extent that private saving is discouraged. However, the size of livestock holding determines the application of the strategy of mutual help. Mobility of livestock is a necessity in the pastoral areas for the best economic use of range resources coping with the ecosystem variability (Emana *et al.*, 2006).

Population movements and adaptations have forged links between groups: violent ones such as cattle rustling and raids, peaceful ones such as marriages, reciprocal relationships built on sharing of animal and collaborative ones such as creating labour network (Ahmed and Abdel, 1996). Under traditional systems, coping strategies during drought such as mobility, species diversification, stratification or stock lending have enabled the herders to return to herding even after a severe drought (Ahmed and Abdel, 1996).

The arid lands of Kenya contain a large nomadic population, most of whom are poor and isolated. The pastoral and agro pastoral societies have characteristics that have evolved as adaptive measures to their harsh, unfriendly environment for their survival. It is some of these values like sharing of livestock, which were fading away that needed to be assessed for promotion.

2.9 Adoption of innovation

According to Lauer (1982), Diffusion and adoption occurs over time, therefore, one individual communicates anew idea to another individual in a context of a particular social system, and this leads to either an adoption or a rejection by the second individual. If the second individual adopts, he or she will normally pass through five stages: awareness, interest, evaluation, trial,

and finally, adoption. Thus, adoption involves the acceptance and use of an innovation by the individuals, while diffusion involves the spread of the innovation within the social system.
According to Rogers *et al.* (1988) adoption is a decision to make full use of a new idea as the best course of action available and diffusion as the process by which new ideas are communicated to the members of a society over time, while an innovation is an idea, practice, or object perceived as new by an individual or other unit of adoption. The characteristic of an innovation, as perceived by the members of a social system, determines its rate of adoption. Rogers (1983), indicated that the rate of adoption is the relative speed with which an innovation is adopted by members of a social system. It is generally measured as the number of individuals who adopt an idea in a specified period, and that one important type of variable in explaining rate of adoption of an innovation is its perceived attributes. Which are: (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability, and (5) observability

In addition to these perceived attributes of innovation, other variables affect innovation's rate of adoption (1) type of innovation –decision, (2) nature of communication channels (3) nature of social system, (4) extent of change agent promotion efforts.

Relative advantage is the degree to which an innovation is perceived as better than the idea it supersedes. It matters little whether the innovation has a great deal of "objective'
Advantage to a potential adopter but what matters is whether or not an individual perceives the innovation as being advantageous (Rogers *et al.*, 1988).

Compatibility is the degree to which an innovation is perceived as consistent with the existing values, past experience, and needs of the receivers. An idea that is compatible will be adopted more rapidly than that is incompatible

Complexity is the degree to which an innovation is perceived as difficult to understand and use. Some innovations are readily understood by most members of the social system: others are complex, and will be adopted more slowly.

Trialability is the degree to which an innovation may be experimented with on a limited basis. New ideas that can be tried on the instalment plan will generally be adopted more quickly than innovations that are not divisible for trial

Observability is the degree to which the results of an innovation are visible to the receiver and to others. The easier it is for an individual to observe the results of an innovation, the more likely the individual is to adopt it

In the Mwingi District case the five attributes of adoption are applicable in that stock friends strategy is perceived as advantageous for providing labour to the poor and very compatible for the processes of giving the stock is traditionally based. The strategy is not complex for it involves giver and receiver and time frame for maturity of the animals if bull/steers. The trials are easy for the receiver needs only two animals to start with and the results are fast to see for the animals starts ploughing in the next planting season. These attributes will help in assessing the adoption of the strategy.

2.10 The purposes of livestock exchanges

In pastoral societies, people use livestock as a form of exchange. Instances of livestock transfer mark specific stages of life, such as circumcision or marriage. Pastoralists transfer livestock, as gifts, on the basis of short-term loans, and as trade. For example, Gabbra transfers their camels as gifts, on the basis of short-term loan, through trade and trust (Soga, 1997). Asset transfers are best understood as insurance of permanent income, preventing recipients from falling into persistent poverty and excluding those who are not expected to be able to reciprocate (Santos and Barrett, 2006).

Santos and Barrett (2006), found evidence of highly nonlinear cattle accumulation dynamics among transfer arrangement of cattle which respond to recipients' cattle losses, but only so long as the recipient's herd does not fall. According to Soga (1997), Gabbra lend camels to other family groups for a certain specified period as a short-term loan. Both personal camels and holding camels can be lent out except for the camels that are borrowed from another family

group. For example, a family group lacking sufficient camel milk would borrow a milk camel for one to three years, a family group, which has no bull camel, borrow a bull during mating season while a family group with insufficient loading camels for shifting settlements would borrow loading camels for several days. This indicates that there are different exchanges in a pastoral or agro pastoral community set up which need investigation.

2.11 The relationship between the giver and receiver

Livestock exchange is carried out among close friends or relatives, in which defrayments of one party are deferred for a long period of time. The other exchange is between unrelated persons, in which the transaction is concluded on the spot (Itaru, 2002). Additions of livestock to herds through exchanges and gifts, to build herds has usually been assumed to be relatively minor compared to births and relevant when the need for rebuilding arises after major losses (Vries *et al.*, 2006). The Samburu and Turkana pastoralists of Kenya form "stock friendships" in which animals are exchanged. For at least 150 years, Basotho and Western Zambians have used it for genetically improving their cattle (McCorkle, 1999).

The East Cushitic peoples, such as the Rendille, Gabbra and Boran peoples, have the peculiar system of livestock transfer classified as the trust system. Such difference is derived not only from the number of animals reared and the scarcity of livestock (Sato, 1997). The relationship, which exists between an owner and any trustee, is an important part of the human relationships, which has been referred to, in different names, such as share by Spencer, (1973), loan by Schlee, (1989) and Dahl, (1979) trust by Sato, (1992) and Soga, (1997). This study is using the term stock friends as in Widstrand (1975).

2.12 Survival strategies of nomadic pastoralist

Nomads live in areas of climatic extremes; consequently their grazing patterns have to be flexible and opportunistic. In order to profit from widely dispersed resources whose availability varies from year to year. They also raise several kinds of animals to enable use of available resources and meet environmental variations. They also combine raising animals with small-scale farming, fishing, and petty trading or after migrant labour. They have strong commercial

skills, trading or selling animal hides, milk and meat in exchange for grain, tea and modern consumer goods (New Internationalist, 1995). Nomadic peoples are organized into tribes or clans who have a customary claim over a specific territory. Tribal elder's control who has access to common property like water, pasture, game or wild foodstuffs. Outsiders have to seek permission to use resources on land, which traditionally belongs to another group. Strong tribal identities are also one way pastoral nomads have of banding together to defend their livestock against theft.

Poor and middle-income pastoralists in livestock-raising area follow survival strategies based on the selling of animals, straw and wood until the growth of fresh pasture with the onset of the rainy season (FEWS NET, 2003). Other survival strategies of pastoral households include reducing consumption of family food reserves needed to ensure household food security and change in eating habits of households. The diversification of herds by the pastoralist as a survival strategy gives light why considerations of types of livestock are put into account in this study.

2.13 Diffusion effect and awareness

Diffusion effects are the cumulatively increasing degree of influence upon an individual to adopt or reject an innovation, resulting from activation of peer networks about an innovation in a social system. Rogers (1983) gives an example of if only 5% of the individuals in a system are aware of an idea, the degree of influence upon an individual to adopt or reject the innovation is quite different from when 95% have adopted. The scholar went further indicating that there exists a complex but important interrelationships between the rate of knowledge (awareness) about an innovation in a system and its rate of adoption, and that the level of knowledge at any given time is an addition of the total amount of information about an innovation available to the average individual in the system. When such a level of information (and accompanying networks influence) is very low, adopting of innovation is unlikely for any given individual. As the rate of awareness (knowledge) of the innovation increases up to about 20 to 30%, there is very little adoption (Rogers, 1983).

The degree of awareness of the stock friend's strategy, the process involved and other awareness variables investigated gives rate of adoption of the strategy and thus indicates the direction of poverty levels in Mwingi.

2.14 "KAP-Gap" (Knowledge- Attitude-Practice)

The main outcome of the persuasion stage in the decision process is either a favourable or an unfavourable attitude towards the innovation. Rogers (1983), assumed that such persuasion leads to a subsequent change in overt behaviour (that is adoption or rejection) consistent with the attitude held. But there are many cases in which attitude and actions are quite disparate. Such a discrepancy between favourable attitudes and actual adoption is frequently found for contraceptive ideas in developing nations. For instance the surveys of parents of child- bearing age in nations like India and Pakistan shows that 80 percent or more of these individuals say they are informed about family planning methods and have favourable attitudes towards using them. But only 15 or 20 percent of the parents have actually adopted contraceptives. This attitude- use discrepancy is referred to as KAP- gap (Rogers, 1983).

The KAP gap is applicable in Mwingi case in that the respondents are very much aware of the stock friends strategy thus have the knowledge about the strategy but some are not practicing due to other factors like perception that it is old tradition custom of assisting the poor of that (animals given out by some clans might not survive long in the house hold.)

2.15 Social network theory

Social network theory stems from its difference from traditional sociological studies, which assume that it is the attributes of individual actors whether they are friendly or unfriendly, smart or dumb, that matter. Social network theory produces an alternate view, where the attributes of individuals are less important than their relationships and ties with other actors within the network (Granovetter, 1973). A group of individuals with connections to other social worlds is likely to have access to a wider range of information. It is better for individual success to have connections to a variety of networks rather than many connections within a single network.

Similarly, individuals can exercise influence or act as brokers within their social networks by bridging two networks that are not directly linked (Granovetter, 1973).

A social network is a social structure made of nodes which are generally individuals or organizations. It indicates the ways in which they are connected through various social familiarities ranging from casual acquaintance to close familial bonds. In livestock exchange both social network and traditional sociological studies theories apply. An example of a social network diagram

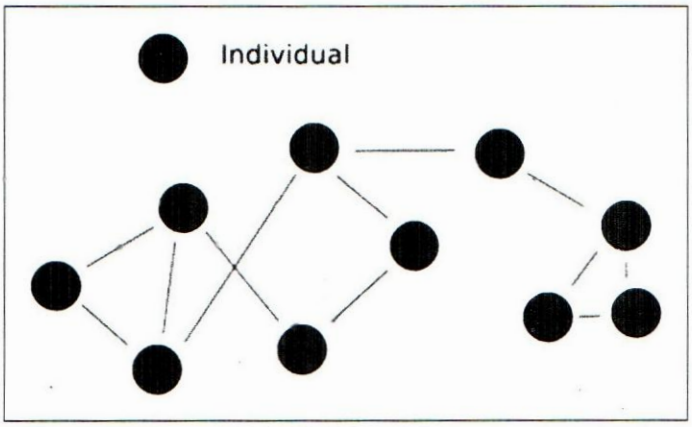

Figure 1. Social network of an activity

2.16 Diffusion and networks

The notion of classifying networks links on the basis of the degree to which they convey information began with Granovetter (1973) theory of "the strength of weak ties"; when the scholar sought to determine how people living in the Boston suburb of Newton got jobs. Some personal networks consist of a set of individuals who interact with each other (interlocking personal networks). In contract, radial personal networks consist of a set of individuals who do not interact with each other. Such radial personal networks are more open and thus allow the focal individual to exchange information with a wide environment. They are important particularly in the diffusion of innovation because their links reach out into the entire system, while interlocking networks are more closed (Rogers, 2003).

In the Mwingi case, most of the givers fall in interlocking network for they live far from rural areas and their interaction with other givers and receivers is rare. While the receivers mainly fall in radial network where they share some environment in the rural areas and also communicate with each other and other community members for the animals are used for hire during ploughing time.

2.17 Acquisition networks

Gulliver (1955) indicted that livestock exchange plays a role in acquisition(additions) of livestock to the herd and that the exchange is driven by social ties and networks of which Livestock or herding partnerships ("stock associates") are part of this network, and are established by birth and deliberate pledges between bond friends. Johnson (1999) suggests that for the Turkana, these social networks are dense that many friends are themselves friends with each other, and social relationships vary according to degrees of friendliness. People in active relationships share food, exchange livestock, and engage in mutual labour and leisure. According to Johnson (1999), the size of a herder's social network influences his herding success. Despite this general centrality of social relationships and their role in livestock acquisitions, the importance of socially induced livestock exchanges to herd growth has with few exceptions (Broch-Due, 1999) remained largely unrecognized and seldom quantified.

Livestock acquisitions through forms of exchange can entail the trading of livestock, daily food sharing, begging, or ceremonial food sharing at feasts, such as weddings. Johnson (1999), finds that Turkana differentiate food sharing from livestock exchange, with livestock exchange occurring much less frequently than food sharing. He also notes, however, that it is often difficult to differentiate the two (some level of friendship is common to both). The centrality of the balance between labour and livestock demography in nomadic pastoralism has long been recognized (Dyson-Hudson and Dyson-Hudson, 1980; Dyson-Hudson and McCabe, 1985; Fratkin, 1987; Fratkin and Smith, 1994; Leslie and Dyson-Hudson, 1999). Still, this interest has not motivated many studies on the population dynamics of pastoralist herds. Part of the reason for this neglect relates to the difficulty of obtaining herd demographic data. Like the Turkana,

many pastoralists believe that overt counting of someone else's livestock is impolite, may harm animals, or bring bad luck.

The stock friend's strategy is one of the forms of livestock exchange among the pastoralist. The strategy might have different importance in the agro- pastoralist in that animals can be for labour on land (animal power) and also for trade on the side of the giver. In the agro-pastoralist of Mwingi the livestock dynamics is not an issue for the tradition of not giving livestock numbers as faded away.

2.18 Conceptual framework

The conceptual framework Figure 2 was developed to demonstrate the associations/relationships between the independent variables (the community awareness of existence of stock exchanges; purpose of stock exchanges; type and numbers of the stock exchanges; frequency of the stock exchanges; the socioeconomic status of the givers; and the role of the stock exchanges), and dependent variable (poverty level of receivers), through the intervening variable, adoption of the stock exchange strategy.

As depicted in Figure 2, the associations/relationships are hypothesized to represent influences of the independent variables on the intervening variable and adoption of the stock exchange strategy, on the dependent variable, poverty levels.

