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HOUSEHOLD CATEGORIES AND LIVELIHOOD CHOICES IN DRYLAND AREAS IN KENYA: INSIGHTS FOR DEVELOPMENT MANAGEMENT AND POLICY.

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ABSTRACT

This study investigated household livelihood options in dryland areas. In order to champion livelihoods in these areas, various government and non-governmental development agencies are involved in diverse interventions. The study objective was to categorise and characterise households, identify household livelihood choices, and ascertain household development intervention priorities in dryland areas. The study was carried out in the semi-arid area of *Buuri* and *Abothuguchi* West divisions, also called the Northern Grazing Area [NGA], Meru Central district in Kenya. Quantitative and qualitative techniques were used to collect primary and secondary data from 68 households and development agencies working in the area. Data with quantifiable factors was analysed by statistical analysis using SPSS. Qualitative data was analysed using content and narrative analysis techniques. Results established three household categories: Rich/*Gatonga*[7.4%], Non-Rich/*Nkia*[42.6%], and Poor/*Nkia Mukeu*[50%] households in the study area. The results further found four common household livelihood choices including agricultural(Crops and livestock)[83.8%]; Non-farm (self-employment)[39.7%]; Non-agricultural wage labour (formal and informal employment)[26.5%]; and social network(relief food, borrowing, begging and remittances)[84.0%] activities. Results also show preferred development interventions at household, community and external institution levels in the short, medium and long terms. In the short, improvement of livestock production [25%] was preferred at household level, while water infrastructure development was both prioritised at community level [43%], and external institution level [49%]. In the medium term, preferred intervention at household level was also livestock improvement [21%], small business development [29%] at community level, and water infrastructure development [28%]. Finally, results too show that in the long term, households prefer small business development at household [28%] and community [21%] levels, while at external institutional level; livestock production improvement [22%] in the long term was preferred. The study recommends detailed baseline studies that analyse household: categories and characteristics; livelihood choices; and intervention priorities as basis for the formulation of dryland poverty reduction strategies. In policy terms, the study calls for partnerships in the implementation of dryland development programmes to avoid effort duplication. In broad terms, three principles are recommended for ASAL development i.e. Active involvement of the local people and their practices; Strengthening of local resources; and Promotion of coherence through the establishment of linkages between endogenous and exogenous resources.

Keywords

Arid and Semi-arid Lands; ASALs; Coherence; Communities; Baseline Studies; Drylands; Development Interventions, Management, and Policy; External Institutions; Government; Household Categories; Household Livelihoods; Kenya; Livelihood Choices; Meru Central District; NGOs; Poverty Alleviation Strategies; Rural Household.

1. Introduction

Kenya lies between 34° and 41°45′ east and between 5°20′ and 4°45′ south with an area of 582,646 Km^2 (FAO 1993) and a population estimated at 28.9 million[1] (Kenya Economic Survey, 2000). Over 70% of the population is concentrated in about 10% of the land area in the high land regions. Increasing population is placing pressures on resources in these areas causing migration to lower potential agricultural lands (FAO, 1993). The country is broadly divided into seven agro ecological zones (AEZs), based on rainfall and mean annual temperatures. Only 13% of land in Kenya is classified as high potential to medium with an equivalent area being potentially arable but subject to periods of droughts (FAO 1993:2). The remaining area is arid and semi-arid lands (ASALs). Other natural resources to sustain and expand economic activities are limited. Tourism has however, always represented a high income market, but it is evident that Kenya needs to further exploit its most valuable natural resource asset i.e. agricultural land (FAO 1993). Although the share of the Gross Domestic Product (GDP) has declined, agriculture still continues to dominate the Kenyan economy and accounts for about 1/3rd of the total GDP and provides a living for over 80% of the population.

One of the most critical challenges facing Kenya at the moment is reduction of poverty (Kenya Economic Survey, 2000). Poverty assessment has been based on norms and identification of minimum requirements for food and non-food expenditures. As at 1997, the food poverty line was KShs 927.1[2] per month per adult equivalent for rural areas. In rural areas, the proportion of poor households is nearly equal for men and women, 52.3 and 54.1 percent respectively. Hence female headed households are not more prone to poverty than male headed households although this does not mean both men and women have equal access to resources like education, land among others (Kenya Economic Survey, 2000:9).

1.2 The Research Area - Northern Grazing Area (NGA)

Before early 20th century, the study area was used for grazing purposes by the *Maasai* and *Ndorobo* pastoralists. In the colonial period, the area was designated Northern Grazing Area (NGA) and used by agro-pastoralists from the nearby highlands for grazing. After the World War II, the boundaries of the NGA were pushed to the north by formal and informal settlement. In the late 1960's, the government allocated much of the NGA for settlement. A new generation of people, however, has arrived and settled in the area since 1984. Land tenure is secure in *Ntumburi* area where farmers have tittle deeds but adjudication is on-going in Rwarera location where informal settlement still exists. The area is on the leeward side of Mt. Kenya and encompasses parts of the following Agro ecological zones: IV and V that range in altitude from 1300-1800 above sea level. The mean annual rainfall varies from 500 to 800mm in March to May and October to January.

Water shortage is a key constraint and is of high priority for the population. 57 percent of houses have no water supply or water facility (MDFP, Annual report 1999:21). Soil erosion is a common problem and the scale of risk became more evident after the *El nino* rains of 1997-8 that caused major gullies and destroyed roads. Wind erosion is a serious and wide spread problem than water erosion. Deforestation and over grazing on poor erodible soils in some lower parts of the study area has caused gully erosion. Most of the cultivated area is flat or gentle sloping and as more people settle in the area, cultivation has begun on the steep hill sides enhancing the danger of soil erosion as was experienced during the 1997/8 *El Nino* rains.

