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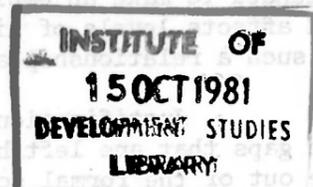
NON-FORMAL EDUCATION AND LEVELS OF LIVING: A STUDY OF FACTORS
AFFECTING THE QUALITY OF LIFE FOR RURAL FAMILIES IN MBOONI.

A RESEARCH PROPOSAL

by

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Views expressed in this paper are those of the author, and should not be interpreted as reflecting the views of the Institute for Development Studies or the University of Nairobi.

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ABSTRACT.

Critiques of formal education in society have reached a consensus that formal education has failed to provide a training sufficient for living. Non-formal education has been strongly suggested as one of the major alternatives in providing this kind of training. In view of this, therefore, this inquiry is intended to make an empirical examination of how non-formal education is related and affects levels of living of rural families and what its concomitant factors in such a relationship are.

Justifications for this study are given, which centre around closing the gaps that are left by formal education and providing training to those who are out of the formal school system. This study hinges on two theoretical perspectives: one that purports that formal education is a necessary but not a sufficient condition for improving levels of living for rural families, and the other that holds that non-formal education is a more efficient tool in improvement of these levels of living. A short literature review on the topic of this study is discussed. Working hypotheses ^{are} listed and brief definitions of operational variables are given. Methodology to be utilized is discussed, covering area of research, sampling, and measures intended for use in analysis.

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* This research proposal is also intended to form /basis of my Ph.D. work.
Funds for this study are being applied for.

NON-FORMAL EDUCATION AND LEVELS OF LIVING: A STUDY OF FACTORS
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Introduction:

There is a mounting wealth of literature that acts as a running evidence of current debates and controversies centering on the merits and demerits of formal education in society and the possible alternatives to it that exist. Despite these controversies, however, there is very little doubt that formal education in society has proved not only a worthless investment in economic terms, but has also failed to provide a training sufficient for living.

The above sentiment is currently being shared by a pool of critiques of formal education, one of the foremost being Ivan Illich who says of formal education that, "Any system of formal education has serious limitations. It fails to reach the working population; offers no chance for late or multiple entry; improves the educational influence of home, society, and workplace; tends to produce and perpetuate an elite; encourages conformity rather than healthy dissent and requires an ever-increasing expenditure" (Ivan Illich, 1976: 26).

Criticisms such as the above have led to vigorous search for alternatives to either supplement or replace the existing structure of formal education in society.

Non-formal education has been considered as a possible alternative.

Non-formal education has been suggested and supported by concerned scholars and educators such as Reimer who thinks the "School is dead", and suggests that "the most urgent priority is for a consideration of alternatives in education. alternative views of education itself, its nature and possible functions in the society of the future". (in Illich 1976; Appendices).

In the inquiry suggested in this proposal it is intended to make an empirical examination of how non-formal education relates and affects levels of living of rural families and what its concomitant factors in such a process/relationship are.

Justifications of the Study.

Suggestions contained in current literature on alternatives to formal education seem to indicate that any study, programme or undertaking that would liquidate the present system of formal education would be justified. While such an aim might be realized in the long run, for immediate needs, it might be irrelevant and unjustifiable. In view of this, the study has, therefore, the following justifications:-

1. It is a study of non-formal education as a determinant in raising levels of living for rural families.

2. Non-formal education in terms of investment and output is cheaper than formal education.

3. This is a study of non-formal education as a form of training that equips the rural families with applicable skills, thus avoiding wastage and unemployment. This is as opposed to the dumping characteristic of formal education.

3. Non-formal education is an alternative to the incapacity of formal schooling institutions in the rural areas to cope with increasing demand for the supply of formal education. It can provide training for life to those who never join formal system of schooling; those who join but drop out; those who join, complete and acquire certificates but find themselves insufficiently trained to deal with adversities of life.

Non-formal education in this instance eases the pressure on scarce formal schooling opportunities in the rural setting.

5. Closely related to the above point is the more pressing problem of "population explosion" that efficiently keeps formal schooling system pumped up to capacity with school-age population, that far surpasses the capacity of the system to contain it.

Non-formal education can deal with the surplus and therefore complement formal education in dealing with excesses of population dynamics.