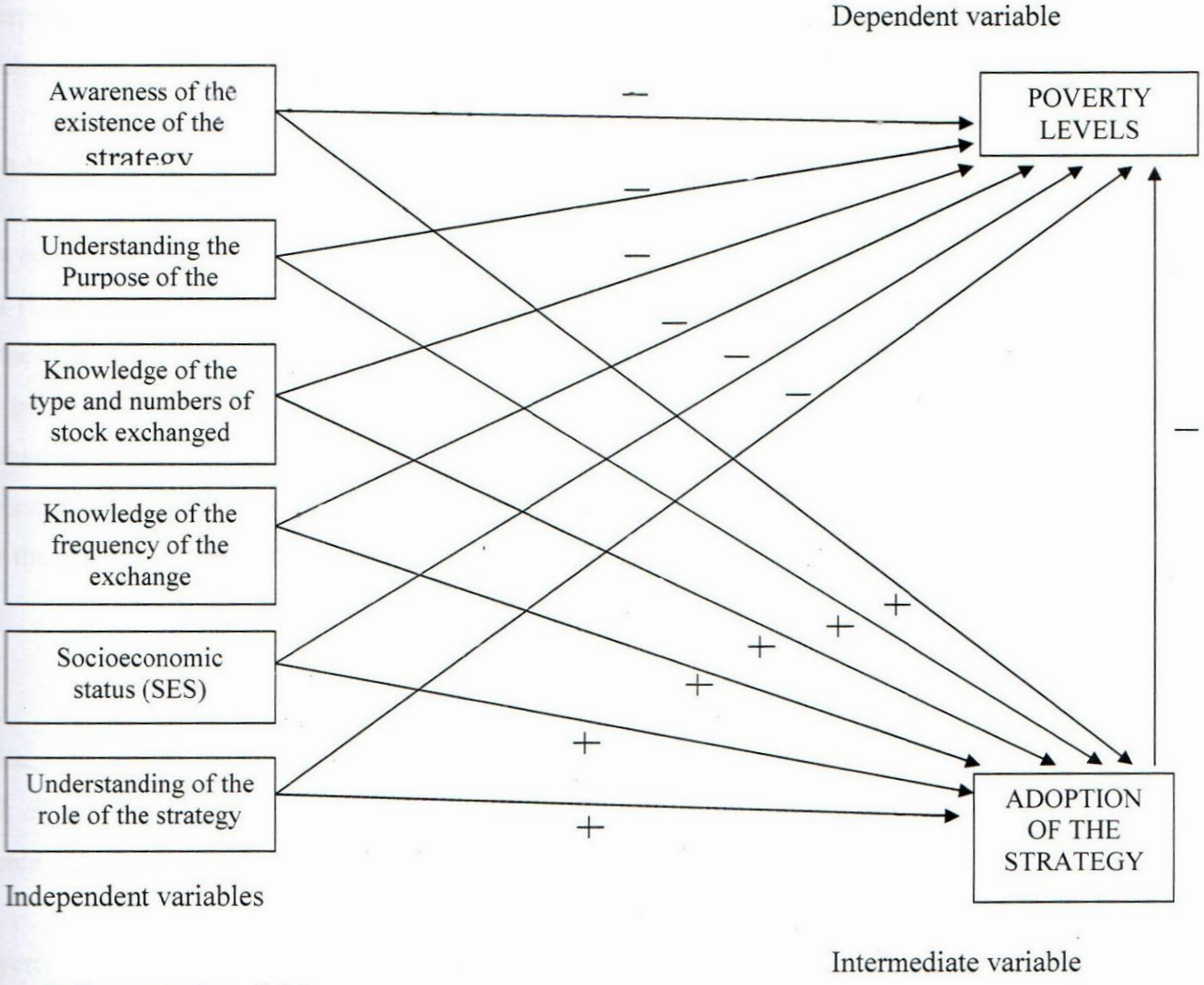

Figure 2. Conceptual model 1

In a nutshell, the above conceptual framework suggests that the seven variables in model influence the receiver's poverty levels.

2.19 Scope and limitation

Due to financial and time limitations the study was undertaken in four sub- locations of the Ngomeni Division covering 240 households and 15 key informants, although a wider scope

would have been preferred. Language barrier was another limitation needing the use of interpreters, which may contributed to slow progress of the project. The study, engaged a check mechanism to reduce to the minimal any misrepresentation of facts.

2.20 Definition and measurement of variables

The seven variables involved in this study, and as they appear in the objectives and hypotheses, are: (i) poverty levels of stock friends receivers (which is the dependent variable); (ii) adoption of the stock friends strategy; (iii) community awareness of the existence of stock exchanges; (iv) the purpose of stock exchange; (v) types (e.g. for breeding, milking, etc) and numbers of stock exchange; (vi) frequency of stock exchange; (vii) the socioeconomic status of the stock-friends givers; and (viii) the role of the stock exchanges.
For the purpose of this study, the variables are defined and measured as follow:

i) Poverty levels of receivers

These are levels that calibrate the degree of poverty in each household, assessed on the basis of lack of, or inadequate provision of basic needs, namely food, water, shelter, health care, energy source, education, and regular cash income.

Poverty levels were measured by determining the adequacy of provision of the basic needs to the household. Each basic need was scored on a Likert scale, from 0 to 5, with 5 scored if the response was very adequate; 4 if the response was adequate; 3 if the response was moderately adequate; 2 if the response was inadequate; 1 if the response was very inadequate; and 0 if the response was "basic need is lacking.

An index of poverty level was constructed by summing up the scores of all the seven basic needs, generating a range distribution of scores between 0 and 35 for the variable.

ii) Adoption of the stock friends strategy

Adoption involves the acceptance and use of an innovation by the individuals. The innovation is stock friend's strategy, which will measured by asking the respondents a question as to whether they themselves practice the exchange of livestock. The responses will be in YES and NO answers.

iii) Community awareness of existence of stock exchange

This is to be aware and be knowledgeable of the existence of stock exchanges on the part of the community, as an indication of the application of the stock friend's strategy as a traditional practice for poverty alleviation among the Ngomeni community.

The variable was measured through respondents' answers to a set of five questions assessing their awareness of the existence of stock exchange strategy amongst the community, their knowledge of the members of the community involved, and the processes involved. The five questions assessed the degree of awareness (i) of the actual existence of the strategy; (ii) of the receivers of the exchange; (iii) of the givers of the exchange; (iv) of the reasons of giving the stock; and (v) of the processes involved.

Each of the response to the questions was scored on a Likert scale, from 0 to 5, with 5 scored if the response was very high degree of awareness; 4 if the response was high degree of awareness; 3 if the response was moderate degree of awareness; 2 if the response was low degree of awareness; 1 if the response was very low degree of awareness; and 0 if the response was awareness is lacking.

An index of community awareness was constructed by summing up the scores of all the five indicators, generating a range distribution of scores between 0 and 25 for the variable.

iv) Purpose of stock exchange.

This is the intention and the purposes of the actual exchange of the stock, in regards to whether the exchange was intended to assist the receivers to alleviate poverty levels, and/or to provide subsistence for survival, and/or to establish bonds of relationships.

The variable was measured through responses to seven questions seeking the respondents' assessment of the truth about the aim of the exchange offered. That is, whether the purpose was to assist the receiver: (i) during emergency; (ii) during difficult times; (iii) in providing milking stock for subsistence; (iv) in providing breeding stock for improvement of receivers herd; (v) in breaking out of poverty; (vi) in risk aversion; and (vii) in establishment of relationship bonds.

Each of the response to the questions was scored on a Likert scale, from 0 to 4, with 4 scored if the response was very true; 3 if the response was true; 2 if the response was somewhat true; 1 if the response was not true; 0 if the response was I am not aware.

An index of the purpose of stock exchange variable was constructed by summing up the scores of all the seven indicators, generating a range distribution of scores between 0 and 28

v) Types and numbers of stock exchange

This variable is defined as the types (e.g. for breeding, milking, etc) and numbers that have been exchanged, to generate positive impacts on the receivers in poverty alleviation and attenuation of suffering.

The variable was measured through responses to five questions seeking the respondents' assessment of the truth about the types and numbers of stock exchanged. That is: (i) whether the exchanges were for milking stock; (ii) whether the milking stock were adequate in number to solve the receivers' poverty and related problems; (iii) whether the exchanges were for breeding; (iv) whether the breeding stock were adequate in numbers to assist the receivers improve their

own stock; and (v) whether the exchanges were helpful to the receiver in the alleviation of poverty and attenuation of suffering in general.

Each of the response to the questions was scored on a Likert scale, from 0 to 4, with 4 scored if the response was very true; 3 if the response was true; 2 if the response was somewhat true; 1 if the response was not true; 0 if the response was I do not know.

An index of the types and numbers of stock exchanged variable was constructed by summing up the scores of all the five indicators, generating a range distribution of scores between 0 and 20.

vi) Frequency of stock exchange

The frequency variable is defined in terms of how often the stock exchanges take place.

The variable was measured through responses to five questions seeking the respondents' assessment of the frequency of stock exchanged among the Ngomeni community, so as to be useful to the receiver in poverty alleviation and in providing subsistence and survival. The questions were to seek the respondents' assessment as to: (i) whether the exchanges were very frequent; (ii) whether the exchanges were just frequent; (iii) whether the exchanges were moderately frequent; (iv) whether the exchanges were less frequent; and (v) whether the exchanges were not frequent.

Each of the response to the questions was scored on a Likert scale, from 0 to 4, with 4 scored if the response was very frequent; 3 if the response was frequent; 2 if the response was moderately frequent; 1 if the response was less frequent; and 0 if the response was not frequent.

An index of the frequency of stock exchange variable was constructed by summing up the scores of all the five indicators, generating a range distribution of scores between 0 and 20.

vii) Socioeconomic status of givers

This is the status of individual givers of stock exchange among Ngomeni community, reflective of their economic and socio-political performance and power.

The variable was constituted by five indicators, namely (i) the educational level; (ii) cash income; (iii) total livestock numbers; (iv) farm assets/structures possessed; and (v) community role played. The indicators were individually measured and categorized into a five- point Likert scale, as follow:

Educational levels included: University; College/technical training; Secondary school; Primary school; Pre-primary; and No education. These was scored on a Likert scale, ranging between 5 to 0, with 5 scored if the level was university, 4 college/technical trained, 3 secondary school, 2 primary school, 1 pre-primary, and 0 "no formal education".

Cash income was grouped into five quintiles from its frequency distribution, and the individual incomes were categorized and scored on a Likert scale, ranging between 5 and 0. Five was scored if the individual income was in the highest quintile group, 4 if the individual income was in the second highest quintile group, 3 if the individual income was in the third highest quintile group, 2 if the individual income was in the fourth highest quintile group, 1 if the individual income was in the lowest quintile group, and 0 if there was no income for the individual.

The total livestock numbers was computed into livestock units (LU) by multiplying them with coefficients, as follow: cattle=1 LU; sheep=0.2 LU; goats=0.2 LU; donkeys=0.3 LU; and camel=1.2 LU. The total livestock units was then grouped into five quintiles from the frequency distribution, and the individual respondents' numbers were categorized and scored on a Likert scale, ranging between 5 and 0. Five was scored if the individual's livestock units were in the highest quintile group, 4 if the individual's livestock units was in the second highest quintile group, 3 if the individual's livestock units was in the third highest quintile group, 2 if the individual's livestock units was in the fourth highest quintile group, 1 if the individual's livestock units was in the lowest quintile group, and 0 if there the individual had no livestock.

For farm assets/structures, a list of 16 items was presented to the respondents to indicate the number of items in their possession. The number of item for each respondent were categorized and scored on a Likert scale, ranging between 5 and 0. Five was scored if the number of items were 13 and more; four if the number of items were between 10 and 12; three if the number of items were between 7 and 9, two if the number of items were between 6 and 4, one if the number of items were between 3 and 1, and zero if the respondent had no livestock.

For community role, a list of roles was presented to the respondents to indicate and rank them in order of degree of respect they command from the community. These roles include: Member of Parliament; County Councillor; government leader; traditional leader; opinion leader; group leader and religious leader.

From the ranked list of the roles, individual response on community role was categorized and scored on a Likert scale, ranging between 5 and 0. Five was scored for the most respected role; four was scored for the second most respected role; three was scored for the third most respected role; two was scored for the fourth most respected role; one was scored for the fifth most respected role; and zero for any other role.

An index of the givers' socioeconomic status variable was constructed by summing up the scores of all the above five indicators, generating a range distribution of scores between 0 and 25.

viii) Role of stock exchanges

This variable is defined as perceived benefits derived from the practice of stock exchange, in alleviation of poverty for the receivers, risk aversion, provision of immediate subsistence, and provision of long-term benefits.

The variable was measured through responses to six questions seeking the respondents' assessment of the degree of truth about the role of the stock exchanges. That is, whether the stock exchange provided for: (i) payment of land ploughing labour; (ii) school fees payment; (iii)

income generation; (iv) slaughter for home use; (v) provision of products and by products, such as milk, manure and others; and (vi) payment of bride price and initiation ceremonies.

Each of the response to the questions was scored on a Likert scale, ranging from 0 to 4, with four scored if the response was very true; three if the response was true; two if the response was somewhat true; one if the response was not true; and zero if the response was I do not know.

An index of the role of stock exchange variable was constructed by summing up the scores of all the six indicators, generating a range distribution of scores between 0 and 24.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter discusses the research methodology, including the study area and population, the research design; sampling procedures, measurement of variables, sample size, data collection, and processing and analyses procedures.

3.1 Geographical location of the study area

The study was conducted in Ngomeni Division, which is one of the nine Divisions of Mwingi District in Eastern Province of Kenya. The District lies between latitude 0° 0' and 1° 12' south and longitude 37° 47' and 38° 57' degrees east, and has an area of 10,030.30 km^2 (GOK, 2002).

As indicated in the map of the study area, Figure 4, Ngomeni Division is comprised of two Locations, namely Mitamisyi and Ngomeni locations (with each of the two locations having four sub-Locations). Ngomeni Division borders Nguni Division to the south, Kyuso Division to the west, Tseikuru Division to the north, and Tana River District to the east.

Currently, Mwingi District is being split to establish a new district, to be named "Kyuso District", and comprising of Mumoni, Kyuso, Tseikuru, and Ngomeni divisions.

3.1.1 Topography

Topographically Ngomeni Division is generally plain with a few sandy rocky hills. The landscape is generally flat, with a plain that gently rolls down towards the east where altitudes are as low as 400m. Topography of the Division affects communication within the Division and with other Divisions. Ngomeni experience severe droughts, which has led to livestock deaths, food shortages and poverty. The Division has red sandy soils of moderate to sometimes-low fertility and prone to erosion.

