Assessing the Influence of Knowledge of Type and Numbers of Livestock Exchanged in Stock Friends Concept as a Strategy in Poverty Alleviation; the Case of Ngomeni Community of Mwingi District in Kenya

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Abstract
One of the challenge-facing Kenya is high levels of poverty. Different ways of poverty alleviation are applied among them is stock friends strategy. The strategy is ineffective among the Ngomeni community of Mwingi District. It is postulated that there is poor understanding of the right types and numbers of livestock for the exchange; and the rate of adoption of the strategy. A socio-ecological survey of 233 households sampled and complemented by Key Informant interviews was conducted. Descriptive and regression analyses using SPSS were used to determine the associations and influences of the factors (independent variable) on poverty levels of the community (dependent variable). The degree of 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 were found to be key and could be addressed using stock friend's concept.
Key words: *Livestock exchange, agro- pastoral; safety nets, adoption*

INTRODUCTION

The biggest challenge facing the world today is high levels of poverty among its populations, of which Kenya is not an exception [11]. Different ways of poverty alleviation are applied ranging from political, economic, socio-economic and socio-cultural. One such socio-cultural way is the "stock friends" strategy, very common and popular among pastoralists and agro-pastoralists. Although this strategy contributes to poverty alleviation in pastoral and agro-pastoral societies, the strategy is seen to be ineffective among the agro-pastoral Ngomeni community of Mwingi District, because of unknown factors. Pastoral and agro-pastoral people live in unpredictably harsh and varying environments [1], and initiate exchange of livestock among themselves for reasons of security. Socio-culturally, 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 be lost and/or decrease rapidly in bad seasons, or in an epidemic or a raid. One of a number of strategies that pastoralists and agro-pastoralists use to combat and alleviate poverty is based in the "stock friends" concept. "Stock friends" strategy is the loaning and sharing of animals/herds as a survival strategy (safety net) [12]. 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. Incidentally, the stock friend's strategy has been 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 livestock for exchange to the needy, are necessary conditions for the adoption of the strategy. 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 [9]. If the second individual adopts, he or she will normally pass through five stages: awareness, interest, evaluation, trial, and finally, adoption. In turn, the stock friend strategy would influence alleviation and possible eradication of poverty among the Mwingi agro-pastoralists. 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. Turkana differentiate food sharing from livestock exchange, with livestock exchange occurring much less frequently than food sharing [8]. 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 [3],[4] and [5]. 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.

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 [7]. Social networks in Turkana are dense such that many friends are themselves friends with each other, and social relationships vary according to degrees of friendliness[8]. People in active relationships share food, exchange livestock, and engage in mutual labour and leisure. The size of a herder's social network influences his herding success [8]. 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 remained largely unrecognized and seldom quantified [2]. Thus, there was a need for an assessment of the influence of knowledge of type and numbers of livestock exchanged in stock friend's concept as a strategy in poverty alleviation among the herders.

STATEMENT OF THE PROBLEM

Although the "stock friends" strategy is known to have benefited pastoralists and agro-pastoralists in many parts of Kenya by reducing 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. But more commonly postulated is their seemingly inadequate or lack of awareness and knowledge of the concept, which seems to

have been neglected, and has thus faded away, eroding the interest of the communities. Yet the stock friend strategy demonstrates tremendous potential to rid of poverty in Ngomeni.

STUDY OBJECTIVES

The *broad objective* of the study was to investigate the influence of knowledge/understanding of type and numbers of livestock exchanged in stock friends concept 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 livestock for exchange (as dictated by their socioeconomic status), and their adoption of the strategy, which is expected to influence poverty alleviation among the communities.

Specifically, the study concentrated in assessing:

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

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

METHODOLOGY

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 0º 0' and 1º 12' south and longitude 37º 47' and 38º 57' degrees east, and has an area of 10,030.30 km^2 (GOK, 2002). As indicated in the map of the study area, Figure1, Ngomeni Division is in kitui county mwingi sub county and 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. 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.
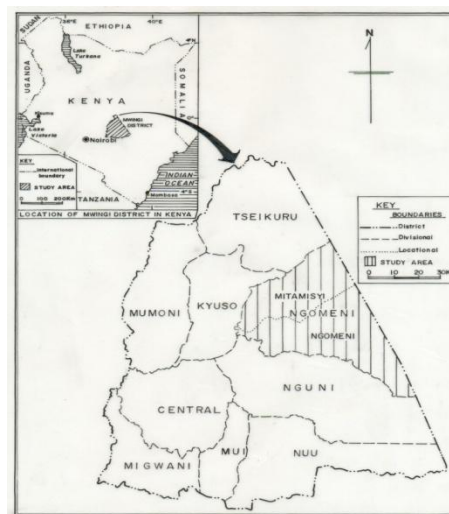

Figure 1. Location of Ngomeni Division in Mwingi District. Source. (GOK, 2002)

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.

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 relevant sources. The study population was comprised of 2,165 households in Ngomeni Division, while the Sampling Frame was constituted by all the households keeping livestock in four sub-locations randomly selected from two locations 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. 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 the each of the four sub-locations.