According to Hunter, Borus, and Mannan (1974: 91) there are three ways in which to deal with the problem referred to above:-

a) implosion where population migrated from rural areas and concentrated in urban centres, and who are common victims of squalor, delinquency, crime, unemployment, and so on, may benefit from non-formal education that equips them with whatever form of skill or knowledge that allows them to deal with such threats to their existence in urban setting.

b) Diversification. This mainly refers to the almost inherent quality of non-formal education to follow a more flexible approach in training people for living, than does formal education that is undisputedly rigid an approach to the same.

c) Change. Non-formal education can continuously re-equip those whose skills are overtaken by time and technological advance but cannot get into the formal system to replenish or brush up these skills.

6. Evidence accumulated on studies on formal education system in rural areas shows that formal education is among the key factors that perpetuate inequalities of all sorts. It is also the weakest in dealing with the ills it creates in society.

Non-formal education in this circumstance has the potential to provide a form of training that ensures greater equity in life and also to deal efficiently with the inequality problems that stem ^{from} formal system of education. It can also deal with the problems that accompany its own inception in a community.

7. In cases where access to formal schooling is maldistributed non-formal education becomes a more relevant acquisition than formal education.

8. Non-formal education is a more efficient mechanism in the assessment of individual abilities in life as opposed to the dependence of the formal system of education on paper qualification in assessing the same.

9. Non-formal education is a more efficient tool in dealing with rising expectations and frustrations, for example of school leavers, than formal education. In its everyday use it looks for immediate solutions to felt needs of such a group of people in community. Non-formal education also has a tendency to contain ^{the} migrants in their homes, and therefore save them from greater frustrations of urban life.

All in all this endeavour as a study in non-formal education and how it relates to efforts to improve levels of living in the rural areas, is justified since it deals with gaps largely created by formal system of education and at the same time deals with problems it itself creates.

Theory and Literature Review

This proposal hinges on two theoretical perspectives; one that purports that formal education is a necessary but ^{not} a sufficient condition for improving levels of living for rural families, and the other that holds that non-formal education is a more efficient tool in improvement of these levels of living.

The controversy tied to the above issues centres on two schools of thought - the abolitionist and the integrated camps.

Two major groups, of some educators and economists favour the practice of integrated approach. The works of some educators like Levine, Adams, and other are indicative of the fact that learning through formal and non-formal modes may co-exist side by side. Economists on the other hand sound a similar support and argue that formal and non-formal education can be a source of supply of skill in the market. (See Hunter, et al, 1974: 62).

Sheffield (1974:96), falls in this camp, as he argues that non-formal education programmes can be important supplements for formal schooling in the poorest countries, since the vast majority of children get less than 3 years of formal education.

With regard to formal education as a necessary condition in raising levels of living for rural families, there is evidence to suggest that it cannot be overlooked in entire preference to non-formal education as an alternative approach.

In the words of Mannan (in Hunter, et al, 1974: 103), "choosing a combination of formal and non-formal education is a crucial issue for the LDCs.... One can learn how to read and write either in the home or in schools; automobile mechanics can be trained in a vocational training school or in a neighbourhood garage, employed personnel may improve the quality of service by receiving in-service training within factories in formal schools; the dropout rate can be minimized either by increasing the holding power of the school which involves school reform or by imparting effective and useful non-formal education to dropouts, self-awareness of the illiterate adult population can be developed through radio, television, or through formal night schools. Task oriented education can be arranged either in school, or on the job, or elsewhere."

The opposite camp, that of the abolitionists, is led by Ivan Illich and Reimer, two of the prominent critiques of the formal education system. These two advocate the total abolition of schools on the grounds that "schools are discriminatory, irrelevant to preparation for actual life jobs, and that they seek to maintain an elite control"¹ (Hunter, et al, 1974: 62).

While Reimer calls for an urgent priority in consideration of alternatives in educational content and finance, Illich strongly suggests a deschooling approach through alternative institutions which he justifies by arguing that, "Universal education through schooling is not feasible. It would be more feasible if it were attempted by means of alternative institutions. The current search for new educational funnels must be reversed into the search for their institutional inverse: educational levels which heighten the opportunity for each one transform each moment of his living into one of learning, sharing, and caring" (Illich, 1970 : 7). Illich continues to suggest that neither learning nor justice is promoted by schooling because educators insist on packaging instruction with certification.² School, therefore, in the words of Illich, has become "the world religion of a modernized proletariat, and makes futile promises to the poor, (page, 18,19).