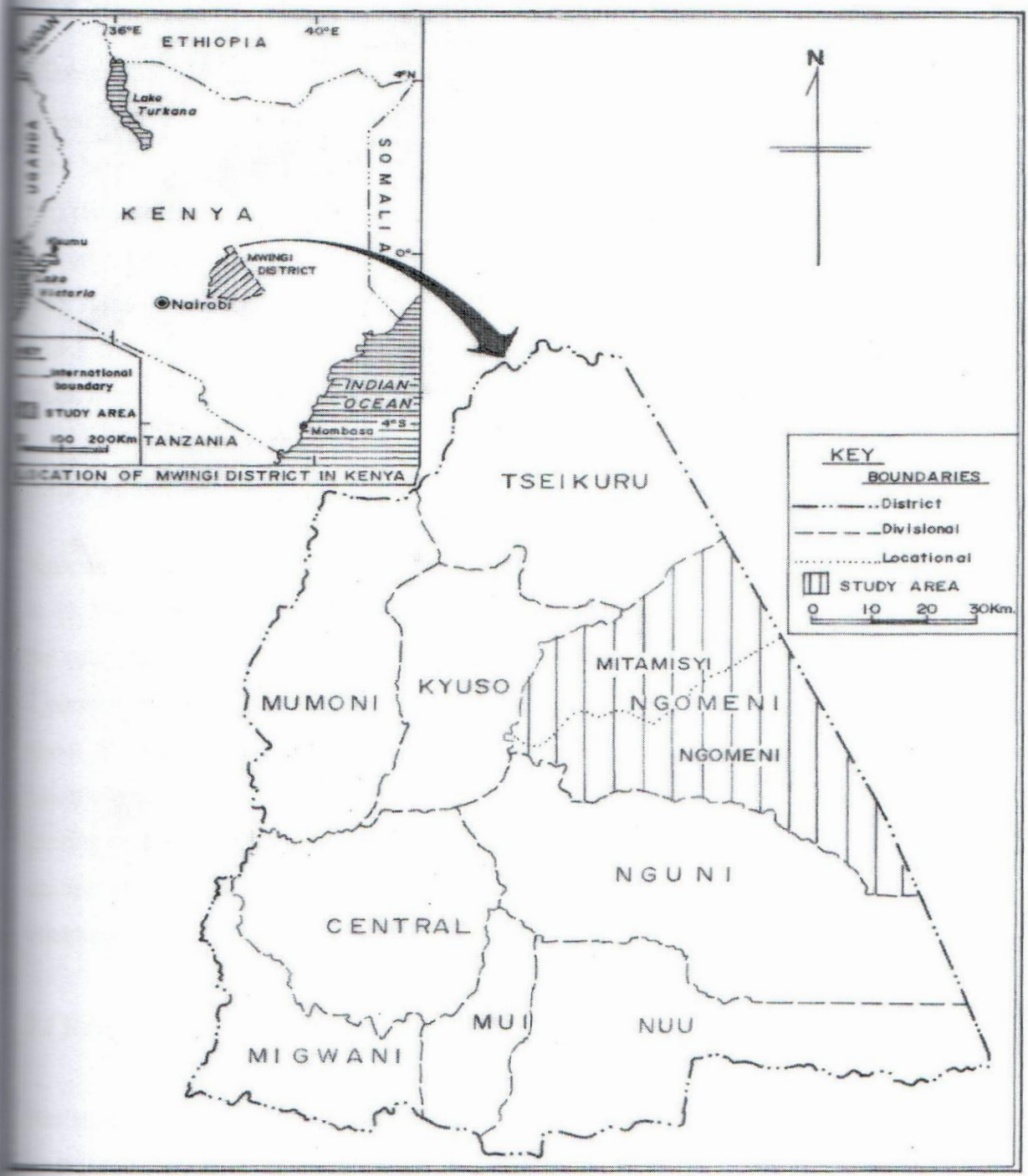

Figure 3. Location of Ngomeni Division in Mwingi District
Source. (GOK, 2002)

3.1.2 Climate

Climate of the Division is hot and dry for the larger part of the year. The maximum mean annual temperature ranges between 26^0 C and 34^0 C. while the minimum mean annual temperatures vary between 14^0 C and 22^0 C. with an average annual temperature is 24^0 C. The Division has two rainy seasons; March-May (long rains) and October- December (short rains). Rainfall ranges between 400 mm and 800 mm per year, but is erratic. The short rains are more reliable than the long rains (GOK, 2002). This rainfall pattern is characteristic of arid and semi-arid climate, in which livestock rearing is a dominant occupation of the agro-pastoral communities, and where stock friend strategy is instrumental to poverty mitigation.

3.1.3 Population

Ngomeni Division has the least population in the district of 10,712 and was projected to increase to 13,294 by the year 2008. The low population can be attributed to low and unreliable rainfall for cultivation. Ngomeni Division is predominately a livestock zone with a population density of 7 persons per Km^2. (GOK, 2002). It is on the eastern pastoral grazing zone of the District, and about 60 kms from Mwingi town. It has two Locations, namely, Ngomeni and Mitamisyi Locations and eight sub-Locations. Ngomeni was selected for the study because of its vast grazing area for livestock due to low rainfall and therefore low human population. Thus the main occupation is livestock keeping (GOK, 2002), as practised by the local agro-pastoral communities.

3.2 Research design

The study utilised a socio-ecological survey using a structured questionnaire, and supported by Key Informant interview and observation (ocular) methods. The research also made use of secondary data from University libraries, public offices and other relevant sources.

3.3 Sampling procedure

The study Population was comprised by 2,165 households in Ngomeni Division, while the Sampling Frame, from which the study sample was picked, was constituted by all the households keeping cattle in four sub-locations randomly selected from the two locations (Mitamisyi and Ngomeni) of the Division. The unit of analysis was the household and the subject of analysis (the respondent) was the head of the household or his /her representative.

The four sub-locations were randomly selected, using numbers. In each of the selected sub-location, a list of the households that raise livestock was compiled, and systematic sampling was used to pick large numbers of households (actually about 120 households) from each sub-location. Then random sampling was undertaken among the systematically selected households in each sub-location, to constitute a study sample of 240 households, with 60 households randomly selected from each of the four sub-locations.

Two formulae, Mugenda and Mugenda (1999) and Kathuri and Pals (1993), were used for computing the study sample size, but yielded rather large sample sizes that could not be sustained by the available resources for the study. Hence resorting to the provisions of the Statistical Package for the Social Sciences (SPSS) programme, which suggest that any sample size of 200 and above will allow perfect functioning of all the analytical procedures provided by the programme.

3.4 Type of data collected and collection methods

A standard, structured questionnaire with open and closed-ended questions that addressed the objectives of the study was used to collect primary data from the respondents. It was administered in the form of an interview schedule since some of the agro-pastoralists were illiterate. In way of pretesting it, the principal researcher administered the questionnaire to selected households and confirmed it reliability and validity.

Collection of the primary data was undertaken after involving and procuring support from Government's administrative officials, relevant Government Ministries including Ministry of Livestock and Fisheries Development, Ministry of Agriculture, the County Council of Mwingi, and also after acquiring logistics including transport, research permit and secretarial facilities.

Secondary data was collected throughout the period of the study, on relevant issues addressed by the study objectives, including: socio-economic details of the respondents, their socio-cultural orientations, and their livelihoods and livestock related information. Important information on household poverty in relation to the stock friend's strategy was adequately covered.

Secondary data was collected from a number of institutions including University libraries, the International Centre of Insect Ecology and Physiology (ICIPE), private libraries, the Government of Kenya Ministries and Departments in Nairobi and Mwingi, besides the website Internet sources.

To complement and triangulate the information and findings from the survey data, information from selected key informants was used. The interviews were guided by an interview schedule, which entailed structured, open questions answering to the objectives of the study. The key informants included, Councillors of the area, Chiefs, sub-Chiefs, community elders, and relevant Government and Non- Government officials.

An ocular method was used to observe the status of poverty at household level and other relevant variables.

3.5 Data management and analysis.

The data from both primary and secondary sources was processed and analysed. The filled questionnaires were first edited, for the purpose of checking for completeness, clarity, and consistency in the responses. In the few events of inconsistency, the affected respondents were re-visited for clarification.

Coding of the open and closed-ended questions and construction of a codebook for entering the data into the Statistical Package for the Social Sciences (SPSS) computer software then followed.

Both descriptive and analytical (relationship testing) procedures were used in data analysis. Descriptive analysis involved measures of central tendency for respondent's personal particulars, the features of the study area, the respondents' socio-economic and demographic data, and the variables in the study objectives. Analytical procedures (regression and correlation) were used to test the relationships between the respondents' personal particulars and the variables in the study objectives, namely (the community awareness of existence of stock exchanges, purpose of stock exchanges, type and numbers of the stock exchanges, frequency of the stock exchanges, the socio-economic status of the giver, and the role of the stock exchanges) and poverty alleviation (dependent) variable. The regression analyses were also used to test the hypotheses of the study. Both bivariate and multiple regression analyses were run to determine the effects of independent variable to the dependent variable. The multiple regression model tested was based on the following equation : $Y_{ijk} = b_o + b_i f_i + b_i t_i + b_i s_i + b_i a_{I+} b_i r_{i+} b_i w_{i+} b_i p_i e_{ijk}$

Where Y_{ijk} is poverty level at household index,

b_o is a constant (y-intercept),

b_i is the coefficients of each independent variable,

f_i, t_i, s_i, a_i r_i w_i, p_i, were the independent variable and

e_{ijk} is the random error term.

The regression model was used to test the relationships between the various independent variables and the dependent variable (poverty levels at household) through use of regression coefficients and the coefficient of determination (r^2) value, at $P < 0.05$ significant level.

The study undertook an extensive literature review of other pastoralists' and agro-pastoralists' cultures that contribute to poverty, and its alleviation through stock friends strategy as a traditional coping method.

This study is expected to suggest ways for the development and enhancement of the stock friend's strategy for promoting social cultural networking to assist in mitigating poverty and its effects among communities in the study area, through workshops for all communities in all parts of the Mwingi District, starting with those in the study area

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents the findings and their respective discussions. These are in three sections: *Section 4.1* presents the respondents' characteristics and land use systems that have some influence on adoption or non-adoption of stock friends concept and so the poverty status of the Ngomeni agro-pastoralists. These include: Respondents' distribution by locations and sub-location; Respondents' gender; Marital status; Respondents' occupation; Respondents' income; Educational levels; Household sizes; Land sizes; Livestock ownership; Provision of basic needs; Traditional perception of poverty by community; and Community's assessment of their own poverty levels.

Section 4.2 presents data on community involvement in stock friend concept, and discusses the trends in stock exchange strategy in Ngomeni Division, including: Types of community involvement in stock exchange activities; Trends in the stock exchange practice; Reasons for the increasing trend in stock exchange; and the Adequacy of type and numbers of livestock exchanged.

Section 4.3 addresses the eight specific objectives of the study which are accomplished through discussion of respective selected indicators. Thus, Objective 1 examines the community's awareness of the existence of the strategy amongst them; Objective 2 examines the community's understanding of the purpose of stock exchange strategy; Objective 3 examines the community's knowledge of the types (e.g. for breeding, milking, etc) and numbers of the livestock exchanged; Objective 4 examines the community's knowledge of the frequency of the exchange; Objective 5 assesses the socioeconomic status of the participants (both the giver and the receiver of the exchange); Objective 6 examines the role and utility of the stock friends strategy among Ngomeni community; Objective 7 examines the relationships between community awareness and knowledge about the strategy, their socioeconomic statuses in influencing adoption of the

strategy, and the consequent influence on the poverty levels; and Objective 8 examines the potentiality of stock exchange strategy to be made more adoptable and useful to the Ngomeni communities so as enhance poverty alleviation.

Finally, *Section 4.4* will present the results of each of the seven study hypotheses, tested and concluded. These relate to relationships and influences between: (1) community awareness of existence of stock exchange strategy and their adoption of the strategy, and so their poverty levels; (2) community's understanding of the purpose of stock exchange strategy and their adoption of the strategy, and so poverty levels; (3) community's knowledge of types (e.g. for breeding, milking, etc) and numbers of stock exchange involved in the strategy and their adoption of the strategy, and so poverty levels; (4) community's knowledge of frequency of stock exchanged and their adoption of the strategy, and so poverty levels; (5) the socioeconomic statuses of the givers of the exchange and their adoption of the strategy, and so poverty levels of the receivers; (6) community's understanding of the role of stock exchange strategy and their adoption of the strategy, and so poverty levels; and (7) the six independent variables, as depicted in the conceptual model (Figure 2), and adoption of the strategy, and so poverty levels of receivers.

Section 4.1: respondents' characteristics and land use systems

4.1.1. Respondents distribution by locations and sub-location

The study population is distributed in Ngomeni division of Mwingi District. The Division has two locations, namely, Ngomeni and Mitamisyi, and eight sub-locations, four in Ngomeni (Kavuti, Kalwa, Kabauni and Ikime), and the other four in Mitamisyi (Ndatani, Mitamisyi, Kamusiliu and kimera).

The study covered four sub-locations of Ngomeni Division, namely Kavuti and Kalwa sub-locations (of Ngomeni location), and Mitamisyi and Ndatani sub-locations (of Mitamisyi location). With 7 out of the 240 sampled questionnaires spoiled, the remaining questionnaires were distributed as follows: Kavuti 59, Ndatani 59, Mitamisyi 58, and Kalwa 57, totalling to a study sample of 233 respondent households. This provided a fair representation of the communities involved in the study.

As indicated in Table 2, the 233 respondents are spread in the four sub-locations of Ngomeni Division.

Table 2. Distribution of respondents

Division	Location	Sub-location	Frequency	Percent
Ngomeni	Ngomeni	Kavuti	59	25.3
		Kalwa	57	24.5
	Mitamisyi	mitamisyi	58	24.9
		Ndatani	59	25.3

4.1.2. Respondents' gender

There were 127 males interviewed representing 54.5% of the respondents, while females were 106, representing 45.5 % of the total respondents. Both genders were well represented at least over 30% in each case. Thus the data collected was a representation of the opinion of all gender in the sampled area. This gives right information on stock friends and its roles in the sample area in that gender biasness was minimised. In this community which is relatively male dominated (54.5%), property ownership through stock friend's concept can help to minimise poverty in the households.

Table 3. Respondents' gender

Gender	Frequency	Percent
Male	127	54.5
Female	106	45.5

4.1.3. Marital status

Most of the respondents (82%) were married while (6.9%) were single, 6.0% widowed, 3.4% divorced and 2.1% separated respectively (Table 4) This helps to illustrate that households of different marital status were sampled thus opinions of the respondents under different marital status was taken into consideration in the research thus stock friend's concept was investigated in households of different marital status and that poverty cuts across marital status.