DATA ANALYSIS

The computer-based Statistical Package for the Social Sciences (SPSS) programme was used for the analysis. All the variables in the hypotheses statements (which are the same as those in the specific objectives) were constructed into indexes from 5 to 6 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 variable were then summed up to construct the index variables, generating continuous variables as a result, (with scores ranging from 0 to 25 or 30), warranting the use of regression analysis to determine relationships between them

RESULTS AND DISCUSSION
Respondent's characteristics and land use

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) as indicated in table 1.

Table 1: 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

The questionnaires were distributed as follows: Kavuti 59, Ndatani 59, Mitamisyi 58, and Kalwa 57, totalling to a study sample of 233 respondent households that provided a fair representation of the communities involved in the study. The average family size was 6 members and worked on their agro-pastoral land of 10 acres on average. Mostly cattle, goats and donkeys were reared for transportation of goods.

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 as indicated in Table 2.

Table 2: 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 (%)
Milking for subsistence	9.4	26.6	22.4	36.9	4.7
To solve receiver's problems	5.2	23.2	31.8	36.4	3.4
Breeding purposes	3.4	26.6	22.3	40.4	7.3
Receivers' breeding needs	3	18.9	25.8	43.7	8.6
Alleviate receivers' poverty	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

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.

An index of type and numbers of livestock for stock exchange
An index of Adequacy of type and numbers of livestock for stock exchange was constructed from 5 indicator variables, listed in Table 13. 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.

The community understands of adequacy of type and numbers of livestock exchanged
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 exchange.
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 of livestock. Most of the services or problems solved are fundamental like poverty alleviation and reduction of suffering.

The adoption of the strategy, and the influence on the poverty levels
The land size range 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 3. 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 2.3 above, but few (36.5%) 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 3. Categories in stock exchange

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

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.

The 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.

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. Therefore, 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 table 4

Table 4: Regression Coefficients (knowledge of types and numbers and adoption)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(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

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 square (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. Table 5

Table 5: coefficient of determination

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

In the same 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's knowledge of types and numbers of livestock in stock exchange strategy and their adoption of the strategy, on poverty levels.

The large β (*beta*) values imply strong associations with adoption of stock exchange strategy However, it is not normal that the variable will operate individually to affect poverty levels amongst the people. Rather, the variable operates concertedly, combining their effects on poverty levels. Logically therefore, the associations with and influences on poverty levels can be examined through the concerted influences. Therefore there is need to investigate other variables, associated with and influencing poverty apart from the degree of community knowledge of type and numbers of stock used in the exchange; and adoption of the stock exchange strategy itself.

RESULTS SUMMARY

The primary lesson learnt from the data analyses is that when the hypothesis was tested against adoption of stock exchange strategy, it associated with, and influenced adoption of the stock exchange strategy and thus concluded that;

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; Community knowledge of type and numbers of stock used in the exchange β=0.449, $R^{2=}0.255$

CONCLUSIONS

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

Adoption of the stock exchange strategy is associated with, and influences poverty levels, with a β (*beta*) value of -0.289.

RECOMMENDATIONS

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

First, there is need to inform the community about the importance of stock exchange strategy through various media, and workshops.

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.

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.

REFERENCES

1. Bollig, M. (1996). Moral economy and self-interest: Kinship, friendship and exchange among the Pokot of north West Kenya. *In kingship, networks, and*

exchange, on-Line Journal (2), 31 *Special issue.*

2. Broch –Due, V. (1999). *Remembered cattle, forgotten People: The morality of exchange and the exclusion of the Turkana Poor*. James Currey Publishers.

3. Dyson, H. R. and McCabe.J .T. (1985). *Southern Turkana nomadism : coping with an predictably varying environment Vol. 11 and 12 .*

4. Fratkin ,E (1987). *AQge sets, households and organizations of the pastoral productions: The Ariaal, Samburu and Rendille of Northern Kenya. Research in Economic Anthropology,* 8, *1-25*

5. Fratkin, E and Smith, K. (1994). *Labour, Livestock, and Land*: The organisation of pastoral production. African pastoralist systems an integrated approach. M.E. Sharpe.

6. Government of Kenya. (2002). *Mwingi District Development Plan 2002-2008.* Ministry of Finance and Planning. Government Printer, Nairobi, Kenya.

7. Gulliver, P. H. (1955). *The Family Herds*: Reutledge and Kegan Paul (International Library of Sociology and Social Reconstruction) , London.

8. Johnson, B .R. (1999). *Social networks and exchange of Turkana herders of the dry savannah*: *Ecology and Biobehavioral Response of Environment.* Oxford University Press.

9. Lauer, R. H. (1982). *Perspectives on social change*, Third edition by Allyn and Bacon, Inc., 470 Atlantic Avenue, Massachusetts 02210.

10. Leslie, P and Dyson, H. (1999). *People and Herds. .*34 *,* 1-25.

11. Mango, N., Cheng'ole, J., Kariuki, G. and Ongadi, W. (2004). Quantitative Methods for Poverty Analysis. Paper presented at KIPPRA-cornell SAGA workshop,on 11th march 2004. Grand Regency Hotel. Nairobi Kenya.

12. Widstrand, C. G. (1975). The rationale of nomads economy, *Ambio 4, 4,146-153*