1. A similar view is expressed by Dharam Ghai, in Education, Society and Development, 1974: 4-5.

2. This can be equated to the banking concept of formal education that Paul Freire discusses, (1970: 52).

Paulo Freire's critique on formal education echoes in similar direction with those of Illich and Reimer, in suggesting that the banking concept of education should be abolished and replaced with the posing of the problems of men in their relations with the world, an approach he calls "problem-posing education" that he argues involves a constant unveiling of reality (Paulo Freire, 1970: 52).

From the above, therefore, there is a strong consensus that formal school systems have left a lot of gaps unfilled, and that these gaps can only be filled through alternative approaches, the major of which is non-formal education. A lot of encouragement in research development in alternative to schools and especially in low-income countries has come from a number of bodies, like the Commonwealth Secretariat, and in response several experiments are now going ahead in the field of non-formal education in a number of Less Developed countries.³

3. See, Ian Lister, in "After Deschooling What," 1976: 27.

HYPOTHESES AND BRIEF DEFINITION OF OPERATIONAL VARIABLES.

From the above discussion on theory, this study wishes to expound and test the relationship between non-formal education, formal education and levels of living. Restated below are theories on which our study is based:

1. Formal education is a necessary but not a sufficient condition for improving levels of living for rural families.
2. Non-formal education is a more efficient tool in improvement of these levels of living.

From the above theories, levels of living is the dependent variable, and both formal and non-formal education are the independent variables. Thus non-formal education, and formal education will be used to explain levels of living of rural families. Other factors, such as incomes, occupation, land-size,/ and family size, are also seen as additional independent variables that affect levels of living. These factors, therefore, will be explored in this study along with formal and non-formal education, with a view to sizing or gauging their contribution in determining rural levels of living.

The following variables or concepts will be used empirically to explain each of the above variables:-

Levels of living will be explained by these variables:

- a) Household items or possessions
- b) Family Hygiene
- c) Nutritional Status and
- d) Diseases.

The independent variable non-formal education will constitute the following factors:-

- Access to:
- a) Farmer education
 - b) Nutrition education
 - c) Health education
 - d) Mass-media exposure

Formal education will be covered by two main factors:

- a) Number of years in formal schooling, and standard reached in formal schooling.
- b) Literacy level, that will be taken as the ability to read and write in a given language.

Other independent variables that will be utilized in this study along other variables in their effect or relationship with levels of living will include:

- a) Incomes
- b) Occupation
- c) Land size
- d) Ecology, and
- e) Family size.

Below, therefore, are the major hypotheses which the study will operationalize to verify the theories propounded in this inquiry:

1. The greater the degree of exposure to nutritional education the higher the levels of living.
2. The higher the agricultural know-how of a family the higher is its level of living.
3. The degree of exposure to health education is positively related to levels of living.
4. General mass-media exposure is positively related to levels of living
5. Formal education is negatively related to levels of living.
6. Ecology has a positive association with levels of living.
7. Income levels have a positive effect on levels of living.
8. Land size, by zones⁴ determines levels of living.
9. Levels of living in Mbooni are predominantly determined by a few factors.

Short operational definitions of each of the above variables are given below:

Independent Variables.

Non-formal Education. Current literature on non-formal education has defined this concept in many ways. Sheffield, for example describes non-formal education broadly as "any educational or training programmes which lie outside the normal primary, secondary, teacher training and university systems" Sheffield, 1976: 243). Another scholar, Kleis defines the same concept as "any intentional systematic educational enterprise (usually outside of traditional schooling) in which content, media, time, units, admission criteria, staff, facilities and their system components are selected and/or adapted for particular students, populations, or situations, in order to maximize attainment of the learning mission and minimize maintenance of constraints of the system. (Hunter, et al, 1974: 52). Coombs and Ahmed, however, give a definition of non-formal

4. This means that land in the upper zone would have positive association with levels of living, while land in the lower zone would have a negative association with the same.

education that is quite close to the interest of this study, which includes "all organized activities designed to improve the knowledge and skills of farmers or farm families in order to increase their output, productivity, and levels of living". (Coombs and Ahmed, 1974: 238).