Table 4. Marital status of head of household

Status	Frequency	Percent
Married	190	81.5
Single	16	6.9
Divorced	8	3.4
Widowed	14	6.0
Separated	5	2.1

4.1.4. Respondents' occupation

Table 5 below indicates the various occupations of the respondents in Ngomeni Division, apart from livestock keeping, which is the primary occupation of all the surveyed population. The secondary occupations were: mixed farming (72.5%), crop farming (15.5%), business (5.6%), and wage employment (4.3%). A small fraction of the respondents are unemployed retirees (2%). The importance of stock friendship was emphasised in that 88% of the occupation in the area is farming which is assisted by stock friendship. Occupation of head of household has a relation with poverty level of the household in that it gives one of the ways where the household gets income.

Table 5. Respondents' occupation

Respondents	Frequency	Percent
Crop farmer	36	15.5
Mixed farmer	169	72.5
Business	13	5.6
Wage employee	10	4.3
Unemployed	5	2.1

4.1.5 Respondents' income

Six sources of income were reported by the Ngomeni community, including income from: crop sales, livestock sales, sale of livestock products, other farm product, wage employment, and remittances. Table 6 below indicates the minimum, the maximum and the average incomes in Kenya Shillings from each source.

The livestock sales, sale of livestock products, sale of other farm products and crop sales combined are high than wage employment and remittance combined, thus stock friends concept can contribute increase of the former incomes than to the latter. Thus stock friend's concept and livestock exchange in general plays a great role in the local economy of the community than employment or the income from remittances.

Table 6. Respondents' Income

Income source	Minimum (kshs)	Maximum (kshs)	Average (kshs)
Crop sales	0	76,000	6,399
Livestock sales	0	150,000	10,630
Sale of Livestock products	0	18,000	752
Sale of other farm products	0	25,000	765
Wage employment	0	120,000	4,094
Remittances	0	20,000	748

4.1.6 Educational levels

The majority of the Ngomeni agro-pastoralists are lowly educated, with only 17.9% of them having secondary school education and above. A large majority (82.1%) are of primary school education and lower levels, with 31.8% of them having no formal education. The respondents had basic primary education and above thus verbal communication and data collection in their households was enhanced during research and also the results indicated that stock friends was practice by both the educated and none educated.

Table 7. Education level of head of household

Level	Frequency	Percent
University	1	.3
college/tech/training	9	3.9
secondary school	32	13.7
primary school	115	49.4
pre- primary school	2	.9
no formal education	74	31.8

4.1.7. Household sizes

The respondents were asked to indicate how many persons resided in their households. The mean number of household members was computed to be 6. Thus the mean family size of the Ngomeni households was found to be 6, ranging from smallest family size of 2 members to the largest family size of 18. The household sizes indicated the resource use at the household level where the bigger the household the greater the need of basic needs such as food, water and sanitation, energy, and education. With a household size of six, thus two parents and four children, the expectation was that the families were well off, although this was not the case (ocular deductions), due to other factors which affects their livelihood such as stock friends which could have helped to increase ploughing of land for food production, or get water, firewood for the household which could reduce poverty. Table 8 presents the frequency distribution of the household sizes.

Table 8. Number of people in the household

Size	Frequency	Percent
2.00	11	4.7
3.00	21	9.0
4.00	47	20.2
5.00	42	18.0
6.00	33	14.2
7.00	26	11.2
8.00	21	9.0
9.00	11	4.7
10.00	8	3.4
11.00	5	2.1
12.00	3	1.3
13.00	2	.9
15.00	2	.9
18.00	1	.4

The family sizes in the above frequency distribution were then categorized into three groups: small size households (2-5 persons), medium size households (5-7 persons), and large size households (more than 10 persons).

4.1.8 Land Size

The land sizes ranged from less than 1 to 100 acres, with an average of 9.4 acres per household, and a frequency distribution as indicated in Table 9.

Table 9. Respondents' land sizes

Land size (acres)	Frequency	Percent
<1– 5.0	118	48.9
6.0 – 10.0	74	31.7
11.0 – 16.0	16	6.8
17.0 – 35.0	24	10.4
35 – 100	5	2.2

The agro-pastoralists of Ngomeni are thus small-holder farmers, with a large majority (80.6%) of them holding 10 acres of land or less, while nearly half of then (48.9%) having only 5 acres or less. Land size distribution was important resource investigated in that the receivers needed land for grazing the exchanged livestock. For one of the conditions the givers checked before entering in stock friendship was the availability of grazing land from the receiver as reported by the Key Informants. Land was a prerequisite in crop production which encouraged stock friendship so that the exchange animals could be used in ploughing.

4.1.9 Livestock ownership per household

The livestock reported held by the community in Ngomeni included cattle, goats, sheep and donkeys. Being agro-pastoralists, livestock possession was used to determine their wealth statuses reflecting on poverty levels.

The following poverty categories were agreed upon by key informants: The households with no animal at all was considered as being very poor; those with between 1 and 6 animals as poor; those with 6 to 10 animals as moderately poor; those with 11 to 20 animals as rich; and those with more than 21 animals as very rich. Based on this categorization the household's wealth status was ranked as indicated in Table 10 This was an illustration that the people who have livestock in good numbers are relatively well up compared with those who has less, thus if these livestock could be passed to the less well up in the community, poverty levels could be checked

Table 10. Livestock ownership

Livestock Owned	Poverty Category	Frequency	Percent
0	Very Poor	23	9.9
1 – 5	Poor	54	23.2
6 – 10	Moderately Poor	71	30.5
11 – 20	Rich	38	16.3
21 and more	Very Rich	47	20.1

4.1.10 Provision of basic needs

The seven items of basic needs under investigation varies from moderately adequate to very inadequate thus the community luck the essential basic needs which indicates the community's poverty status as indicated in the table 11. Unlike the cash income which is not common/ not regarded as main basic need /therefore not used, for many of the respondents are not employed. The adoption of livestock exchange had effects on all the basic needs for it had taken the status of cash in the economy.

Table 11. Adequacy of basic needs

Commodity	V.A	ADEQ	M.A	INADEQ	VERY INADEQ
Food	6.4	12.4	49.4	28.8	3.0
Shelter	5,6	28.8	30.9	33.0	1.7
Health care	3.9	11.2	57.9	24.9	2.1
Clean water	2.6	6.9	51.1	34.8	4.6
Education	1.7	5.2	47.2	40.8	5.1
Energy source	2.1	20.2	24	40.3	13.4
Cash income	5.2	5.2	28.3	51.5	9.8

Key. V.A=Very adequate; ADEQ=Adequate; M.A=Moderately adequate;
INADEQ=Inadequate; VERY INADEQ=Very inadequate

4.1.11. Traditional perception of poverty by community

As perceived by the community, poverty is traditionally indicated by the number of livestock held, land size, number and quality of buildings, clothing and dressing, number of wives/family size, and educational standard. As indicated in Table 12 and figure 5, the number of livestock and size of land are the major determinants of poverty among the Ngomeni agro-pastoralists. Thus stock friend's concept which is an exchange / loan of livestock is fundamental in the community because of the status livestock ownership is placed by this community in poverty alleviation

Table 12. Criteria used by the community to identify a poor person

Criteria	Frequency	Percent
Number of livestock	177	76.0
Size of land	34	14.6
Buildings	3	1.3
Clothing/dressing	13	5.6
Number of wives	1	.4
Education standard	5	2.1

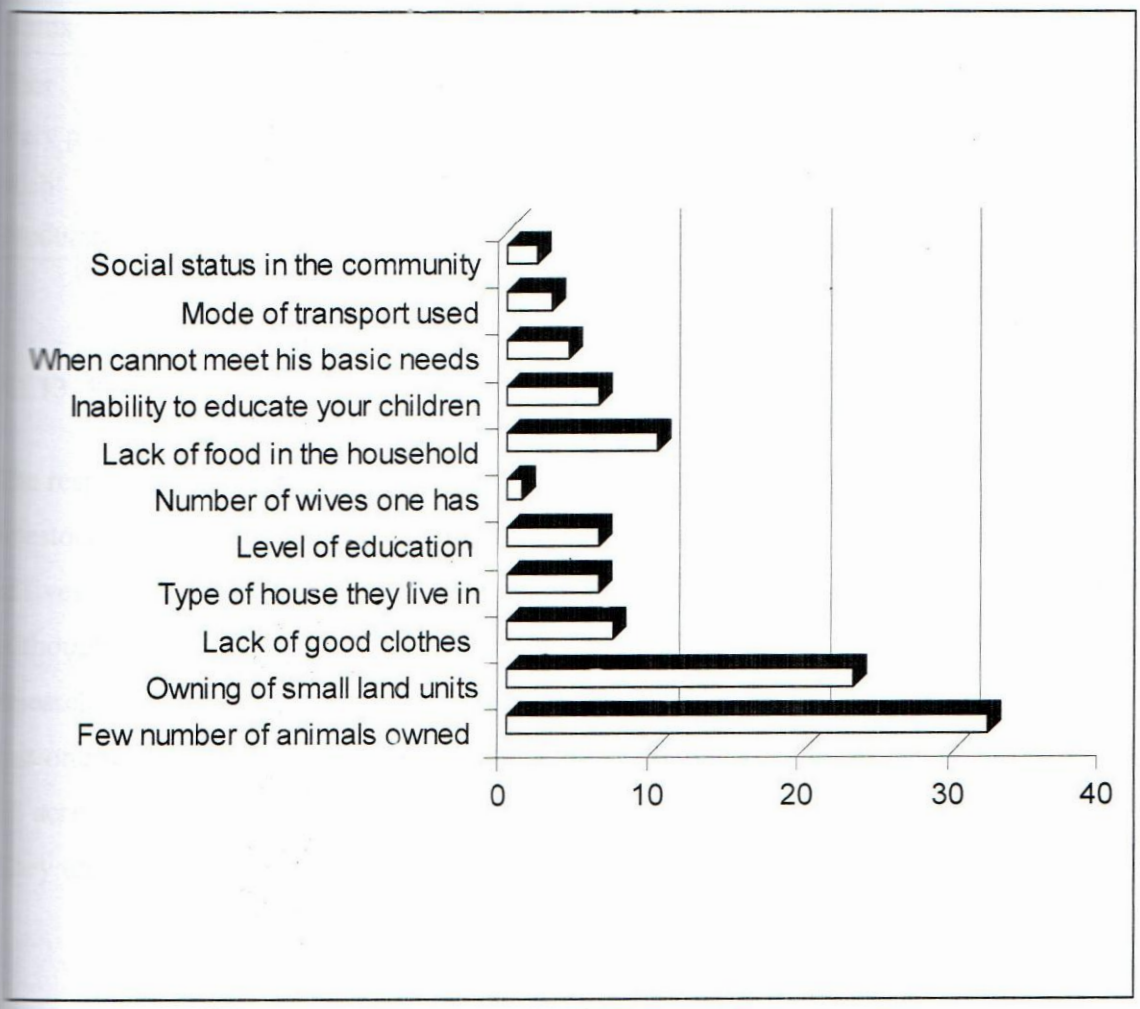

Figure 4. Perception of poverty indicators by the community

4.1.12. Community's assessment of their own poverty levels

Based on the traditional criteria of poverty measures, 48.5% of Ngomeni community believe that they are in the poor to very poor bracket, while 47.6% believe that they are at moderate level, and only 3.9% feel that they are rich.

Under such circumstances, the community qualifies for the study, since both the well to do people and the poor are available to indulge in stock friend relationships. The rich are mainly the givers and moderate ones are givers and receivers while the poor to very poor are the receivers table 13 indicates.

Table 13. Community's assessment of poverty levels (using the traditional criteria)

Status	Frequency	Percent
Poor	89	38.2
Very poor	24	10.3
Rich	9	3.9
Moderate	111	47.6

4.1.13. Summary of respondents' characteristics and land use systems

The respondents in this study were both male and female of all types of marital statuses who kept livestock and practised other farming activities. Their main livelihood (income) came from sale of livestock and farm produce thus they are agro-pastoralists of Ngomeni in Mwingi district. Although they were of low educational level (mainly primary school), communication during research was okay by use of Kiswahili or English. The family size were at 6 members which was just one person above the national average of 5 and also worked on their agro-pastoral land of 10 acres on average. Mostly they rear cattle and goats and use donkeys for transport of goods. They term themselves as being rich/ poor as per the number of livestock and land they own.

4.2. Community involvement and trend in stock exchange strategy

4.2.1. Type of involvement in stock exchange activities

Majority of the respondents (65.3%) reported as having been involved in livestock exchange strategy either as a giver (18%), or a receiver (45.9%) or both a giver and receiver (1.3%), as indicated in Table14.

Table 14. Type of involvement in stock exchange

Status	Frequency	Percent
Giver	42	18.0
Receiver	107	45.9
Both	3	1.3
None	81	34.8

The ratio between the givers and receivers seems to be corresponding with the ratio between the well off and poor members of the community. Thus the receivers of the stock exchange are more than the givers given the sizes of the two groups. (63.9%) of the Ngomeni community interviewed practiced stock friendship thus the concept is important in the area of study as poverty alleviation tool. One person could be a giver to many receivers. A small percentage of 1.3% had graduated from purely receivers and became both receiver and giver. These were the initially poor who after practicing stock friendship had gained some wealth and thus started to give livestock to others while still having livestock from richer members of the community.

4.2.2. Trends in stock exchange practice

As indicated in Table 15, a larger proportion (40.3%) of Ngomeni community felt that the stock exchange strategy is in fact on the increase, while a smaller proportion (17.6 %) believes that it is on the decrease. A significant proportion (18.5%) thinks that the strategy is unchanging, while another significant proportion (20.2%) does not know the trend.

Larger proportion thought the practice was increasing (40.3%) due to the fact that people understood it as a break through practice from poverty where the receivers after practicing for a while buy their own stock and turn to be become givers. For the givers, it was a business where they sold mature animals and replaced them with young stock as a replacement to the receiver as indicated by the Key Informants. The demand of animals for land ploughing, fetching water, getting/selling milk, manure, and local transport contributed to increase.

Table 15. Trend in stock exchange practice

Status	Frequency	Percent
Increasing	94	40.3
Decreasing	41	17.6
Unchanging	43	18.5
don't know	55	23.6

4.2.3. Reasons for increasing trend in stock exchange

As shown in Table 16, the majority (58.8%) of the community did not know why the stock exchange strategy was on the increase. Of the 41.2% who knew the reason for the increase, the majority (15.1%) of them said it was because of increasing population growth and so poverty, and also attracting labour force through the stock exchanges. The increase was also seen by 9.0% of the respondents to be for risk aversion and coping with drought. And 6.4% of the respondents believe that the increase in stock exchange strategy is because of the community's awareness of the concept and so use it. The above indicates that apart from the reasons researched on, other factors contributing to increase are evident though not researched.