NGA settlers originated from highly productive coffee and tea growing zones with population densities exceed-

[1] Provisional results of the 1999 census.
[2] 1 US Dollar = 74 Kenya Shillings (July, 2000).

ing 400 persons per Km^2. The area now has a population of 3,500 households (MDFP, Annual Report, 1999). A number of development local and external institutions are active in the area. They include Ministry of Agriculture (Government of Kenya); Catholic Diocese (Faith Based Organization), Meru Dryland Farming Project-MDFP (SoS Sahel International UK); Lewa Downs Wildlife Conservancy(Private organization), The European Community for Agricultural Training Project CEFA(International NGO); The Mutethia Ntumburi Water project(Community Based Organization); among others.

1.3 Development Interventions

Development agencies nowadays apply participatory rural appraisal (PRA) techniques to identify and plan rural development activities the participatory way. However, an in-depth analysis of the local conditions captured at this stage is preliminary as PRA in itself is limited in giving a detailed understanding of local societal dynamics and priorities. Pottier (1993:16) concurs with these views, stating that this oversight leads to failure of projects. In fact, according to report by Pan-African Institute for Development (PAID) (1981:14 cited in Pottier 1993:16), it is emphatic that project objectives have rarely been achieved and performance hampered. This is because of absence of detailed analysis of initial conditions relating to the targeted population, for example: agro ecological, economic and sociological relations. Shepherd (1998:201) also argues that field workers trained briefly in PRA may use techniques ritualistically without having the skill or organizational flexibility to carry out a thorough analysis of information collected.

Target populations are made up of heterogeneous groups, households and individuals; and these units could organize themselves in various ways to appropriate, reject or modify the intervention strategies and resources introduced by external interventions (Pottier 1993:27). Hence it is important to understand the societal dynamics of area in question before introducing interventions. To do this, Curtis (1985:113) cited in Pottier (1993:19) suggests: there is need to understand forms of local organizations (old and new) that can be used to facilitate introduction and acceptance of technically sound interventions. Care must be taken however, and note that rural social differentiation is challenging for outsiders to understand social differences, peasant rationality, interests and perception of risk(Shepherd 1998:190).

Rural development is an experimental process and therefore continued recognition of new ideas is important for successful interventions. Consequently as Shepherd (1998:180) reports: centrally produced, packaged technologies do not work in much of the world. Local contexts are infinitely varied and can only be known by the local people. In developing countries, Readerson & Vosti (1992:389) discern that very little empirical work on impact of policies on the households' natural resources base has been done. There is the need therefore to generate knowledge that may be useful for adaptive management and current knowledge oriented policy formulation.

1.4 Study Objectives

Drylands (ASALs) are characterized into various zones according to rainfall pattern, amounts, etc. The Northern Grazing Area (NGA) of Meru Central District is semi-arid characterized with rainfall of between 300-800mm per year. Inter annual rainfall variability of 25-50% further distinguishes the area from high potential areas (Dixon et al 1989:3). Populations in the NGA are therefore frequently exposed to harsh conditions, often leads households to make precarious livelihood choices. Consequently, this article presents results of descriptive study, whose overall objective was to categorize and characterize household types and livelihood choices in the semi-arid north region of Meru Central District in Kenya. Specific study objectives were to:

a) Categorize and characterize households in *Buuri* and *Abithoguchi* West Divisions;
b) Determine household category livelihood choices in *Buuri* and *Abithoguchi* West Divisions;
c) Ascertain short, medium, and long term development intervention priorities for households in *Buuri* and *Abithoguchi* West Divisions.

2. Literature Review

2.1. Drylands

About 1/3rd of the world's land surface area is formed of drylands that support a population of over 850 million (Dixon *et al* 1989). However, over the past two decades, it has become clear that many dryland areas are exhibiting symptoms of over use and inappropriate management of resources. This has led to the destruction of the biological and physical resources of the land hence enhancing further risk to the communities. In addition, Scoones *et al* (1996:3) states that risks in drylands are caused by the variability in rainfall, impacts of crop pests and diseases or soil fertility, all which lead to food shortages.

A large number of people depend on drylands for their livelihood and there is need for sound practices that will protect the resources. Apart from the micro variables, risks in drylands are also caused by macro factors e.g. national economic policies, assurance of security by the state and so forth, all of which cause hazards to livelihoods. To understand the risks, contexts beyond individuals or households need to be appreciated i.e. social relations and economic policies that affect for example price levels, market functioning, infrastructure and service support levels(Pottier, 1993). Important also are the influence of external actors that shape and affect/influence dryland livelihoods options i.e. government extension workers, development projects or religious leaders.

2.2. Dryland Livelihood Choices

Drylands are commonly perceived as poor, backward, drought prone and environmentally prone. However, these areas are inhabited by people. When there are adequate rains in these areas, the environment is changed and there is green grass, cropping and along the hill sides are covered with green trees (Scoones et al 1996:18). Obtaining a livelihood in dryland areas has daily uncertainty and occurrence of risk. People in these areas, have to 'cope' with the circumstances. In so doing they make choice to meet their needs. A choice refers to a situation where households or individuals have room to maneuver, in which options exist and in which people are adapting continuously to changing internal and external circumstances (Dietz *et al* 1992 cited in van Andel 1998: 12).