Farmer Education. This will cover general farmer education in farming techniques for food and cash crops, livestock and dairy farming, horticulture, poultry keeping and application and use of farm inputs, for example fertilizer.

Adult education co-ordinated by a National Board (formed in 1965), has become an important component of educational provision. Increased recognition has been given to agricultural education through, for example, the establishment of Farmer Training Centres throughout the country, Youth Centres, Village Polytechnic, and so on, with a current stress on technical education (see, Ghai, 1974:9).

Nutrition Education. Education in areas like total family nutritional requirements, and particularly with reference to the needs of the various groups, like babies and children, adults, expectant and lactating mothers, convalescents and the aged. Other areas of crucial importance will cover food storage, preservation, and cookery.

Health Education. This will include general environmental hygiene. Sanitation, personal hygiene, refuse disposal, household pests, disease, immunization, and so on.

Mass-media Exposure.⁵ This will be taken to mean: (i) Listening to radio (ii) Reading newspapers and magazines.

Rogers and Burge (1972: 106), argue that media such as farm magazines and radio are important in creating farmer knowledge about new ideas.

Formal Education and Literacy Levels.

These concepts have already been defined above. 45% of Kenya's entire population do not get formal education, 50% get 7 years, and 15% Form 4 and above level of education (ILO, 1972: 239). In previous studies, it was found that 38.1% of adult population in Mbooni have had no schooling, whereas 42.2% have had upto 4 years of formal education, 13.5% upto 7/8 years and only 5% had post-primary education. (Musyoki, 1976: 108).

Literacy rates of Mbooni are also very low- 37.2%. However, it is slightly higher when compared to national literacy rates for adult population which stood at 30% as at 1968.⁶

5. Other forms of mass-media exposure or mass communication channels include films, television, and so on.

6. World Bank, 1974: 18-19.

Other Independent Variables.

Income: This will include total family income generated from farm products, non-farm activities, and family members.

Incomes and levels of living are closely related. Mbooni households suffer from very poor incomes and consequently low levels of living. From my study 77% of the household had an annual income of upto Kshs. 2,400, a figure which has been taken as an annual average income for the working poor in Kenya (See ILO, 1972: 61-62).

Occupation: Any form of economic activities from which an income is derived to meet everyday expenses, and particularly the basics of life. Occupation, income and education are strongly related to the socio-economic status of Mbooni households and we feel this has a lot of bearing on levels of living in area.

Land Size. Land factor has an important bearing on family resources, and especially agricultural output. The land question has been documented as a significant factor in any studies in rural areas.

However, the quality of land again does affect the kind of both food and cash crops that can be grown in a particular area, and hence it is likely to affect nutritional standards, and incomes that accrue to rural families.

Ecology. Ecology is important and especially as it determines land potential, which in turn has effect on agricultural output. There is substantial evidence to suggest that potentiality of land affects levels of living. For example, we saw that in Mbooni the high potential zone has higher incomes, and hence wishes to explore this factor farther as it affects levels of living.

Family Size. The size of a family does affect family resources. Average family size in Mbooni conforms to the national figure which is between 6 and 7.⁷

On the relationship between family size and welfare, it is has been noted that Kenya has one of the highest population growth rates in the world - 3.5%, and this would eventually have an adverse effect on the quality of family life. (See Adult Education Journal,,1973: 121).

Dependent Variables.

Levels of living. Levels of living will be measured by possession of certain household items. Household items, therefore, will be the major parameter used in this study to categorize families in their levels of living. The study wishes to attempt a correlational analysis to prove that household items used here are

7. See ILO, 1972: 12.

infact related, and also related to other factors like nutritional status, family hygiene, and so on. For example possession of an item like toothbrush, would largely imply use of the same, and hence a factor in personal hygiene. Toilet in the home is likely to be related to disease, for example dysentery. By hypothesis, therefore, we would suspect that those families with high levels of living have also a high nutritional status, and vice versa.

However, studies on levels of living have given this concept various definitions. Of these Roger's definition lies closely to the use of this concept in our study. He defines levels of living of an individual or family as "the degree to which the basic needs of nutrition clothing, housing and health are met". This ^{is} to be distinguished from "standard of living" which he further defines as "the degree to which a person's basic needs are met, whereas levels of living represents the actualities that exist". (Rogers, 1962: 379).