Table 16. Reasons for the increasing trend

Status	Frequency	Percent
Many people aware	15	6.4
Many people involved	7	3.0
Many ceremonies taking place/cultural	8	3.4
Receivers still need animals	9	3.9
Population increase, and attracting labour	35	15.1
Risk aversion/drought	21	9.0
Cooperation between giver and receivers	1	.4
Don't know why	137	58.8

4.2.4. Reasons for decreasing trend in stock exchange

The 20.2% of respondents as in table 17, who knew the reasons for the decrease in the stock exchange strategies offered varying explanations, including the fact that stock exchange had in the past assisted receivers to buy and own livestock, and that there is no more need for further exchange (6.4%), that many members of community are not very aware of the strategy (5.6%), that the givers are only a few (5.6%), and that many people are not involved in the strategy, and that there are few traditional ceremonies taking place to influence the giving of the stock. As per the Key informants the decrease was due to the thinking that the strategy was old fashioned and had outlived its usefulness among the Ngomeni community, and that the strategy seemed to be neglected, and thus fading away ,this explains why 79.8% of the respondents indicated that they did not know why the trend is decreasing.

Table 17. Reasons for the decreasing trend

Reasons	Frequency	Percent
people not aware	13	5.6
people not involved	3	1.3
givers are only few	13	5.6
few ceremonies	3	1.3
already assisted receivers to buy and own stock, so no more need	15	6.4
Don't know why	186	79.8

4.2.5. Summary of respondents' characteristics and stock exchange trends

In Ngomeni community majority of the respondents indicated that (65%) of them were involved in livestock exchange either as giver (18%) or receiver (45.9%) or both (1.3%).This was an indication that a small percentage of (1.3%) were changing from being receivers to givers. it was an indication of change of social and economic status from being poor to being rich in a community which value livestock as a indicator of wealth. The trend of exchange was increasing due to understanding of the practice as a business to the givers and a stepping stone for the receivers to be well off. The few who indicated that the trend was decreasing had a reason

that the strategy was old fashioned and had outlived its usefulness and seemed be neglected and thus fading away.

4.3. Study's specific objectives

Specifically, the study concentrated in assessing:

Study Objective 1: The community's awareness of the existence of the stock friend strategy amongst them.

4.3.1. Respondents' awareness of the stock friend strategy

Ngomeni respondent agro-pastoralists were asked to indicate their awareness of the stock friend concept and strategy, and a very large majority (91.8%) responded to the affirmative.

Asked how common the strategy was among the Ngomeni community, 57.5% of them thought that it was common to very common, while 42.5% said it was rare to very rare. Tables 18 and 19 are for the frequency distributions. The clear indication was that majority of the respondent were aware though the practice was not adopted by all who were aware. Probably awareness alone may not have trigged adoption of the strategy. Other factors needed investigation. The stock exchange was common to very common in the two out of four sub-locations of the division Kalwa and Ndatani while Kavuti and Mitamisyi was rare. This was due to proximity of the sub-locations to the town (market) where the main work was retail business. The givers normally disposed the older animals at these markets and bought others to take to the receivers for replacement. Therefore the strategy is known as business venture in these locations than in the other locations which are far from the main markets. This was against the expectation that the strategy could be common in far away locations than in locations near markets centres due non interference in their cultural practices, but it seemed that the practice had changed from cultural to economic.

Table 18. Respondents' awareness of stock friends concept and strategy among Ngomeni community

Awareness	Frequency	Percent
Yes	214	91.8
No	19	8.2

Table 19. Respondents' awareness of how common the strategy was in Ngomeni

Awareness	Frequency	Percent
Very common	31	13.3
Common	103	44.2
Rare	78	33.5
Very rare	21	9.0

4.3.2. Degree of awareness of some aspects of the exchange strategy

The respondents were asked to assess the degree of their awareness of various aspects in the stock exchange strategy, as listed in Table 20.

The highest degree of awareness was of the procedures and processes involved in the stock exchange (88%), followed by the awareness of the receivers of the stock (74.2%) and the existence of the stock exchange strategy (64.3%), since the respondents assessed the three aspects as of very high, high and moderately high degrees. The respondents were aware on various aspects in the stock exchange strategy (stock friends) although the degree of practice (adoption of the practice) seemed lower than the degree of awareness. Thus awareness of the strategy alone may not had alleviated poverty

Table 20. Degree of awareness of the aspects of the exchange strategy

Aspect of awareness	V.H.D (%)	H.D (%)	M.D (%)	L.D (%)	V.L.D (%)	N.A (%)
The existence of the stock exchange strategy	6.0	25.3	33.0	28.3	4.4	3.0
Of the receivers of the stock exchange strategy	3.0	30.0	41.2	19.4	3.4	3.0
Of the givers of the stock exchange strategy	3.9	28.8	21	41.2	2.5	2.6
Of the reasons for giving the stock	7.3	21.5	39.9	25.3	3.4	2.6
Of the procedures and processes involved in the stock exchange	15.9	43.3	28.8	6.0	2.6	3.4

Key. V.H.D= Very high degree; H.D= High degree; M.D= Moderate degree
L.D= Low degree; V.L.D= Very low degree; N.A= Not aware

4.3.3. An index of respondents' degree of awareness

As explained in chapter 2, an index of respondents' awareness of the stock exchange concept and strategy was constructed from 5 indicator variables, listed in Table 20.

4.3.4. Summary of the community's awareness of the existence of stock friend

A frequency distribution of the index indicated a distribution of 23 scores, ranging from a minimum 6 to a maximum 29, with an average of 20.4. A score of 20.4 from a scale of 23 amounts to (88.7%) awareness, which was quite high degree. The index of respondents' degree of awareness concurred with degree of awareness of some aspects of the exchange strategy and proved that the respondents were aware of the strategy and its processes and other activities under study; although adoption of stock friend's strategy was low. Thus awareness of the strategy alone may not have contributed to the fading away singly of the stock friends strategy.

Study objective 2: The community understands of the purpose of stock exchange strategy

4.3.5. The purpose of stock exchange

In way of establishing community's understanding of the purpose of stock exchange strategy, a set of questions were presented to the respondents to verify the truthfulness of the facts representing the purposes of the exchange.

As illustrated by table 21, the four highly verified as very true, true and somewhat true were: the purpose to create relationship bonds among the givers and the receivers of the stock exchange (82.9%); the purpose to assist receivers to get out of poverty (78.6%); and the purpose to assist receivers to get milking stock (76%). The purpose to assist receivers get breeding stock (59.7 %).The other relevant purposes for stock exchange were also verified as true, though in lesser degrees of truth.

Most of the purposes of stock exchange strategy were verified as understood by the community and others not well understood for example the purposes of assisting receivers in times of difficulty, risk aversion and emergency. These slightly understood purposes of stock exchange might have contributed to low adoption of stock friend's strategy, and thus faded away

Table 21. Respondents' verification of the truth about the purposes of stock exchange

Purpose of stock exchange	V.T (%)	T (%)	S.T (%)	N.T (%)	D.K (%)
To assist receiver during emergency	3	12.4	33.9	45.5	5.2
To assist receiver during difficulties	9,9	24.5	18	41.2	6.4
To assist receiver get milking stock	6	36.5	33.5	20.6	3.4
To assist receiver get breeding stock	3	25.8	30.9	35.2	5.1
To assist receiver get out of poverty	7.3	32.2	39.1	18.0	3.4
To assist receiver in risk aversion	4.3	21	29.2	40.8	4.7
To create relationship bonds among the Agro-pastoralists	9	46.4	27.5	12.4	4.7

Key. V.T= Very true; T= True; S.T= somewhat true; N.T= Not true; D.K= Do not know

4.3.6. Respondents' other cultural experiences with stock friend strategy

Asked to indicate the degree of their agreement or disagreement with the suggested cultural benefits accrued through their experiences with stock friend concept, the respondents responded as indicated in Table 22.

The seven cultural benefits experienced by the Ngomeni agro-pastoralists in terms of stock friend's strategy are: A way of supporting each other (85.8%); a way of supporting extended family (77.7%); and a way of adhering to community culture (74.7%); an opportunity for children to work in the farm (59.2%); for provision of ceremony and rituals (57.6%); for provision of polygamous weddings (53.6%); for payment of dowry (52.4%). These seven were strongly to moderately agree by the respondents as indicated by table 22. This is the indication that stock friend's strategy has traditional and cultural importance in the community and that not all the cultural / traditional practices or experiences experimented had been beneficial to the community in an extent of making the community adopt the strategy, for example provision of female circumcision.

Table 22. Respondents' responses to other cultural benefits

Other purposes of stock exchange	S.A (%)	A (%)	M.A (%)	D (%)	S.D (%)	D.K (%)
A way of adhering to community culture	24	26.2	24.5	15	6	4.3
A way of supporting extended family	17.2	43.3	17.2	13.3	4.7	4.3
A way of supporting each other	32.6	40.8	12.4	2.1	3.9	8.2
For provision of ceremony and rituals	9.6	15	33	21	20.6	0.8
For provision of polygamous weddings	4.3	19.7	29.6	23.6	21.5	1.3
For provision of female circumcision	0.4	1.3	30.5	43.8	24.0	0
For payment of dowry	19.3	6.5	26.6	21	24	2.6
Opportunity for children to work in the farm	11.2	33	15	6.9	31.3	2.6

Key. S.A= strongly agree; A= Agree; M.A= moderately agree; D= Disagree; S.D= strongly disagree; D.K= Did not know

4.3.7. An index of community understands of the purpose of stock exchange strategy

As explained in chapter 2, an index of respondents' understanding of the purpose of stock exchange strategy was constructed from 7 indicator variables, listed in Table 21.

A frequency distribution of the index indicated a distribution of 74 scores, ranging from a minimum 14 to a maximum 88, with an average of 48.4.

4.3.8. Summary of the community understands of the purpose of stock exchange

A score of 48.4 from a scale of 74 amounts to 65.4% understanding, which is a rather high understanding of the purpose of the stock friend's concept. Thus the constructed index of the respondents' understanding of the purpose of stock exchange strategy concurs with the Respondents' verification of the truth about the purposes of Stock exchange; in that most of the purposes of the stock exchange and the benefits they accrue were understood by the community. Therefore there must be something which leads to low adoption of the strategy and subsequently fading of the strategy.

Study objective 3: The community's knowledge of the types (e.g. for breeding, milking, etc) and numbers of the livestock exchanged

4.3.9. The adequacy of type and numbers of livestock exchanged.

The respondents were asked if the type and number of the livestock exchange were adequate for provision of certain commodities and services, and for solving various problems in the community. Table 23 indicates that the four highly verified as very true, true and somewhat true were: Adequate to alleviate receivers' poverty and suffering (78.6%); Adequate to solve receiver's problems (60.2%); Adequate for milking for subsistence (58.4%); Adequate for breeding purposes (52.3%); these four were assessed as very true to somewhat true by the respondents. This was the indication that the respondent had the knowledge of adequacy of the type and numbers of the livestock used in the exchange to solve most of the community's problems. The respondents high knowledge on the Adequate to alleviate receivers' poverty and suffering (78.6%) was due to the fact that livestock exchanged were used for many poverty

alleviation activities, for example bulls used for ploughing land for crop production, donkey used to carry water and fire wood either for home or commercial to earn income. This knowledge on the type and number of animals for specific activities had made bulls/steers, donkey and cow's milk goats preferred than other animals like sheep, and meat goat as indicated by the Key informants.

Table 23. Adequacy of type and numbers of livestock for stock exchange

Adequacy of types and numbers for stock exchange	V.T. (%)	T (%)	S.T. (%)	N.T (%)	D.K (%)
Adequate for milking for subsistence	9.4	26.6	22.4	36.9	4.7
Adequate to solve receiver's problems	5.2	23.2	31.8	36.4	3.4
Adequate for breeding purposes	3.4	26.6	22.3	40.4	7.3
Adequate to satisfy receivers' breeding needs	3	18.9	25.8	43.7	8.6
Adequate to alleviate receivers' poverty and suffering	10.3	33.5	34.8	18	3.4

Key. V.T= Very true; T= True; S.T= somewhat true; N.T= Not Tue; D.K= Do not know

4.3.10. An index of type and numbers of livestock for stock exchange

As explained in chapter 2, an index of Adequacy of type and numbers of livestock for stock exchange was constructed from 5 indicator variables, listed in Table 23. A type and numbers of livestock for stock exchange index indicated a distribution of 17 scores, ranging from a minimum 5 to a maximum 23, with an average of 14.6.

4.3.11. Summary of the community understands of adequacy of type and numbers

A score of 14.6 from a scale of 17 amounts to 85.8% of amounts to high understanding of type and number of livestock used for exchanged. Thus the constructed index of the respondents' understanding of the type and numbers exchanged concurs with the Respondents' verification of the truth about various services /problems solved by types and number s of livestock. Most of the services / problems solved are fader mental like the one on poverty alleviation and reduction of suffering and also the types and numbers associated with this activity are import to note as stressed by Key informants.

Study objective 4. Community's knowledge of the frequency of the exchange

4.3.12. Community's knowledge of the frequency of the exchange

In way of establishing community's knowledge of the frequency of the exchange, a set of questions were presented to the respondents to verify the truthfulness of the facts representing the frequency of the exchange.

As illustrated by table 24, the four highly verified as very true, true and somewhat true were: As often as preferred by the receiver of exchange (70.4%); as often as there is need to solve poverty and related problems (69.1%); As often as the traditions/customs dictate (53.3%); As often as (any) problem arise (50.6%). These four were assessed as very true to somewhat true by the respondents. This was the indication that the receivers controlled the frequency and also the frequency was high when there was need to solve poverty and related issues. The issues of traditions/customs and any problem which could be addressed by the strategy when a raised, increased frequency of exchange

Therefore decrease in frequency(fading away) of the strategy , as indicated by Key informants might be due to progressive reduction of grazing land which the receivers need in order to get the animals from the givers.

Table 24. Community's knowledge of the frequency of the exchange

Frequency of exchange	Very true (%)	True (%)	Somehow true (%)	Not true (%)	Do not know (%)
As often as there is need to solve poverty and related problems	9.9	27.0	32.2	27.0	3.9
As often as (any) problem arise	2.1	17.6	30.9	47.2	2.1
As often as preferred by the receiver of exchange	3.4	29.2	37.8	21.5	8.1
As often as the exchanges are there	2.1	24.5	21.0	44.2	8.2
As often as the traditions/customs dictate	0.4	19.7	29.6	44.6	5.6

Key: V.T= Very true; T= True; S.T= somewhat true; N.T= Not true; D.K= Do not know

4.3.13. An index of community's knowledge of the frequency of the exchange

As explained in chapter 2, an index of community's knowledge of the frequency of the exchange was constructed from 5 indicator variables, listed in Table 24.