Firstly, they engage in farming that exhibit a lot of pitfalls including variability in season quality leading to dramatic crop output fluctuations (Scoones *et al* 1996:27). Food security only becomes reliable through increased crop storage and emphasis on opportunistic dryland cropping concentrating on small grains i.e. sorghum and millet. The risk of crop failure is also offset by ownership of livestock assets and opportunities for local exchange in risky periods. Secondly risks are also managed through livelihoods mediation by a range of networks, institutions, and organizations (Scoones *et al* 1996:34). Therefore, individuals are not alone in their pursuit of livelihoods; they are part of the social fabric making up the rural society.

The third livelihood activity households engage in dryland areas are income generating in nature and used to meet needs of their families. Reardon (1997:737) argues that the share of non-farm income in the farm households is substantial. Non-farm income is generated from local non-farm employment, local non-farm self-employment and migration income. In general, non-farm activities in the rural areas comprise of: Employment in rural non-farm labour market e.g. casual labour at road construction sites in the rural area; Self-employment

in local non-farm sector e.g. local family businesses; Employment in migration labour e.g. working in cities; and Employment in farm labour market e.g. on irrigation farms. In dryland conditions though, due to high environmental variability household incomes tend to unreliable. The fourth survival livelihood strategy for dryland households is the supply of migrant labour. Migrant labour economies rely on supply of casual labour in various sectors e.g. mining, towns and on commercial farms. Lower wages, poor conditions and insecurity of this employment attracts mostly men during times of hardships like drought (Scoones *et al* 1996: 37).

As a fifth choice, households engage in self-employment to survive. Self-employment is the main manifestation of rural non-farm economy in Africa (Reardon 1997: 740). Majority of the small businesses start with one person and are run on family basis, mainly as a survival option. Finally, households also depend on extension services provided by the state to survive. However, extension services do not often consider the special needs of dryland communities. It generally retains focus on high input, technological solutions to farming problems, tending to underestimate the problems of risk prone, resource poor farmers (Scoones *et al* 1996:39).

2.3. The Rural Household

From the literature, it seems there is no general consensus on the definition of a household. Households in all diversity show the different ways in which kinship is organized (Van Driel, 1994). FAO (1992) defines a household as a socio economic unit consisting of individuals who live together with an aim of basically providing themselves with food or inessentials for a living. Ellis (1988:12) describes households as peasants with access to their means of livelihood in land, utilizing mainly family labour in farm production and always located in a larger economic system. Senauer *et al* (1988) however consider the income aspect and define a household as "a group of individuals who reside together, pull all or most of their income and basically share the same food supply.

Studies have shown that rural households don't always have same interests, needs, access to natural resources, options for obtaining a livelihood and so forth (van Andel 1998:15) and so individuals in a given household necessarily do not have common interests. Therefore, the distinction between household types and their individual members is important when considering factors like access to resources, livelihood, the production and reproductive division of labour, living standards and interests (Guyer 1980, Berne's 1983, Palmer 1985, Guyer 1986, Moock 1986 cited in van Andel, 1998:16). Rural households often are referred to as farmers. However studies now show that farmers are not only engaged in agricultural activities because their livelihoods increasingly entail migratory work, petty trade and other forms of off farm and on farm non-agricultural activities (Hebinck and van der Ploeg , 1997).

For purposes of this study, a household is a group of people living together for purposes of satisfying their consumption and other welfare needs, with relationships with other members living out of the household and relatives living within or elsewhere.

2.4 Livelihood Perspectives

A *livelihood* comprises of capabilities, assets and activities/strategies required for a means of living (Farrington *et al* 1999:1). A *livelihood is sustainable* if it can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets, while not undermining natural resources base (Carney, 1998:4). According to Carney (1998), every household has access to some form of resources/assets on which it derives a living. Understanding the level and quality of these assets gives a clearer picture of household resource base. Carney

(1998:7) has identified five types that are endowed by households. These include a) *Physical Assets* - farm size, livestock ownership, farming enterprises, agricultural implements and shelter; b) *Human Assets* - household size, literacy levels, level of skills, employment level, etc.; c) *Financial assets* - income portfolio, savings, credit supply remittances and pensions; d) *Social capital* - percentage of income from remittances, gifts and transfers, group participation, reliance on support networks and access to wider institutions of society; and e) *Natural capital* - soil fertility, water availability, tenure arrangements, access to common property, and climate patterns.

Households depend on resources on which they build up and/or draw on. Based on this farmers pursue multiple activities and outcomes and this may depend on farming, selling their labour locally or migration (Farrington *et al* 1999: 2). To understand livelihood choices, focus on household as a unit of analysis is important because households are key targets of policy and the driving force of success or failure to achieve development policy objectives at the aggregate level (Reardon & Vosti 1992:380).

3. Method

3.1. Research Design

The assessment of household categories, livelihood choices and development intervention perceptions need to be undertaken from a holistic and people focused perspectives. This recognizes the socio-economic nature of livelihood choices by the households. To be able to acquire and identify information to answer the research objectives, unit of analysis included individuals, households, groups, and development organizations. The study area had diversified agro ecological zones with two extremes, the drier lower part and upper less dry zone. To underscore the diversity of household categories and livelihood choices, an in-depth study of the two extremes was carried out at community level. Before field work commenced, initial meetings were held with district/divisional policy makers (government ministries, NGOs, etc.) to explain the purpose of the research. This was followed by preliminary vists to the study area to familiarize with the general conditions and development interventions. Detailed discussions were held with key persons in development organizations and communities in the area. This resulted into the identification of two villages for survey. Data was collected with the support of two research assistants. Finally, a stakeholder workshop was held to share the preliminary findings of the research.