Related to the concept of levels of living, is "quality of life", another concept which is a touchy one in definition. The whole question of quality of life, however, cannot be separated from issues on health, nutrition, housing and so on. On the same subject it has been recognized that, "where health and nutrition is poor, where housing is inadequate, where there is poor education and a low level of literacy, it is obvious that improvements must be made both to motivate and educate families, and to provide resources and services so that they may raise their levels of living and upgrade the quality/life and welfare". (see Journal of Adult Education, 1973: 120).

Household Possessions. These will include items that are assumed either commonly owned or luxurious in any household, for example tables, chairs, radios, watches and so on. My previous study in the area showed that the majority of Mbooni families fall under very low levels of living. Mbooni families fall in four groups according to their levels of living, each group being characterized by certain household possessions, as shown below:⁸

<u>Low</u>	<u>Lower-Middle</u>	<u>Upper-Middle</u>	<u>High</u>
"Karai" of basin	Separate kitchen	Foam Mattress	Vono bed
Tables	Sheets	Radios	Motor vehicle.
Wooden box	Cupbard	Thermos flask	
Easy chairs	Fron box	Forks	
Torch	Tooth brush	Clock/Watch	
		Suitcase	

8. See Musyoki, R.N. M.A. Thesis 1976: 174.

The same items will be used in this study as a standardized measure in categorized Mbooni families into their levels of living.

Family Hygiene. Factors or issues related to cleanliness in the home, like refuse disposal, availability of latrine, household pests, fencing and so on will be the major concern in this study.

Nutritional Status. This will cover type and frequency of foods (meals) taken by the family, with particular reference to foods given to the various groups identified above (in discussion of areas that are covered under nutrition education).

Diseases. This will mainly cover common diseases that are easy to relate to the environment, for example, dysentery, colds and coughs may be related to low levels of living.

This study will give us yet another opportunity and continuity of research experience in the area. And lastly, the Family Life Education Centre that was opened in the area early this year, will be of relevant reference in this study since it mostly covers non-formal education programmes that this study will address itself to. School location, in one of the isolated ranges and hills in Nakuru District that rise well above 8,000 metres. The other hills include Mt. Marungu (the Kenyan Range) Mt. Kenia, and to a lesser extent Mt. Kenia. School is one of the five locations comprising the Nakuru Division of Nakuru District. The other four locations include Kisumu, Kitale, Kericho, and Nyeri. School location covers an area of 275 square kilometres. Mbooni is within that it is fairly representative of the three major ecological zones in which Nakuru District can be divided into, that is, wet, middle and lower zones. In the east of the District, School lies approximately between 400 metres and 2,800 metres at the top (1) (2) (3), as illustrated in the diagram below.



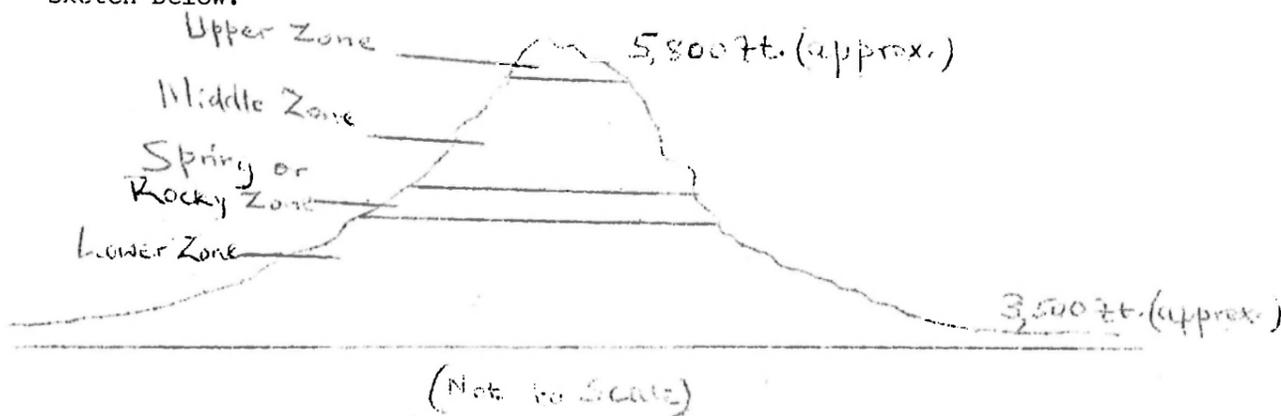
METHODOLOGY

C. Area of Research.

This study will be carried out in Mbooni Location, Eastern Division of Machakos District in Eastern Kenya. Mbooni has been chosen as an appropriate area for this study for a number of reasons:

1. First, the author in addition to being conversant with the area, has conducted two surveys there. Findings that emerged from the previous surveys, for example the strikingly low levels of living, very poor, low incomes and low rates in social participation have acted as a catalyst in the study that will attempt to explain this situation.
2. It is also hoped that this study will greatly supplement research information/available on Mbooni, an area that no intensive researches had been carried on before the previous studies referred to above.
3. This study will give me yet another opportunity and continuity of research experience in the area.
4. And lastly, the Family Life Education Centre that was opened in the area early this year, will be of relevant reference in this inquiry since it mostly covers non-formal education programmes that this study will address itself to.

Mbooni location, is one of the isolated ranges and hills in Machakos District that rise well above 2,000 metres. The other hills include Iteti-Mitaboni Kangundo-Matungulu (the Kanzalu Range) Kilungu, and to a lesser extent Kalama. Mbooni is one of the five locations comprising the Eastern Division of Machakos District. The other four locations include Kisau, Kiteta, Kibauni, and Muthetheni.. Mbooni location covers an area of 227 square kilometres. Mbooni is unique, in that it is fairly representative of the three major ecological zones in which Machakos District can be divided into, that is, upper, middle and lower zones. Like the rest of the District, Mbooni lies approximately between 400 metres and rises at 2,000 metres at the hill top (Kikima), as illustrated in the diagrammatical sketch below.



Lower Zone

This zone is also referred to as the star-grass zone and lies all around the foot of the hill. This area receives an average annual rainfall of 15 inches, and has low agricultural potential. Star grass, thicket and bush are the main vegetation cover. Soil erosion, and easily waterlogged soils are also characteristic of the area. Cotton is the main cash crop here. The area is quite good for grazing, fruit and grain/cereal growing.

Spring or Rocky Zone.

This is a typical mountain zone, very steep with plenty of streams emanating from here and often appearing at the lowlands. This zone runs around the hill and it is the demarcating line between the lower and middle zones.

Middle Zone

This is mainly a coffee zone, which is also referred to as Kikuyu grass zone. It receives an annual average rainfall of 25 inches. There are minor irrigation schemes, and most horticultural crops, fruits and vegetables are grown here. Wattle bark and dairy farming are other farming activities carried out here.

Upper Zone.

The upper zone or the high-braken zone covers the area around the hill-top. It has an annual average rainfall of 40 inches, and has thick evergreen vegetation cover. This is the major dairy and livestock farming area; with exotic breeds kept. Previous surveys have noted this area to be the most productive, progressive, and has higher incomes than the rest of the zones.

Non-farm activities are numerous in all the areas, (although some of them are characteristic of the particular zones), and these include small businesses, carpentry, brick-making, sand-heaping, arts and crafts, pottery and various kinds of petty trades.

Self-help (Harambee) activities locally referred to as "myethya" are diverse, and like in most parts of Kenya the common ones are construction of schools and cattle dips. The Dairy and Coffee Co-operative Societies are the major economic bodies in the area.

Mbooni location is divided into fourteen sub-locations or administrative units each of which is headed by a sub-chief. These are the sub-locations according to the zones⁹: Upper Zone: Kitundu, Mutitu, and Uvuu; Middle Zone: Utangwa, Nzeveni, Kyuu, Uthiuni, Yandue; and Lower Zone: Kalawani, Mavindu, Mbanya, Ngai, Iiani and Itetani. (See map below)

9. These zones were fixed in the previous surveys and the various sub-locations were located accordingly.

Total population in the area as at 1969 census (p. 29) was 42, 952. Average population density is 155 inhabitants per kilometre, as compared to the Machakos District average density of 50, and 92 of Eastern Province. However, some sub-locations are almost double this average, for example, Nzeveni with 250. Population density clusters vary according to the physical or ecological zones, with highest density in the upper zone.

Mbooni suffers from lack of proper communication mainly due to the absence of all-weather roads. Accessibility to the area is very poor due to the mountaneous nature of the area, which is served by one major dust road.