A frequency distribution of the index indicated a distribution of 18 scores, ranging from a minimum 5 to a maximum 23, with an average of 14.1.

4.3.14. Summary of the community knowledge of the frequency of the exchange

A score of 14.1 from a scale of 18 amounts to 78.3% knowledge of the frequency of exchange, which is a high degree of knowledge of the stock friend's concept. Thus the constructed index of the respondents' knowledge of the frequency of the exchange concurs with the Respondents' verification of the truth about facts representing the frequency of the exchange. Therefore frequency of exchanged livestock and the purposes give almost the same findings that the exchange livestock are for poverty alleviation and tied to traditional/custom issues

Study objective 5. The socioeconomic status of the participants (both the giver and the receiver of the exchange

4.3.15. Community ranking of basic needs

Food, health care, shelter , clean water, education and energy, were ranked as main basic needs in this agro pastoral community of Mwingi, with (86.3%), (73.8%), (66.0%), (61.4%), (55.8%), and (55.8%) respectively as listed in table 25. Unlike the cash income which is not common/ not regarded as main basic need, and therefore not used, for many of the population were not employed. Therefore their socioeconomic status was based on adequacy of six basic needs (food, health care, shelter, clean water, education and source of energy) which could also help to predict their poverty levels. Livestock exchange which affects the all of the basic needs either directly or indirectly through its purposes, roles, in the community affects the socioeconomic status of the givers/receivers. Also adoption of livestock exchange will have effects on socioeconomic status of the givers/receivers for it will take the place of cash in the economy.

Table 25. Adequacy of basic needs

Basic needs	Frequency	Percent
Food	201.2	86.3
Shelter	154	66.0
Clean water	143	61.4
Health care	172	73.8
Education	130	55.8
Energy source	130	55.8
Cash income	102	43.8

Study objective 6. The role and utility of the stock friend's strategy among Ngomeni community

4.3.16. The role and utility of the stock friend's strategy among Ngomeni community

The respondent were asked to indicate the role stock exchange plays in the community in solving various issues ,where 229 respondents representing (98.2%),indicated that the main role is land ploughing,189 respondents representing(80.8%), source of milk and manure,101 respondents representing (42.6%), for payment of bride price, and(36%),(22%),and (7%)of the respondents indicated payment of school fees, general sales for cash, and slaughter for home use. Therefore the main roles of stock exchange are provision of labour for land ploughing and water fetching (plates 1and 2 below) and as a source of milk and manure for the Ngomeni community in extension providing the main basic need which was food thus reducing poverty as indicated in table 26.

Table 26. The role of stock exchange in provision of needs

Benefits of stock exchange	Frequency	Percent
Providing labour for land ploughing	229	98.2
Payment of bride price and initiation ceremonies	101	42.6
Payment of school fees	86	36.1
Provides sales for income sources	53	21.7
Slaughter for home use	20	6.6
Provides products and by-products, milk, manure, and others	189	80.8

Plate 1. Cattle under stock exchange ploughing land

Plate 2. Donkeys under stock exchange used for fetching water

Plate 2. Donkeys under stock exchange used for fetching water

4.3.17. A index of the role and utility of the stock friend's strategy

As explained in chapter 2, an index of the role and utility of the stock friend's strategy was constructed from 6 indicator variables, listed in Table 26 .

A frequency distribution of the index indicated a distribution of 20 scores, ranging from a minimum 6 to a maximum 26, with an average of 17

4.3.18: Summary of role and utility of the stock friend's strategy

A score of 17 from a scale of 20 amounts to 85% which gave the importance of stock exchange played in the Ngomeni community. That was the indication that the exchange was paramount in their food provision and labour in their farms thus reduce poverty. The role of stock friends contributes to creation of productive physical capital (animal traction) and financial capital (food provision) and therefore becomes an important livelihood asset in poverty reduction.

Study objective 7. The relationships between community awareness and knowledge about the strategy, their socioeconomic statuses in influencing adoption of the strategy, and the consequent influence on the poverty levels.

4.3.19. Poverty levels based on income, tropical livestock units, land size

When tropical livestock units, land size and total income were used to categorize respondents, poor to moderate poor people were the majority (71.7%) well the rest were rich. Thus the main poverty indicator is the number of animals and land sizes (Table 27).

In Ngomeni of Mwingi land sizes are relatively enough for the practice and it is an asset somebody (receiver) needs in order to graze the animals and also land for ploughing

Table 27. Poverty levels based on income, tropical livestock units, and land size

Category	Respondents	Percent
Very poor	17	7.3
Poor	40	17.2
Moderately poor	110	47.2
Rich	39	16.7
Very rich	21	9

4.2.20. The adoption of the strategy, and the influence on the poverty levels

The land size ranges as from 1-8 acres. These are the sizes for the moderate poor and rich who are mainly the givers/receivers of the livestock totalling to 148 representing (63.5%) and few being both givers and receivers. This category of both givers and receivers was of people whom had benefited from the practice first as receivers and are slowly gaining higher socioeconomic statuses and had started giving as per report by Key Informants as shown in table 30 The poor who are the majority are aware of the exchange as indicated by the Key Informants and community's degree of awareness of (88.7%) as shown in section 4.2.3 above, but few (36.5%) as indicated in (table 28) may not adopt the strategy because their socioeconomic statuses (specific not having land ownership) would not be entrusted with livestock by any giver. Livestock. Therefore for the poor to adopt the strategy, awareness and, social economic status address was needed to reduce poverty.

Table 28. Adoption of stock exchange practice

Adoption	Frequency	Percent
Yes	148	63.5
No	85	36.5

Table 29. Categories in stock exchange

Category	Frequency	Percent
Giver	42	18.0
Receiver	107	45.9
Both	3	1.3
None	81	34.8

Study objective 8. The potential of stock exchange strategy to be made more adoptable and useful to the Ngomeni communities so as enhance poverty alleviation

4.3.21. Potential of stock exchange strategy and its adoptability

As indicated by key informants, and the sections of this research described above, stock exchange strategy could be made adoptable and usefulness to Ngomeni community to enhance poverty alleviation by considering all the independent and intermediate variables so that the stagy can alleviate poverty. The key informants reported that if the educated and well up members of the community who lived in Nairobi and other towns are aware of the practice and its importance in community wellbeing, and become givers could increase adoption and thus enhance poverty alleviation. The other information was that the animals are grazed up to maturity and replaced , thus the off take was increased and also the system was a market for immature from other neighbouring beef producing districts.

4.4. Testing of the study hypotheses

4.4.1. Introduction

For ease of reference, the null-hypotheses listed in section 1.4 of Chapter One are re-introduced and tested in this section.

H_0 1. There is no statistical significant relationship between community awareness of existence of stock exchange strategy and their adoption of the strategy, and so their poverty levels.

H_0 2. There is no statistical significant relationship between community's understanding of the purpose of stock exchange strategy and their adoption of the strategy, and so poverty levels.

H_0 3. There is no statistical significant relationship between community's knowledge of types (e.g. for breeding, milking, etc) and numbers of stock exchange involved in the strategy and their adoption of the strategy, and so poverty levels.

H_0 4. There is no statistical significant relationship between community's knowledge of frequency of stock exchanged and their adoption of the strategy, and so poverty levels.

H_0 5. There is no statistical significant relationship between the socioeconomic statuses of the givers of the exchange and their adoption of the strategy, and so poverty levels of the receivers.

H_0 6. There is no statistical significant relationship between the community's understanding of the role of stock exchange strategy and their adoption of the strategy, and so poverty levels.

H_0 7. There are no statistical significant relationships between the six independent variables, in depicted in the conceptual model (Figure 2), and adoption of the strategy, and so poverty levels of receivers.

The variables involved and measured in the hypothesis testing included: (1) community poverty levels (the dependent variable); (2) community adoption of the stock exchange strategy (intervening variable); and the five independent variables, namely: community awareness of the existence of the stock exchange strategy; community's understanding of the purpose of stock exchange strategy; community's knowledge of types and numbers of stock exchange involved in the strategy; community's knowledge of frequency of stock exchanged; their socioeconomic statuses of the givers of the exchange; and the community's understanding of the role of stock exchange strategy.

As discussed in the definition and measurement of variables, section 2.20 of Chapter Two, all the above variables in the hypotheses statements were constructed into indexes from relevant

indicator variables. Each of these indicator variables was scored on Likert scale measures, ranging from a score of 0 where a condition is non-existent, to 5 or 6 where the condition is at highest level. The indicator variables were then summed up to construct the index variables above, generating continuous variables as a result, warranting the use of regression analysis to determine relationships between them.

4.4.2. The hypothesis tests

The study hypotheses tested are the relationships of the variables depicted in the study's conceptual frame work model (figures 1), and stated as follow:

H_0 1. There is no statistical significant relationship between community awareness of existence of stock exchange strategy and their adoption of the strategy, and so their poverty levels.

As indicated in Table 30, the two independent variables, namely the degree of awareness of stock exchange strategy and community adoption of the strategy, in combination influence the dependent variable Poverty levels, and thus rejecting the null-hypothesis 1. It can thus be concluded that there is a statistical significant relationship between community awareness of existence of stock exchange strategy and their adoption of the strategy, and so their poverty levels.

The β (Beta) statistics which are the measures of association between the variables, are statistically significant and are large (with – 0433 and - 0.314 values respectively), suggesting a strong relationship between the community awareness of the strategy, their adoption of the strategy, and poverty levels.

Moreover, the coefficient of determination, R square (R^2) is also large and statistically significant, implying that the two independent variables explain 23.8% variation in the dependent variable, poverty levels.

In way of triangulation, the t-value generated in the regression analysis, and the statistically significant F-change in the coefficient of determination confirms the association between community awareness of the stock exchange strategy and their adoption of the strategy on poverty levels.

Table 30. Regression Coefficients (degree of awareness and adoption)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	34.920	1.301		26.831	.000
	Community adoption of stock exchange strategy	-.109	.020	-.314	-5.370	.000
	Degree of Awareness of Stock Exchange strategy	-.432	.058	-.433	-7.406	.000

a. Dependent variable: Poverty level

Model	R	R Square	Sig. F Change
1	.488[a]	.238	.000

a. Dependent variable: Poverty level

The negative β statistics imply that the higher the degree of stock exchange strategy awareness and the higher the levels of adoption of the strategy, the lower will be the poverty levels.

H_0 2. There is no statistical significant relationship between community's understanding of the purpose of stock exchange strategy and their adoption of the strategy, and so poverty levels

As indicated in Table 31, the two independent variables, namely community's understanding of the purpose of stock exchange strategy and their adoption of the strategy, in combination influence the dependent variable Poverty levels, and thus rejecting the null-hypothesis 2. It can thus be concluded that there is a statistical significant relationship between community's understanding of the purpose of stock strategy and their adoption of the strategy, and so their poverty levels.

The β (Beta) statistics which are the measures of association between the variables, are statistically significant and are large (with –0.272 and -0.345 values respectively), suggesting a

moderate relationship between the community's understanding of the purpose of stock strategy, their adoption of the strategy, and poverty levels.

Moreover, the coefficient of determination, r^2 is also of moderate size and statistically significant, implying that the two independent variables explain 17.4% variation in the dependent variable, poverty levels.

In way of triangulation, the t-value generated in the regression analysis, and the statistically significant F-change in the coefficient of determination confirm the association between community's understanding of the purpose of stock exchange strategy and their adoption of the strategy on poverty levels.

Table 31 Regression Coefficients (degree of understanding of purpose and adoption)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. error	Beta	t	Sig.
1	(Constant)	33.162	1.324		25.046	.000
	Community adoption of stock exchange strategy	-.094	.021	-.272	- 4.517	.000
	Degree of community understanding of purpose of Stock exchange	-.310	.054	-.345	-5.719	.000

a.Dependent variable: Poverty level

Model	R	R Square	Sig. F Change
1	.417[a]	.174	.000

a.Dependent variable: Poverty level

The negative β statistics imply that the higher the community understands of the purpose of stock exchange, and the higher the levels of adoption of the strategy, the lower will be the poverty levels.

H_0 3. There is no statistical significant relationship between community's knowledge of types (e.g. for breeding, milking, etc) and numbers of stock exchange involved in the strategy and their adoption of the strategy, and so poverty levels

As indicated in table 32, the two independent variables, namely community's knowledge of types and numbers livestock in stock exchange strategy and community adoption of the strategy, in combination influence the dependent variable Poverty levels, and thus rejecting the null-hypothesis 3. It can thus be concluded that there is a statistical significant relationship between community's knowledge of types and numbers livestock in stock exchange strategy and their adoption of the strategy, and so their poverty levels.

The β (Beta) statistics which are the measures of association between the variables, are statistically significant and are large (with – 0.180 and - 0.449 values respectively), suggesting a very strong relationship between community's knowledge of types and numbers livestock in stock exchange strategy, and a weak relationship of the community's adoption of the strategy, and their poverty levels.

Moreover, the coefficient of determination, r^2 is also of moderate size and statistically significant, implying that the two independent variables explain 25.5% variation in the dependent variable, poverty levels.

In way of triangulation, the t-value generated in the regression analysis, and the statistically significant F-change in the coefficient of determination confirm the association between community's knowledge of types and numbers livestock in stock exchange strategy and their adoption of the strategy, on poverty levels.

Table 32. Regression Coefficients (knowledge of types and numbers and adoption)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	35.449	1.305		27.162	.000
	Community adoption of stock exchange strategy	-.062	.020	-.180	3.130	.002
	Community knowledge of type and numbers of stock for exchange	-.524	.067	-.449	-7.829	.000

a. Dependent Variable: Poverty Level

Model	R	R Square	Sig. F Change
1	.505[a]	.255	.000

a. Dependent variable: Poverty level

H_0 4. There is no statistical significant relationship between community's knowledge of frequency of stock exchanged and their adoption of the strategy, and so poverty levels

As indicated in table 33, the independent variable, community knowledge of frequency of stock exchanged does not influence the dependent variable, poverty level, with a very weak and an insignificant β value of -0.008. This means that knowledge of the frequency of stock exchange is uneventful to poverty level.

However, the other independent variable, community adoption of the strategy, by itself influences the dependent variable, poverty levels, with a moderate size β value of -0.290. The null-hypothesis can thus be partially rejected, and can be concluded that there is a statistically non-significant relationship between community's knowledge of frequency of stock exchanged and Poverty level, while there is statistical significant relationship between community's adoption of the strategy and their poverty levels.

However, the coefficient of determination, r^2 is also very small (0.081), but statistically significant, implying that the two independent variables explain only 8.1% variation in the dependent variable, poverty levels. This means that there is some 91.9% variation that is explained by other unidentified variables.