3.2. Research Methodology

The methodology used for this study involved both qualitative and quantitative research techniques. The quantitative component involved collection of socio-economic data at household level using a standard questionnaire. The qualitative component concentrated on understanding people's constructs i.e. things people believe exist based on their experience and not directly measurable. Data was collected through i) secondary data review (annual reports, project reports, field evaluation reports, including government documents like the Central Bureau of Statistics and Line Ministries); ii) Open ended interviews with Key Informants (opinion leaders, government officers, NGO staff among others); iii) Focused group discussions (FGDs); and iv) Farm Household Survey through the administration of questionnaire that had been pilot tested. At the end of the research period a *Stakeholder Workshop* was held to check the collected data, presented preliminary data to the stakeholders and collected more data in areas where inadequate information had not been gathered.

3.2. 1. Sample and Sampling Procedure

Selection of Study Area

Mugae sub location (*in Buuri* division) and *Ntumburi* sub location (in *Abothuguchi* division) in Meru Central District were chosen for the study due to a number of factors. First, the area represented the former northern grazing area (NGA) used for grazing purposes and settled in by migrant farmers from the high potential areas of the district. Secondly, the area frequently experienced drought incidents and is classified as semi-arid and exhibits conditions for ideal drylands. Thirdly, although national policy makers consider Meru central district as high potential agriculturally and self-sufficient in food production, the area exhibits completely different climatic conditions with problematic agricultural activities that expose communities to vulnerable situations. Lastly, no documented similar study has been carried in the area.

Sampling Procedure

A total 80 households were randomly sampled from *Ntumburi* and *Mugae* sub locations. Based on information from the Provincial Administration, agencies working in the area e.g. Ministry of Agriculture (MoA), Non-Governmental Organizations (NGOs) and Faith Based Organizations (FBOs) and key informants, *Thiira* Village[3] (154 households) in *Ntumburi* sub location was selected for the survey. By contrast, village units in *Mugae* sub location reportedly had fewer households. Therefore, nine villages/units[4] were selected with a total of 97 households for the survey. The two areas (*Ntumburi* and *Mugae*) for the survey were also selected because physically, they present contrasting characteristics. For instance, *Ntumburi* had more or else permanent settlement and bordered areas that were agriculturally medium to high potential, whereas *Mugae* bordered arid and highly volatile Isiolo district due to tribal conflicts between pastoral communities (*Somali* and *Borana* sub tribes). The sample frame was lists of resident households in *Ntumburi* and *Mugae* sub locations prepared by the local assistant chiefs/administrators. From the lists households for interviews were selected randomly. In *Ntumburi*, every after 4th household was selected from the list of 154 provided but in *Mugae* every 3rd household was selected from list of 97 households. 40 households were selected from *Ntumburi* and another 40 from *Mugae* for the interviews. Only 68 households however, were successfully interviewed. In *Mugae* sub location 32 households were interviewed while in *Ntumburi* sub location, 36 households interviewed. 12 households could not be interviewed because they were absent[5]. Participants for key informant interviews (KIIs) and FGDs were purposely selected.

4. Data Analysis

Since the researcher was the main gatherer and recorder of data, data analysis was an on-going process starting from the field. In terms of qualitative factors, summaries were compiled from the KIIs, FGDs and household interviews to describe patterns of household categories and livelihood choices. Content analysis technique was used to analyse documented information. For the quantifiable factors from household survey interviews, statistical analysis was performed using SPSS. It involved compiling frequency distributions, calculating means and tabulations. An independent T-Test was carried out to test statistical significance at $p<0.05$. Data collected was also checked through observations and during the Stakeholder Workshop. To test for validity of collected data, different methods were used to answer similar questions.

[3] The most import a characteristic of a village also locally called unit is the headman, an official link to the provincial administration.
[4] Mugae units were small, possibly because of the recent and continuing in migration than Ntumburi. Also land tenure system was incomplete in Mugae hence administrative structures in the sub location are still weak.
[5] Some households had all the members away searching for livelihoods e.g. casual labour and other had migrated to other areas due to drought that was being experienced at the time of the research.

5. Results and Discussion

5.1. Household Categories

A multiple criterion categorization based on household entitlements identified through focused group discussions (FGDs) was used (see table 5.1) to identify five household categories that included:

a. Richest (*Mwitonga*)
b. Rich (*Gatonga*)
c. Non Rich (*Nkia*)
d. Poor (*Nkia Mukeu*)
e. Very poor (*Tebe*)

Table 5. 1 FGD Socio Economic Indicators for Household Categories

Indicator	Richest *(Mwitonga)*	Rich *(Gatonga)*	Non Rich *(Nkia)*	Poor *(Nkia Mukeu)*	Very Poor *(Tebe)*
Housing	Stone House	Timber house	Off cut houses	Mud houses	Grass thatched
Feeding	Eat meat daily	Eat meat occasionally	Eat meat once per month	Eat meat by chance	No meat
Clothing	Expensive suits	Expensive suits	Half suits	Wear *Mutumba*	Depend on gifts
Livestock	> 10 cattle > 20 shoats	3 cattle 5 shoats	2 cattle 3 small stock	1 cow 2 goats	Nothing
Land (acres)	> 40	< 30	12-15	2-3	Squatter
Education (of children)	Expensive schools	Private & boarding schools	Local primary schools	No education	No education
Children	1-3	4-5	6-9	10-12	15
Transport	Vehicle	Ox cart	Ox cart	Bicycle	Nil
Business	Has business	Kiosk	None	None	None
Contributions	Assist others	Assist others	Unable to assist	Unable to assist	Unable to assist
Employing	Employ others	Employ others	Not employ	Not employ	Not employ
Employment	Govt employee	Not employed	Not employed	Not employed	Not employed

Source: FGDs Results, 2000.