SAMPLING

Random sampling will be the basic probability sampling design in this study. The basic assumption in studying samples is that the characteristics of the sample will adequately reflect the characteristics of the aggregate, or statistical population from which it has been drawn.

From experience in the previous studies, stratified random sampling is the most adequate sampling procedure to be employed in this area. Stratification of the universe under study in Mbooni would mainly be based on a simple criterion, that is on the physical or ecological features of the area. These ecological zones are not only distinct physically, but the differences are amplified by the homogeneity of each of the zones, for example agricultural and non-farm activities, incomes, and so on are particularistic and mostly marked in the extreme zones.

The rural family or households will be the unit of observation, where the households will be the sampling units rather than individual persons, as the focus of this study is the family as a unit. The study will utilize the sampling frame comprising of the total number of households in each zone that was compiled in the previous studies. A statistical sample of between 150 and 200 will be drawn as dictated by sampling fraction.

Purposive or judgement samples, which is normally through a non-random procedure may also be utilized, if deemed essential in this study, and especially for indepth information for certain clusters of groups of households in the respective zones.

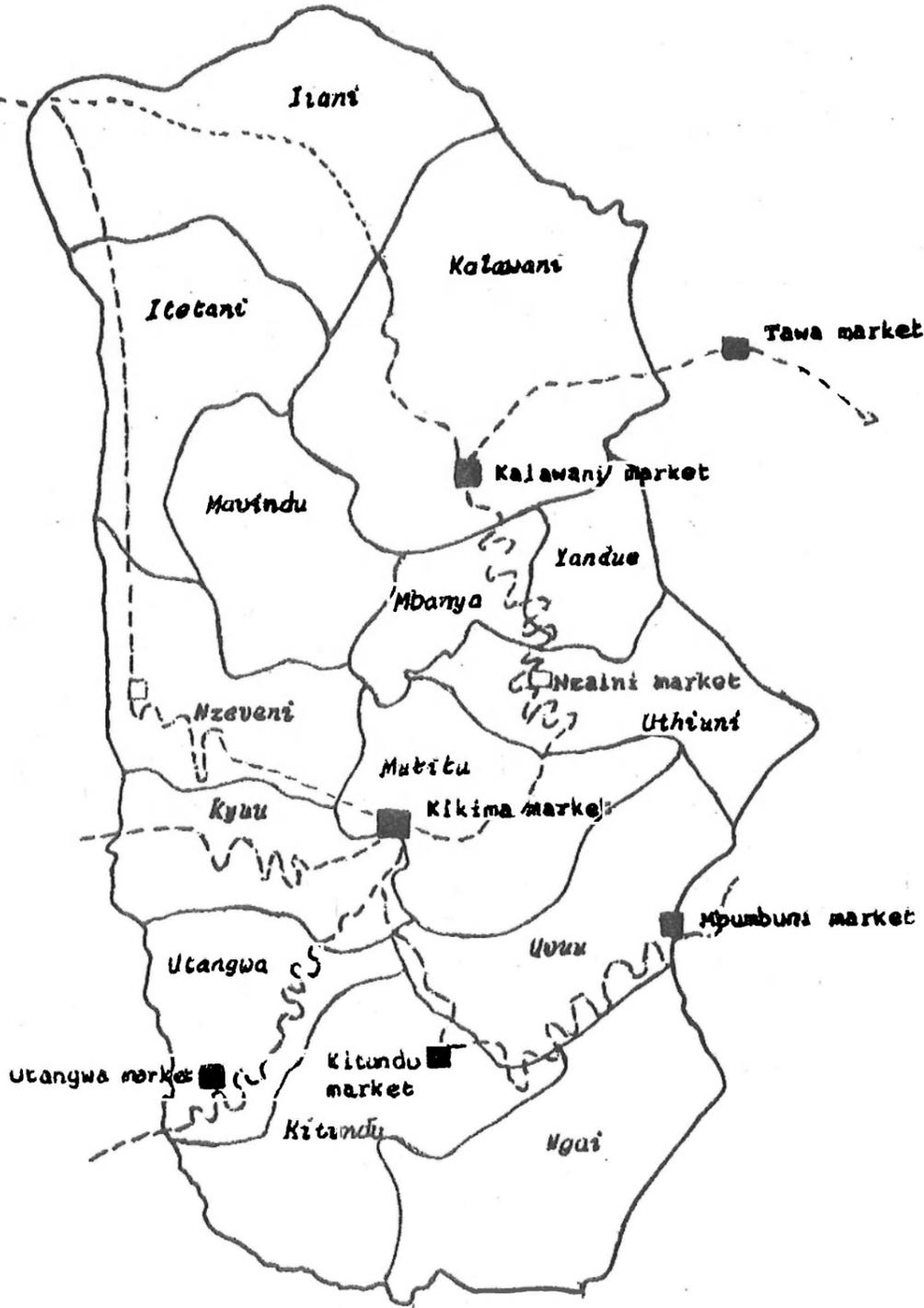
DATA COLLECTION

The major data collection tool will be the interview schedule. The interview, as research experience shows, is most appropriate in areas where the target population have very low literacy rates, as is the case in Mbooni. The interview has also added advantages, like high response rate, follow-up, and tapping of observational data.

MAP OF MBOONI LOCATION



Mchakos
←



- = Markets with shops
- = boundaries of sublocations
- - - = Government roads

However, the survey method will be supplemented by simple observation technique, and by use of resourceful persons or key-informants as the study will see fit.

Data from secondary sources will also be used to strengthen the findings and arguments in this study. Particularly data from the two previous studies that the author was engaged in. Other sources of data will include the Central Bureau of Statistics- Rural Survey, especially Modules on Literacy, Nutrition, and other Non-formal Education data, the findings of which would be ready early next year.

MEASURES (AND STATISTICS) INTENDED FOR USE IN ANALYSIS

Simple Statistics: These will be used to assess the variations in single variable distribution, for example, income, land size, non-formal education and so on. Included here will be measures of central tendency that is means (x) and measures of dispersion for example standard deviation (SD).

The Chi-Square: This measure will be used to indicate association between variables of the study as outlined above. The determinant factor will be the difference between the calculated and observed chi-square.