In way of triangulation, the t-value generated in the regression analysis for community adoption of stock exchanged, and the statistically significant F-change in the coefficient of determination confirm the association between the two independent variables and the dependent variable, Poverty levels.

Table 33. Regression Coefficients (knowledge of frequency and adoption)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. error	Beta	t	Sig.
1	(Constant)	26.200	1.103		23.744	.000
	Community adoption of stock exchange strategy	-.106	.031	-.290	3.457	.001
	Community knowledge of frequency of stock exchange taking place	-.035	.349	-.008	-.099	.921

a. Dependent variable: Poverty level

Model	R	R Square	Sig. F Change
1	.285[a]	.081	.000

a. Dependent variable: Poverty level

H_0 5. There is no statistical significant relationship between the socioeconomic statuses of the givers of the exchange and their adoption of the strategy, and so poverty levels of the receivers

As indicated in Table 34, the two independent variables, namely the socioeconomic statuses of the givers of the exchange and community adoption of the strategy, in combination influence the dependent variable poverty levels, and thus rejecting the null-hypothesis 5. It can thus be

concluded that there is a statistical significant relationship between the socioeconomic status of the givers of the exchange and their adoption of the strategy, and so their poverty levels.

The β (Beta) statistics which are the measures of association between the variables, are statistically significant and are large (with – 0.139 and - 0.249 values respectively), suggesting a moderate relationship between the socioeconomic statuses of the givers of the exchange, and a stronger relationship of the community's adoption of the strategy, and their poverty levels.

Moreover, the coefficient of determination, (r^2) is small and statistically significant, implying that the two independent variables explain only 7.5% variation in the dependent variable, Poverty levels.

In way of triangulation, the t-value generated in the regression analysis, and the statistically Significant F-change in the coefficient of determination confirms the association between the socioeconomic statuses of the givers of the exchange and their adoption of the strategy, on poverty levels

Table 34. Regression Coefficients (socioeconomic status and adoption)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. error	Beta	t	Sig.
1	(Constant)	24.749	1.351		18.322	.000
	Community adoption of stock exchange strategy	.086	.022	.249	3.909	.000
	Socioeconomic status	.181	.083	.139	2.188	.030

a. Dependent variable: Poverty level

Model	R	R Square	Sig. F Change
1	.274[a]	.075	.000

a. Dependent variable: Poverty level

H_0 6. There is no statistical significant relationship between the community understanding of the role of stock exchange strategy and their adoption of the strategy, and so poverty levels

As indicated in Table 35, the independent variable, community understanding of the role of stock exchange strategy does not influence the dependent variable, poverty level, with a very weak and an insignificant β value of -0.020. This means that the community understands of the role of stock exchange strategy is uneventful to poverty level.

However, the other independent variable, community adoption of the strategy, by itself influences the dependent variable Poverty levels, with a large size β value of -0.319. The null-hypothesis 6 can thus be partially rejected, and can be concluded that there is a statistically non-significant relationship between the community's understanding of the role of stock exchange strategy and Poverty level, while there is statistical significant relationship between community's adoption of the strategy and community poverty levels.

However, the coefficient of determination, (r^2) is also small (0.105), but statistically significant, implying that the two independent variables explain only 10.5% variation in the dependent variable, poverty levels. This means that there is some 89.5% variation that is explained by other unidentified variables.

In way of triangulation, the t-value generated in the regression analysis for community adoption of stock exchanged, and the statistically significant F-change in the coefficient of determination confirm the association between the two independent variables and the dependent variable, poverty levels.

Table 35. Regression coefficients (role of stock exchange existence and adoption)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. error	Beta	T	Sig.
1	(Constant)	5.216	.456		11.442	.000
	Community adoption of stock exchange strategy	-.030	.006	-.319	-5.001	.000
	Community understanding of the role of stock exchange	-.008	.026	-.020	-.313	.755

a. Dependent variable: Poverty level

Model	R	R Square	Sig. F Change
1	.324[a]	.105	.000

a. Dependent variable: Poverty level

H_0 7: There are no statistical significant relationships between the six independent variables, depicted in the conceptual model (Figure 2), and adoption of the strategy, and so poverty levels of receivers.

Excluding the two variables found to have statistically insignificant association/relationship with the dependent variable, poverty levels, in the above hypotheses tests, the other four were regressed against the intervening variable, adoption of the stock exchange strategy and the dependent variable, poverty levels. The four variables included: community awareness of existence of stock exchange strategy; community's understanding of the purpose of stock exchange strategy; community's knowledge of types and numbers of stock exchange involved in the strategy; and socioeconomic statuses of the givers of the exchange.

Table 36 presents the regression coefficients *betas* for the four variables that were supposed to be associated or influence the intervening variable, adoption of the strategy and the dependent variable, poverty levels amongst Ngomeni community. Of these, only two were determined to be

statistically significantly associated with and influence poverty amongst the community. In order of importance, these two are: community's understanding of the purpose of stock exchange strategy (with a β value of -.276); and Community's knowledge of types and numbers of stock exchange involved in the strategy (with a β value of -.238). The intervening variable, community adoption of the stock exchange strategy (with a β value of -.289) was also determined to have a statistical significant association with poverty levels.

The β (Beta) statistics which are the measures of association between the variables and the dependent variable, poverty levels, are statistically significant and are larger than those of the same variables when regressed individually against the dependent variable, poverty levels.

The null-hypothesis 7 is thus be partially rejected, and modified to state statistical significant association between the two independent variables and the intervening variable on poverty levels.

Incidentally, the large coefficient of determination, r^2 of 0.335 is also statistically significant, implying that the two independent and one intervening variables explain 33.5% variation in the dependent variable, poverty levels. This means, only 66.5% variation in poverty levels can be explained by other unidentified variables.

In way of triangulation, the t-value generated in the regression analysis, and the statistically significant F-change in the coefficient of determination confirm the association between community's understanding of the purpose of stock exchange strategy, their knowledge of types and numbers of stock exchange involved in the strategy, and their adoption of the stock exchange strategy have a statistical significant association with poverty levels.

Table 36. Regression coefficient (six variables and adoption)

Coefficients

Model		B	Beta	t	Sig.
1	(Constant)	4.481		8.943	.000
	Degree of Awareness of Stock Exchange strategy	-.018	-.065	-.897	.371
	Degree of community understanding of purpose of Stock exchange	-.068	-.276	-3.186	.002
	Community knowledge of type and numbers of stock for exchange	-.076	-.238	-2.686	.008
	Community adoption of stock exchange strategy	-.028	-.289	-4.331	.000
	Socioeconomic status	-.016	-.044	.673	.501

a. Dependent variable: poverty level

Model	R	R Square	Sig. F Change
1	.579[a]	.335	.000

a. Dependent variable: Poverty level

4.4.3. Summary and conclusion of the hypothesis test results

As suggested in Section 2.18 in Chapter Two, the conceptual framework was developed to demonstrate the associations/relationships between the independent variables (the community awareness of existence of stock exchanges; purpose of stock exchanges; type and numbers of the stock exchanges; frequency of the stock exchanges; the socioeconomic status of the givers; and

the role of the stock exchanges), and dependent variable (poverty levels), through the effects of the intervening variable, adoption of the stock exchange strategy.

These associations/relationships (as depicted in Figure 2 in the same conceptual framework section) were hypothesized to represent influences of the independent variables on the intervening variable, adoption of the stock exchange strategy, and on the dependent variable, poverty levels.

It was thus hypothesized that

(1) Community awareness of existence of stock exchange strategy and the consequent adoption of the strategy, will influence community's poverty levels;

(2) Community's understanding of the purpose of stock exchange strategy and the adoption of the strategy, will influence community's poverty levels;

(3) Community's knowledge of types and numbers of stock exchange involved in the strategy and consequent adoption of the strategy, will influence community's poverty levels;

(4) Community's knowledge of frequency of stock exchanged and consequent adoption of the strategy, will influence poverty levels;

(5) Socioeconomic statuses of the givers of the exchange and consequent adoption of the strategy, will influence poverty levels of the receivers;

(6) Community's understanding of the role of stock exchange strategy and consequent adoption of the strategy, will influence poverty levels;

(7) The six independent variables, as depicted in the conceptual model (Figure 2), and consequent adoption of the strategy, will influence poverty levels concertedly.

Since all the variables involved in the hypotheses were of continuous type, multiple regression analyses were run to test the hypotheses, applying regression coefficients β (*beta*) values, coefficient of determination (r^2) values, and significant at $p \leq .0.05$.

Of the first six hypotheses, two (hypotheses four and six) were confirmed by the generated insignificant statistics to be untrue, and that community knowledge of frequency of stock exchange taking place, and community understanding of the role of stock exchange did not influence adoption of the strategy, nor poverty levels of the community.

The remaining four hypotheses, namely hypotheses one, two, three, and five, were confirmed to be true, supported by the generated statistics. It can thus be concluded that:

(1) There is a statistical significant relationship between community awareness of existence of stock exchange strategy and their adoption of the strategy, and so their poverty levels;

(2) There is a statistical significant relationship between community's understanding of the purpose of stock exchange strategy and their adoption of the strategy, and so poverty levels;

(3) There is a statistical significant relationship between community's knowledge of types and numbers of stock exchange involved in the strategy and their adoption of the strategy, and so poverty levels;

(4) There is a statistical significant relationship between the socioeconomic statuses of the givers of the exchange and their adoption of the strategy, and so poverty levels of the receivers;

In terms of the strength of association between the variables, community's knowledge of types and numbers of stock exchange involved in the strategy had the strongest, with a β (*beta*) value of -0.449, and it explained 25.5% variation of the dependent variable, poverty level. This was

followed by community awareness of existence of stock exchange strategy, with a β (*beta*) value of -0.433, and explained 23.8% variation of the dependent variable, poverty level. The third strongest variable was community understanding of the purpose of stock exchange strategy, with a β (*beta*) value of -0.345, and explained 17.4% variation of the dependent variable, poverty level. The weakest association between the variables was that between socioeconomic statuses of the community and the dependent variable, poverty levels, with a β (*beta*) value of -0.139, and explained only 7.5% variation of the dependent variable, poverty level.

The multiple regression run to test hypothesis seven excluded the two variables determined to have statistical insignificant association with adoption of the strategy and the dependent variable, poverty levels, namely community knowledge of the frequency of stock exchange taking place, and community understanding of the role of stock exchange. Thus, only five variables were included in the regression analysis which generating two statistical insignificant associations and three significant associations as follow:

(1) The degree of community awareness of the stock exchange strategy is not associated with, and does not influence poverty levels.
(2) The socioeconomic statuses of the community are not associated with, and do not influence poverty levels.
(3) The degree of community understanding of the purpose of stock exchange strategy is associated with, and influences poverty levels, with a β (*beta*) value of -0.276.
(4) Community knowledge of type and numbers of stock used in the exchange is associated with, and influences poverty levels, with a β (*beta*) value of -0.238.
(5) Adoption of the stock exchange strategy is associated with, and influences poverty levels, with a β (*beta*) value of -0.289.

4.4.4. Lessons learnt from hypothesis testing

When operating individually, the important variables that are associated with, and influence adoption of the stock exchange strategy are, in ranked order: community knowledge of type and numbers of stock used in the exchange; the degree of awareness of the stock exchange strategy;

the degree of community understanding of the purpose of stock exchange strategy; and socioeconomic statuses of the people. These variables have generated large β (*beta*) values, implying that the associations are strong.

However, it is not normal that the variables will operate individually to affect poverty levels amongst the people. Rather, the variables operate concertedly, combining their effects on poverty levels. Logically therefore, the associations with and influences on poverty levels must be examined through the concerted influences. Consequently, the most important variables associated with and influencing poverty are: the degree of community understanding of the purpose of stock exchange strategy; community knowledge of type and numbers of stock used in the exchange; and adoption of the stock exchange strategy itself.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

1. Community's knowledge of types and numbers of stock exchange involved in the strategy and consequent adoption of the strategy, will influence community's poverty levels; with a β (*beta*) value of -0.449, and it explained 25.5% variation of the dependent variable, Poverty level

2. Community awareness of existence of stock exchange strategy and the consequent adoption of the strategy, will influence community's poverty levels; with a β (*beta*) value of -0.433, and it explained 23.8% variation of the dependent variable, Poverty level

3. Community's understanding of the purpose of stock exchange strategy and the consequent adoption of the strategy, will influence community's poverty levels; with a β (*beta*) value of -0.345, and it explained 17.4% variation of the dependent variable, poverty level

4. Socioeconomic statuses of the givers of the exchange and consequent adoption of the strategy, will influence poverty levels of the receivers; with a β (*beta*) value of -0.139, and it explained 7.5% variation of the dependent variable, poverty level

5. Community's understanding of the role of stock exchange strategy and consequent adoption of the strategy, will not influence poverty levels; with a β (*beta*) value of -0.020, and it explained 10.5% variation of the dependent variable, poverty level

6. Community's knowledge of frequency of stock exchanged and consequent adoption of the strategy, will not influence poverty levels; with a β (*beta*) value of -0.008, and it explained 8.1% variation of the dependent variable, poverty level

7. The six independent variables, as depicted in the conceptual model and consequent adoption of the strategy, will influence poverty levels concertedly., and it explained 33.5 % of the dependent variable, poverty level

5.2. Recommendations

A number of recommendations can be made to improve the stock exchange concept among the Ngomeni community.

1. First, there is need to inform the community about the importance of purpose and role of the livestock exchange through various media, and workshops. Government and non-governmental organisations can play a vital role in this awareness, funding and implementation process, to help increase rate of adoption of the concept, and in turn lower poverty levels.

2. An alternative to the stock exchange strategy, based on similar model, approach and principles for providing livestock to the poor, or the people in need, in order to uplift their living standards and sustain the processes of the strategy which is acceptable to the community. This should be moulded and embodied in the comprehensive household activities that include crops production and general household chores. The entry point is providing the right type of animals for the exchange which are the bulls, steers, milking animals, and donkeys.

3. The next step is to promote the spirit of giving amongst the community, which should be based on local customs, and be acceptable, sustainable and viable. Thus, the types of preferred animals, such as bulls for ploughing, and donkeys for providing labour and transportation should be encouraged for the exchange. Because of children who need milk, provision of milk goats and cows will stabilise the house hold economy.

4. The underlying principle should be that all the undertakings in the implementation have to be consistent with social networks, norms, customs, and traditions of the agro-pastoral, and in this case, the Akamba population.