The categorization indicators (table 5.1) discussed during FGDs included household type of housing; feeding habits; clothing; livestock types and numbers; land and land size; education for the children; mode of transport; contributions for common causes; type of business; off farm employment; and ability to employ others. The indicators were used to define different household types in the study area. These criteria factors were found comprehensive enough to represent all the five household asset entitlements (Carney, 1998) as follows:

i) *Physical entitlements*: housing, livestock (cattle, sheep and goats), land and transportation facilities;
ii) *Human entitlements*: household size, education, consumption/feeding and clothing;
iii) *Financial entitlements*: business/non-farm income and off farm employment;
iv) *Social entitlements*: contributions and ability to assist others; and
v) *Natural entitlements*: land.

Based on the six abridged (table 5.1) factors (housing status; number of cattle, sheep and goats; household size, level on non-farm and employment income), survey data collected was analyzed to identify household groups in the sample. First, the household type categories were ranked using a *Likert* scale[6], by assigning the richest (*Mwitonga*) highest score of 5 and the very poor (*Tebe*) with score 1. Secondly, the six selected variables were ranked the same way as follows:

[6] It assumes that the variables in question measure the nominal concept i.e. poverty are highly correlated which is not always the case. For example, is not always true that a household with less number of livestock is poor.

- Housing status: stone house (5 score) through grass thatched house(1 score);
- Number of cattle: 7-10 cattle(5score) through zero cattle (1 score);
- Number of sheep and goats: 15-20 (5score) through zero (1score);
- Annual income from non-farm activities/business: > 25,000KShs (5 score) through zero(score 1);
- Annual employment (formal & informal) income: >151,000 KShs (5 score) through zero (score 1); and
- Household size: 1-5 members (5 score) through ≥15 members (score 1).

The average score for each household category was determined and based on the household type ranking above, each household was classified and the percentage representation of household categories ascertained, see table 5.2.

Table 5. 2 Household Categories, Frequency and Means of Variables

	Mwitonga	***Gatonga***	***Nkia***	***Nkia Mukeu***	***Tebe***
No. of Cases	-	5(7.4%)	29(42.6%)	34(50%)	-
Variables					
Housing	-	4.0(0.0)	3.6(0.49)	2.9(0.76)	-
No. of cattle	-	4.6(0.55)	3.3(1.16)	1.3(0.63)	-
No. of small stocks	-	4.0(0.71)	2.2(1.07)	1.4(0.82)	-
Annual NFI*	-	2.2(1.64)	1.6(1.29)	1.8(1.10)	-
Annual employment income	-	2.0(1.41)	1.5(1.02)	1.4(0.79)	-
Household size	-	4.6(0.55)	4.2(0.87)	3.9(1.01)	-

* Non-Farm Income
Figures in parenthesis are standard deviations around the mean.
Source: Survey results, 2000.

From table 5.2, results show that the sample household had three types of households i.e. the rich *Gatonga* (7.4%), non-rich *Nkia* (42.6%) and the poor *Nkia Mukeu* (34%). There was no representative for the richest *Mwitonga* andvery poor *Tebe* categories. Two possible explanations for this. In the first place, the households that have migrated into the area are from high potential areas and this may have influenced their perception of the richest household resulting in criteria that does not capture the reality locally. Secondly, the household size variable perceived by FGD partcipants may have had different implications on the scores. There is a general preference in the area for smaller household sizes. This may have led to high score in the household size variable thereby upgrading the status of most households to the extent that the *Tebe* category was not captured. This is in line with local believe that a smaller family results in less stress on the available resources. Mrs Kimathi(not her real name), of Ntumburi said*:*

" I had to stop having children after the first two because we realised that bigger families were being affected more during drought than the smaller ones."

5.1.1 Characteristics of Household Categories

For purposes of livelihood choice analysis, the above household classification was appropriate but care should be taken for future household classifications in the area. Results in table 5.3 show household characteristics for the different household types identified in the study area.

Table 5.3 Household Category Characteristics

Indicators	*Gatonga*	*Nkia*	*Nkia Mukeu*
Average household head age	50.4(10.4)	44.5(11.9)	49.7(17.3)
Average household size	5(1.0)	5.8(2.4)	6.6(3.0)
Average household male members	3.2(1.3)	3.2(2.0)	3.4(1.9)
Average household female members	1.8(0.45)	2.6(1.2)	3.2(2.0)
Percent household heads			
Female	0.0	20.7	23.5
Male	100	79.3	76.5
% household head education			
Primary level	40	58.6	70.6
Secondary level	60	24.1	2.9
Ethnicity			
% *Imenti*	100	89.6	67.6
% *Tigania*	0.0	3.4	23.5
% Other	0.0	6.8	8.8

Figures in parenthesis are standard deviations around the mean.
Source: Survey Results, 2000.

a) Rich/*Gatonga* Household

Results (table 5.3) show that, in this category, average household head age was 50 with age range from 40 to 60 years who were all males (100%). In terms of education attainment, most (60%) of the household heads had secondary education, 40% primary education and there were no illiterate members. The family size varied between 4 and 6, hence compared to other households; the family resources were less strained. With a male: female ratio was 3:2, male household members of this group were more than women. Household heads from this group all (100%) originated from the *Imenti* sub tribe.