The Gamma (). While the chi-square only indicates association between variables, gamma indicates the strength of the correlation. It will be used for this purpose in the study.

Multivariate Analysis: This measure will be used to explain the multivariate nature of levels of living. It will mainly determine the degree of the strength of a single variable over levels of living when taken in multiplicity with other variables, for example the various components of non-formal education e.g. nutrition and farmer education on levels of living.

This measure was successfully applied in my previous study.¹⁰

Guttman Scale. This scale will be used to categorize households into their levels of living. This scale, developed by Louis Guttman has the major properties of ordinal and cumulative. The other quality of the scale is the property of being unidimensional, that is, it measures only one attribute. The basic in-built measures of this scale are the concepts of Reproducibility and Scalability.

10. Musyoki R.N. M.A. Thesis 1976: 187-188.

The Guttman scale to be valid or satisfactory must reach the accepted Co-efficient of Scalability of at least 0.65, and not less than Co-efficient of Reproducibility of 0.90. In our previous study, for example in measuring levels of living, out of a pool of 32 items only 18 fitted a valid Guttman scale, with a Co-efficient of Scalability of 0.82, and a Co-efficient of Reproducibility of 0.91. Hence these 18 items form a valid pool to measure levels of living for Mbooni families.

Other measures that the study may find useful will be used to strengthen our arguments.

CONCLUSIONS

Most non-formal education programmes have a tendency to closing the gaps that we have identified in this study, and therefore affect levels of living for rural families, for example by improving their nutritional status, reducing wage gap, migration and so on.

Hence it is the ultimate aim of this study to utilize the findings of this study to design a pilot or an experimental curriculum on non-formal education programme aimed at raising levels of living for Mbooni Community. It is our hope, for example, since such a possibility is feasible such a pilot project would be fed into the already existing Family Life Education Centre in the area. And this would be an example of a problem-solving approach based on empirical findings on a community and designed to improve the same community. Such an approach may prove a useful prototype for experimenting or modifying for replication in other rural areas of Kenya, which undoubtedly have similar problems and particularly that of low levels of living.

And lastly, although this may sound utopia, when all the above is done, it will be a practical thrust in the campaign and attempts towards bridging the now wide gap on rural poverty.¹¹

11. Coombs and Ahmed have strongly proposed that non-formal education is crucial in attacking rural poverty. (Coombs and Ahmed, 1974: 238).

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