5.3. Suggestions for further research

There are other addition issues and factors in stock friend's concept among agro-pastoral communities which need to be investigated and studied from pure pastoral communities. These include:

- How to motivate the stock exchange givers in participating, including opening up avenues of business and importantly, replacement of his donated or shared livestock.
- How to motivate, encourage, and facilitate the receiver of the stock exchange, to gain property and increase prosperity, so that he/she can ultimately be a giver in the stock exchange exercise.

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APPENDICES

Appendix 1. Classifications of poverty as in Schwartzman (1998)

Chronic Poverty

- Life expectancy rate
- Number of persons below the poverty line as a portion of the total population
- Mortality rates
- Infant mortality rate
- Number of malnourished children per 1000
- Number of persons receiving food stamps, rehabilitation grants and other poor relief services as a proportion of the total number of eligible poor relief recipients
- Community and nation dependency ratio
- Age distributions
- Crude birth and death rates
- Number of disabled persons serviced by poor relief services as a portion of the total eligible population
- Number of elderly persons serviced by poor relief services as a portion of the total eligible population
- Number of children serviced by poor relief services as a portion of the total eligible population
- Number of unemployed persons receiving poor relief services as a portion of the total eligible population
- Number of unemployed with children receiving poor relief services as a portion of the total eligible population

Consumption Poverty

- Adult literacy rate
- Participation in remedial literacy programmes
- Dropout rates for primary, secondary school

- Performance of students on standardized tests
- Student teacher ratio
- Number of schools/children participating in welfare programmes e.g. school feeding programme versus total eligible population
- Number of training institutions and spaces available versus the demand for this service
- The number of trainees turned out by training institutions
- The number of trainees turned out by training institutions who have successfully gained employment in their chosen field
- The number of jobs created by the training process
- Mean income of trainees
- The number of micro enterprise projects financed versus total demand for financing
- The number of jobs created by the financing of micro-enterprise projects
- Mean income of entrepreneurs financed lending institutions
- The number of projects financed per year
- The number of projects approved as a portion of total applications
- The successful collection of loaned funds
- The number of disabled persons trained or given finance as a portion of the total eligible population.
- The number of participants in sponsored agricultural programmes
- Ecologically responsible behaviour of farmers in the targeted programmes
- General health status
- Unemployment rates
- Labour force participating rates
- The poor's (lowest two quintiles in the society) share of total income
- Average household income
- Per capita consumption rates
- The per capita consumption rates of the lowest two quintiles in the population
- Mean income
- Modal income
- Access to self help programmes
- Crime rate

Resource Capability Poverty

- Graduation rates
- Doctor patient ratio
- Access to medical services
- The number of persons with access to potable water (including piped water, standpipes, entombed springs, wells, and community tanks)
- The types and numbers of household sanitation
- The number of low income housing solutions
- The number of persons accessing assistance in gaining household solutions
- The creation of playfields, parks, training centres etc
- Repairs done to playfields, parks, training centres, hospitals, clinics, schools etc
- The provision and improvements of roads
- The number of private telephones per 1000
- The number of call boxes per 1000
- The number of persons with access to private telephones
- The number of persons with access to call boxes
- The types and quality of housing
- Housing tenure
- Number of persons legally accessing public electricity
- Methods used and the numbers using the various types of waste disposal
- Crime rates

Appendix 2. Questionnaire for household survey

Poverty alleviation survey of stock friends 2006-2007, Ngomeni Division.

Sir/Madam: My name is:_____
Of_____

I am collecting information for a study looking at poverty and how stock exchange between farmers can help alleviate the poverty among the Ngomeni community.

This study and survey are for educational purpose only. The information you provide will be treated with utmost confidentiality, and will NOT be personalized. Your identity will thus not be exposed. Your assistance in answering the questions truthfully and accuracy will be highly appreciated.

Questionnaire No.:_____

Location_____ Sublocation:_____ Village_____

(1) Name of the respondent. _____

(2) Respondent's relationship to the head of household_____

(3) Name of head of the household _____

(4) Highest educational level reached by head of household: University_____
College/technical training_____ Secondary school_____ Primary school_____
Pre-primary school_____ No formal education_____

(5) Calculating from monthly and/or seasonal incomes, please estimate the following incomes per year for the head of household:

Income from crop sales per year KShs._____

Income from livestock sales per year KShs._____

Income from livestock products sales per year KShs._____

Income from other farm products sales per year KShs._____

Income from wage employment per year KShs._____

Income from remittances and contributions from other members of the household, per year KShs._____

Total income per year from the above sources KShs_____

(6) Indicate the number of each type of livestock possessed by head of household (so as to calculate the total number of livestock units):

No. of cattle:_____ Livestock units:_____ (1.0 LU per animal)
No.of goats: _____ Livestock units:_____ (0.2 LU per animal)
No. of sheep:_____ Livestock units:_____ (0.2 LU per animal)
No.of camels: _____ Livestock units:_____ (1.2 LU per animal)
No.of donkeys: _____ Livestock units:_____ (0.3 LU per animal)

Total Nos:_____ Total Livestock units:_____

(7) Indicate (by ticking) all the farm assets and structures that the head of the household possesses, from the following list:

Land_____ Tractor_____ Vehicle_____ Water structure_____
Wire fence_____ Barn/store_____ Farm house_____ Office_____
Cattle dip/spray_ _____ Dairy house_____ Animal shed_____ Livestock_____
Crops_____ Beehives_____ Power house/generator_____ Farm tools____

(8) What role(s) or position(s) in this community does the head of household play?

Member of Parliament_____ County Councillor_____
Government leader_____ Traditional leader_____
Opinion leader_____ Group leader_____
Religious leader_____ Others (specify)_____

(9) Please rank the roles in order of respect that they command in your community:

(Give 1 to the most respected, 2 to the second most respected, and so on, and 8 to the least respected)

Member of Parliament_____ County Councillor_____
Government leader_____ Traditional leader_____
Opinion leader_____ Group leader_____
Religious leader_____ Others (specify)_____

(10) Occupation of head of household: Livestock farmer___ Crop farmer_____
Mixed farmer____ Business____ Wage employee_____ Unemployed_____
Other (specify)_____

(11) Marriage status of the head of household:
Married_____ Single_____ Divorced_____ Widowed_____
Separated_____

(12) Total farm size:_____ hectares

Farm size under crops_____ hectares
Farm size for livestock use_____ hectares
Farm size under other uses_____ hectares

(13) What criteria will you use to identify a poor person in your community"

_____
_____
_____

(14) Using this criteria, how many families in every 20 families in your community would you consider: Poor_____ Very poor_____ Rich_____ Very rich_____

(15) Using this criteria, where do you place yourself?

Poor_____ Very poor_____ Rich_____ Very rich_____ Moderate_____

(16) Are you aware of the practice of exchanging livestock among your community as gifts, loans, etc, so as to assist each other community? Yes_____ No_____

(17) If yes, do you consider these livestock exchanges in your community to be: Very common_____ Common _____ Rare_____ Very rare_____

(18) Are you personally involved in these livestock exchanges? Yes____ No____

(19) If you are involved, are you a: Giver_____ Receiver_____ Both_____

(20) Is the practice of livestock exchange: Increasing_____ Decreasing_____ or Unchanging_____ Don't know_____

(21) Please give reasons for your answer to the above: _____

_____
_____
_____
_____

(22) **Household Socioeconomic and Demographic data**

1. How many people live in the household (HHOLD)? _____
2. Please give details for these persons in the following table:

PERSON NUMBER	RELATION TO HHOLD HEAD	SEX	AGE	HIGHEST EDUCATION	STILL IN SCHOOL?	EMPLOYED OFF-FARM?	MONEY (KSHS) REMITTED TO HHOLD PER MONTH	PROVIDES HHOLD FARM LABOUR?	PROVIDES HHOLD DOMESTIC LABOUR?	NUMBER OF OWN CHILDREN LIVING IN THE HHOLD
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										

(23) Please indicate the adequacy of the following basic needs in your household by ticking the appropriate boxes:

Adequacy Of Basic Need	**Very Adequate (5)**	**Adequate (4)**	**Moderate adequate (3)**	**Inadequate (2)**	**Very inadequate (1)**	**Lacking (0)**
Food						
Shelter						
Clean water						
Healthy care						
Education						
Energy source						
Cash income						
Total Scores						

(24) Please indicate the degree of your awareness of issues in the livestock exchanges by ticking the appropriate boxes:

Degree of Awareness Of:	**Very High Degree (5)**	**High Degree (4)**	**Moderate Degree (3)**	**Low Degree (2)**	**Very Low Degree (1)**	**Lack Awareness (0)**
Existence of exchange						
Of receivers						
Of givers						
Reasons for Giving						
Process involved						
Total scores						

(25) Please indicate the purposes of the stock exchanged when you are involved in them, by ticking the appropriate boxes:

Purpose of Exchange to assist receiver:	**Very True (4)**	**True (3)**	**Somewhat True (2)**	**Not True (1)**	**I am not aware (0)**
In emergency					
In difficulties					
In providing Milking stock					
In providing breeding stock					
Coming out of poverty					
In risk aversion					
In creating relationship bonds					
Total Scores					

(26) Please indicate the adequacy of the types and number of livestock exchanged by ticking the appropriate boxes:

The type of exchanged stock and numbers were:	**Very True (4)**	**True (3)**	**Somewhat True (2)**	**Not True (1)**	**Don't know (0)**
For milking for subsistence					
Adequate for milking, to solve receivers' problems					
For breeding purposes					
Adequate for breeding, to satisfy receivers' breeding needs					
Helpful in alleviating receivers' poverty and attenuating suffering					
Total Scores					

(27) Please indicate the frequency of the livestock exchanges as you see and undertake them, by ticking the appropriate boxes:

The stock exchanged were frequent enough:	**Very True (4)**	**True (3)**	**Somewhat True (2)**	**Not True (1)**	**Don't know (0)**
As to solve receivers' poverty and related problems					
As receivers' poverty and related problems arise					
As preferred by the receivers					
As the exchanges were always there					
As the exchanges were a community custom/tradition					
Total Scores					

(28) *To be done by the researcher/research assistant*

Please indicate the levels of the socioeconomic status indicators, by ticking the Appropriate boxes (using the responses in Questions 4 through 9):

The indicator	**(5)**	**(4)**	**(3)**	**(2)**	**(1)**	**(0)**
Educational level	University	College/ Technical Training	Secondary school	Primary school	Pre-Primary school	None
Cash income	Highest Quintile	2nd Highest Quintile	3rd Highest Quintile	4th Highest Quintile	Lowest Quintile	None
Total livestock units	Highest Quintile	2nd Highest Quintile	3rd Highest Quintile	4th Highest Quintile	Lowest Quintile	None
Number of Farm assets/structures items	13 >	12 – 10	9 - 7	6 – 4	3 - 1	None
Community role	Highest respected	2nd Highest respected	3rd Highest respected	4th Highest respected	5th Highest respected	Other Roles
Total Scores						

(29) Please indicate the role of the livestock exchanges as you personally experienced them, by ticking the appropriate boxes:

The stock exchanges provide:	**Very True (4)**	**True (3)**	**Somewhat True (2)**	**Not True (1)**	**Don't know (0)**
Lobour for land ploughing					
Payment of bride price and initiations ceremonies					
Payment of school fees					
Sale for income source					
Slaughter for home use					
Provision of product and by products; milk, manure and others					
Total Scores					

(30) Please indicate the trends in basic needs in the last five years, as they affected you

Trends in Basic needs	**Very Much Impro -ved (6)**	**Much Impro -ved (5)**	**Moderately Impro- ved (4)**	**No Change (3)**	**Deterio- rated (2)**	**Very Much Deterio- rated (1)**	**Lost All There Was (0)**
Food							
Shelter							
Clean water							
Healthy care							
Education							
Energy source							
Cash income							
Total Scores							

(31) How much do you agree with the following suggestions, and how often do you personally practise/experience the suggested?

The stock exchanges provide:	**SA (5)**	**A (4)**	**MA (3)**	**D (2)**	**SD (1)**	**DK (0)**	**AP (5)**	**OP (3)**	**NP (0)**
A way of culture in your community									
Economic benefits to receiver									
Assistance in risk aversion									
Immediate subsistence and relief									
Long term benefits through breeding of livestock									
Cementing of relationships between givers and receivers									
Assistance in poverty alleviation									
Assistance in supporting extended families									
Assistance in supporting each other									
For ceremonies and rituals									
For polygamous weddings									
For female circumcision									
For payment of dowry									
Opportunities for children to work in the farm									
Total Scores									

***Key*:**

SA : Strongly agree
A : Agree
MA : Moderately agree
D : Disagree
SD : Strongly Disagree
DK : Don't know

AP : Always practise
OP : Occasionally practise
NP : Never practise

THANK YOU VERY MUCH FOR YOUR TIME AND IDEAS!!!!!

Appendix 3. Questionnaire for Key Informant survey

Poverty alleviation survey stock friends 2006-2007, Ngomeni Division –Mwingi

Sir/Madam: My name is: _____
Of_____

I am gathering information for a study looking at poverty and how stock exchange between farmers can help alleviate the poverty among the Ngomeni community.

This study and survey are for educational purpose only. The information you provide will be treated with utmost confidentiality, and will NOT be personalized. Your identity will thus not be exposed. Your assistance in answering the questions truthfully and accuracy will be highly appreciated.

Name of the respondent _____

Sex _____ Age _____ Division_____

Location_____ Sub-location:_____ Village_____

Date of interview _____ Place of interview _____

Occupation and rank_____ _____

Community role/position:_____

The Questions:

1. The pastoralists and agro-pastoralists exchange livestock amongst themselves to assist each other, for various reasons, and through specific procedures. Please educate me in details on how the livestock exchange works in your community.

2. Is the way stock exchange is practised in your community the same as is for the pastoral and agro-pastoral societies? Please explain.

3. What are the purposes of livestock exchange in your community and in the way you have known and experienced it?

4. What type of animals and numbers are used in livestock exchanges in your community, and why so? Are they the right type and adequate in numbers to serve the purpose intended?

5. Is the stock exchange a tradition in your community? And if so how often is it practised? Is it frequent enough to have impacts?

Please describe the socioeconomic status of both the givers and the receivers of the livestock exchanges, in terms of their educational levels, incomes, and livestock possessions, farm assets and structures, and their community roles? Are there differences?

What is your perception of poverty and poverty types and levels among your community? What proportions of your community are: Poor; Very Poor; Moderate; Rich: and Very Rich?

What are your personal views on the role of the stock exchange practice? Does it work in your area and community? Why or why not? Should they be encouraged?

What recommendations would you suggest as ways of making the stock exchange strategy work in your area to help your community?

THANK YOU VERY MUCH FOR YOUR TIME AND IDEAS!!!!!