b) Non-Rich/*Nkia* Household

In table 5.3, results show that family size in this group of households ranged between 4 and 8 members, higher than the *Gatonga* group. Family head age ranged from 33 to 57, so we have younger families compared to the *Gatonga* families. Household head education levels were 57% primary and 24% secondary education, and 19% had no formal education. In this household category, compared to the Gatonga group, 20% of household heads were female and 80% were males. Average household size was also higher (6 members) but the male: female ratio was 1. Also, while 90% of household heads in the group were of *Imenti* ethnicity, 3% were from the *Tigania* sub tribe and 7% from other tribes.

c) Poor/*Nkia Mukeu* Households

The third and last category is the *Nkia Mukeu* households. Results in table 5.3 indicate that average household head age was 50 years like the *Gatonga* group, but with a higher range from 32 to 67 years. This means we had a higher young and older heads of households in this group. They too had larger families ranging from 4 to 9 members than the former group, but with a similar male: female ratio of 3:3. In terms of education, this group had more illiterate and primary level education household head members. While 68% were educated up to primary school level, only 3% were educated to the secondary level of education, and over 25% were illiterate.

Compared to the other household categories, this group had the highest female headed households (24%) compared to 20% (*Nkia*) and 0% for the *Gatonga* households. Like the above group, this category household heads were represented in all the ethnic groups, but at higher levels. While representation from the *Imenti* ethnicity was 68%, the *Tigania* sub group was 23% and 9% from other ethnic groups.

5.2 Household Livelihood Choices

The households in the study area engage in various livelihood activities that involve adjustment of household decisions to pursue livelihood objectives that suit individual situations, see table 5.4.

Table 5. 4 Household Livelihood Options

Livelihood Activities	*Frequency*	*Percent*
Agricultural Activities-Crop & Livestock	57	83.8
Off farm activities	27	39.7
Wage labour	18	26.5
Social Networks	51	75.0
Other	4	5.9

Source: Survey Results, 2000.

Results in table 5.4 show that the study area had four main household livelihood choices: agricultural activities (83.8%), non-farm activities (40%), wage labour (27%), and social network related activities (75%).

5.2.1 Agricultural Activities

Results in table 5.5 Show that 99% of ***Gatonga* households** engage in crop activities and 71% are into livestock production. **Cropping** activities entail growing of maize, beans and Irish potatoes that are important both for food security and income generation. These households have adequate land and manage to diversify agricultural activities. All the *Gatongas* were located in *Ntumburi* location, and involved in the planting of maize and beans of the *Katumani* and *Mutemania* varieties respectively that are drought resistant. Other drought resistant crops planted are black beans, pigeon peas and sorghum. **Livestock** is important as well for these households especially in the Ntumburi area where security is more guaranteed than the lower areas. Different types and number of livestock is kept: cattle, small stocks, poultry and donkeys. Due to the harsh conditions and disease prevalence, local livestock breeds are preferred, although crossbreeds are kept to boost milk production.

Table 5.5 Household Category Agricultural Activities

Agricultural Activities	*Gatonga(n=5)* *%*	*Nkia(n=29)* *%*	*Nkia Mukeu(n=34)* *%*
Crop activities	99.4	47.9	38.2
Livestock activities	71	44.8	19

Source: Survey Results, 2000.

***Nkia* households** compared to the *Gatongas* are less entitled households. They are involved in a variety of agricultural activities (Crop, 48%; livestock, 45%), mainly on subsistence basis. They solely depend on family labour for their farm operations. They all grow maize and beans but other **crops grown** include Irish potatoes, black beans, pigeon peas and sorghum. *Nkia* households keep fewer **livestock** that include cattle, poultry and small stocks. Local livestock breeds are kept for draft power, milk sale for income and consumption. The main challenge for livestock production is insecurity due to cattle rustling compared to the *Gatongas*. Marketing of farm produce is an inherent problem too due the poor transport infrastructure. People, especially women, carry

on their backs farm produce to market places or roadsides for sale.

The ***Nkia Mukeu*** **household** land resource is more limited. They solely depend on family labour for farm production. Table 5.5 shows 38% of these households are involved in cropping activities and 19% livestock. They plant maize and beans but at lower scales than the *Gatongas* and *Nkia*. Other important crops include drought resistant crops like sorghum, black beans, pigeon peas, cowpeas, and chickpeas. The *Nkia* survive on subsistence farming and use traditional methods like smoking and application of ash for preservation of produce. Opportunities for livestock production are very limited too. They only manage to keep a few small stocks with more emphasis on poultry for income and local consumption.

5.2.2 Non-Farm Activities

In addition to agricultural activities, households in the study area also engage in non-farm activities to raise income and cope with the frequent crop failures. Non-farm activities include engaging in small businesses, petty trade, grain milling, sale of firewood and charcoal, beverages among others, see table 5.6.

Table 5.6 Household Non-Farm Activities

Non-farm Activities	***Gatonga(n=5)*** ***%***	***Nkia(n=29)*** ***%***	***Nkia Mukeu(n=34)*** ***%***
Non-farm activities	19	13	26
Non Agricultural Wage labour activities	19	17	20

Source: Survey Results, 2000.

The ***Gatonga*** **households**, results in table 5.5 show, 19% of them engage in non-farm activities. Although they are actively involved in agricultural activities locally, they generate income from self-employment activities like running small businesses (*kiosks*) at the local and neighboring markets i.e. Ntugi, Kiirua, Matunda and other places along the Meru – Isiolo road. They are also involved in businesses like: selling second hand clothes, vegetables and retail shops, including service businesses like hotels/canteens and beer dens.

The proportion of ***Nkia*** **households** who engage in non-farm activities is 13% as shown in table 5.5. Although they have land for agriculture, it is limited in size and they have problems acquiring farm inputs on time. Most women in this category engage in petty businesses like selling honey, cooked foodstuffs e.g. porridge and tea and ripe bananas at public meetings. They are also involved in local manufacturing processes e.g. brewing and sawing ropes, etc. for sale to generate income in addition to cutting of trees and burning charcoal for sale. Women and children are involved in searching for firewood for use at home and some is sold to the *Gatonga* households and local hotels for generation of income or exchange for food.

The proportion of the ***Nkia Mukeu*** **household** category that engage in non-farm activities is highest than the above two categories at 26%. In *Mugae*, these households depend on picking and selling of Acacia pods (*nchagar*a) during times of severe droughts. Like the *Nkia*, they are involved in petty trade of selling cooked foodstuffs and honey at markets and public gatherings. Most of the time, their children fail to go to school and the boys join their fathers to the quarries and crush stones/ballast for selling to generate income. The girls join their mothers to fetch firewood and n*chagara* for sale. One woman had this to say

> *"Sometimes I spend a whole day with her daughters to collect nchagara that earns us KShs 100.00, purchase a packet of maize flour and vegetables/sukuma wiki that is enough for a day's meal!"*

The women also process and sell illegal brew, made of millet, honey and yeast, locally called *karobo* and also

changaa.

5.2.3 Non Agricultural Wage Labour

During hard and difficult times, decisions for appropriate adjustments in the households are necessary. When rains fail and there is inadequate food supply, households intensify their effort and widen income sources through the hiring of non-agricultural wage labour, see table 5.5.

In the sample, results in table 5.5 show that 19% of ***Gatonga* household** category earns a living through formal or casual employment. The *Gatonga* households with better education are in a better position to seek formal employment in the civil service or the private sector compared to the less educated counterparts. Some are employed at local organizations that include Lewa downs Conservancy, Rangeland Hotel, NGOs and government departments.

The ***Nkia* households** are most affected with frequent crop failures due to drought. Table 5.5 shows that 17% of sampled respondents provide non-agricultural labour to earn a living. Some are employed locally in low paying jobs as watchmen/guards, cooks and other low skilled jobs. The curio shops that attract tourists along the Meru-Isiolo road offer casual employment opportunities for the local people e.g. cleaning and fetching of water on bicycles. Employment at the irrigation plots is also an important livelihood for the *Mugae Nkia* households where they seek casual labour at neighboring Mutunyi Irrigation Scheme for jobs that include weeding, harvesting and planting. They are also employed to clear bushes and stones/boulders in preparation for ploughing in the virgin land areas of the *Gatongas*.

Households for the ***Nkia Mukeu*** (20%) offer the highest proportion of labour for wages. They also provide casual labour on the large farms and irrigation plots. On large farms, they are hired to look after livestock and provide labour for weeding, planting, harvesting and spraying. The men are hired to develop and mend fences and as casuals at construction sites. Young teenage boys from these households commonly loiter along the Meru - Isiolo road, filling up the damaged sections of the roads (potholes). In return, they solicit payments from the public service vehicles and tour vans drivers.

5.2.4 Social Networks

Table 5.4 shows that 75% of sampled households dependent on social new works to fall back on when their situation is intolerable. Table 5.7 shows dependence on social networks by the different household categories.

Table 5.7 Household Social Networks

Social Network Activities	***Gatonga(n=5)*** ***%***	***Nkia(n=29)*** ***%***	***Nkia Mukeu(n=34)*** ***%***
Relief food	0	37.9	38.2
Borrow from relatives	40	44.8	55.9
Beg from relatives	40	41.4	58.8
Remittances	40	3.4	11.8
Pension	0	3.4	5.9
Labour exchange	0	10.3	0.0
Self-help group activities	100	82.8	70.6

Source: Survey Results, 2000.

Results in table 5.7 show that the ***Gatonga* households** do not depend on relief food during hard times. They are

mostly rely on borrowing from relatives (40%), begging (40%) and remittances (40%), see table 5.7. The place of origin has an influence on the kind of friends and connections the *Gatongas* have. Because of their entitlements, they are regularly sought out by their relatives for assistance for food, finance and clothing. The relatives too reciprocate when the *Gatongas* need support in times of distress, and as results indicate, 40% *Gatonga* households depend on relatives for assistance in times of hardship. The *Gatonga* household category is a more progressive group. They often get out of their way to seek for technical advice/services from social service providers like the Ministry of Agriculture, among others. Institutions NGOs require beneficiaries to organize themselves into groups as a requirement for their intervention. This may explain why all sampled *Gatongas* reported to be members of self-helps (table, 5.7) in the area.

Table 5.7 also shows that about 45% and 41% ***Nkia* households** borrow and seek assistance from relatives from their area of origin respectively. During peak periods, *Nkia* households reciprocate by moving back to places of origin and provide labour on tea, coffee and potato farms. In return, they are paid in kind or cash, locally referred to as *ubosho*[7]. Since *Nkia* households are more vulnerable compared to the *Gatongas*, relief food from organizations in the area is important, in addition to support from labour exchange and participation in self-help group activities. Over 80% of the sampled households reported to depend on self-help group connections during hard times.

For the ***Nkia Mukeu* households**, external agencies and support from relatives are very important for their survival. Results in table 5.7 show 59% of this category survive by begging from relatives, 56% by borrowing from relatives, and 38% rely on relief food supply by external agencies. Like the other household categories, over 70% of respondents reported to depend on self-help group support during difficult times. One female farmer asserted

> *"For us, we have nobody to depend on other than the government and the NGOs that bring planting material to enable us plant our crops early enough".*

The *Nkia Mukeu* households are hard hit during drought. Some respond by stopping their children from going to school to join parents in seeking for livelihood opportunities. In the event the situation worsens, the wife and the children may be repatriated to their original homes to stay there till the situation improves. In some cases, the whole family may migrate temporarily and come back when the situation stabilizes i.e. rains come. This possibly explains their higher perception (59%) for assistance from relatives, see table 5.7.

5.4 Household Perspectives on Development Interventions.

The external institutions play a critical role in the study area to uplift their living standards based on livelihood opportunities available. This is validated by the diverse development agencies operating in the area. The last objective of this study was to ascertain development intervention priorities as perceived by households in the study area. Sample households were investigated to establish their perception on intervention priorities. Respondents were requested to prioritize four interventions that would contribute to poverty reduction at the household, community and external institution levels in the short, medium and long term.

Results (table 5.8) show that in the short term at household level, the preferred intervention was livestock production improvement (25%); access to water at community (43%); and at external institution level (49%) respectively. In the medium term, respondents maintained livestock production improvement (21%) as their pre-

[7] A local terminology searching for causal work and be paid in cash or kind, but the latter is preferred because of famine.

ferred interventions of choice at household level, followed by small business development (29%) and water access (28%) at community and external institution levels respectively. In the long term, the preferred intervention was small business development at both household and community levels at 28% and 21% respectively, while at the external intervention level, the preferred intervention by external agencies was improved livestock production (22%), see table 5.8.

Table 5. 8 Household Perception on Development Interventions at Household, Community[8] and External Institution Leevels in the Short[9], Medium[10] and Long[11] Terms

TERM	*INSTITUTION*	*INTERVENTION*	*PERCENTAGE*
SHORT	Household	1.Improve livestock production	25.0
		2. Access water	23.5
		3. Improve farming	19.1
		4. Small business	16.2
	Community	1. Access water	42.6
		2. Form SHGs	22.1
		3. Small Business	7.4
		4. Conservation activities	7.4
	External Institution	1. Access water	48.5
		2. Provide appropriate seed	8.8
		3. improve farming	5.9
		4. Supply relief food	5.9
MEDIUM	Household	1. Improve livestock	20.6
		2. Access water	14.7
		3. Improve farming	11.8
		4. Small business	10.3
	Community	1. Small business	29.4
		2. Access water	17.6
		3. Improve livestock	11.8
		4. Improve farming	8.8
	External Institution	1. Access water	27.9
		2. Small business	11.8
		3. Improve farming	10.3
		4. improve livestock	10.3
LONG	Household	1. Small business	27.9
		2. Acquire more land	14.7
		3. Improve farming	13.2
		4. Improve livestock	11.8
	Community	1. Small business	20.6
		2. Access water	17.6
		3. Improve farming	14.7
		4. Improve livestock	14.7
	External Institution	1. Improve livestock	22.0
		2. Public/social facilities	13.2
		3. Small business	11.8
		4. Access water	8.8

Source: Survey Results, 2000.

[8] Community in this case is a group of households that consider themselves to "belong together". In Meru a community may consist of anything between 100 to 200 households.
[9] Short term a period of up to 1 year.
[10] Medium term is a period between 1 to 5 years.
[11] Long term is a period of more than 5 years.

6. Conclusion

It is imperative to appreciate some aspects of this inquiry while drawing policy inferences. The study was carried out in an area with migrant settlers in a district generally considered high potential agriculturally. Therefore, livelihood opportunities in the study area may be different from those in districts that are classified as ASAL districts in Kenya. Furthermore, the socio-economic, cultural and physical environment of the study area is distinctive of other areas in Kenya. In this regard, it may be inappropriate to generalize the results to all dryland areas in the country except for those in similar conditions.

Based on the above perspectives and study findings, the following conclusions are sagacious:

- Households in the study area are categorically characterized in three groups visa viz The Rich/*Gatonga* households; the Non-Rich/*Nkia* Households; and The Poor/*Nkia Mukeu* Households.
- Household livelihood choices depend on household categories visa viz – agricultural activities most preferred by the *Gatonga* households; non-farm activities by *Nkia Mukeu* households; non agricultural wage labour by *Nkia Mukeu* households; and Social networks by *Nkia Mukeu* households.
- Household short term development priorities were livestock production improvement and water infrastructure development; in the medium term, households prioritized small business development, livestock production improvement, and water infrastructure development; while in the long term, priority interventions were small business development and livestock production improvement.

7. Recommendations

The study shows that household categorization and livelihood choice analyses are valuable frameworks for poverty reduction strategies in dryland areas. Consequently, there is need to ensure development interventions do not abate household resource foundations through the execution of detailed baseline studies before the formulation of dryland development programmes. The study therefore recommends the following;

- To enhance the external interventions impact, dryland development programming ought to foremost categorize and characterise households so as to identify the most vulnerable groups in the area.
- Development planning in dryland areas should champion household livelihood choices in line with the respective household categories.
- Consequently, for the next five years, development agencies in the study area should develop programmes that support households in three main sectors visa viz livestock production; water infrastructure and small business development as perceived by households.

It was indicated at the beginning of the study that poverty levels were high in the research area despite implementation of various development programmes by the state, NGOs, FBOs and the private. In policy terms, this calls for partnerships in the implementation of development programmes in the area to avoid duplication of efforts. In broad terms, three principles are important for ASAL development i.e. Active involvement of the local people and their practices; Strengthening of local resources; and Promotion of coherence through the establishment of linkages between endogenous and exogenous resources.

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