PLANNING FOR RURAL HEALTH SERVICES :
A CASE STUDY CF SOUTH IMENTI DIVISION -
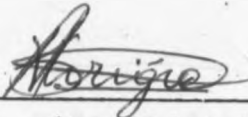MERU DISTRICT.

BY

B. N. KIRIGIA   B.A. (HONS.)   ›NAIROBI

(A THESIS PRESENTED IN PARTIAL FULFILMENT
 OF THE REQUIREMENTS OF THE DEGREE OF MASTER
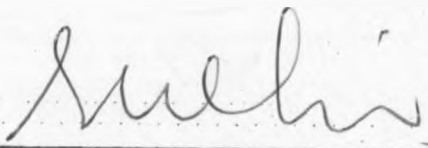 OF ARTS IN PLANNING).

JUNE, 1985.

DECLARATION

This Thesis is my original work and has not been presented for a degree in any other University

Signed: _____
(Candidate)

This Thesis has been submitted for examination with my approval as University supervisor.

Signed: _____
(Supervisor)

June, 1985.

DEDICATION

This work is dedicated to my dear
Father and Mother for their love
and contribution to my academic
pursuit.

ABBREVIATIONS

C B H C	-	Community Based Health Care
C B R	-	Crude Birth Rate
C H W	-	Community Health Work
C O	-	Clinical Officer
E C N	-	Enrolled Community Nurse
F H F E	-	Family Health Field Educator
F H F O	-	Family Health Field Officer
F P	-	Family Planning
G D P	-	Gross Domestic Product
G O K	-	Government of Kenya
H E O	-	Health Education Officer
M C H	-	Maternal and Child Health
M E P D	-	Ministry of Economic Planning and Development
N F W C	-	National Family Welfare Centre
N G O	-	Non-Government Organization
R H C	-	Rural Health Centre
R H F	-	Rural Health Facility
S D P	-	Service Delivery Point
R H U	-	Rural Health Unit
T B A	-	Traditional Birth Attendant
USAID	-	United States Agency for International Development.

ABSTRACT

Development of Kenya cannot be separated from
the health of the individual Kenyan. One of the objects
of development is to enable the individual to live a
healthier and therefore happier life. It is true that
when there is much ill-health, people are neither
happy nor productive, so that the development of their
country is delayed.

This study thus set out to study factors that
affect and influence the state of health prevailing
in most rural areas with a aim of providing socio-economic,
cultural and physically determined solutions to the
health problem. The theme of the study is to show how
the health of the rural areas can be improved as quickly
and as economically as possible. For its study area,
the study has taken South Imenti Division of Meru
District as an example of a typical rural area and
examined the physical, economic and social factors as
they affect the health of the people.

The study has established the fact that health
and the provision of health services encompasses many
factors, such as poverty, communication, environmental
sanitation, housing conditions, water supply, education,
agriculture and other health-related services and not

just additional investments in medical care. It has
also found out that the Kenya's health approach
where curative services have so far dominated the
development of the health care system should be
re-evaluated to increase the share of primary, preventive
and promotive health care.

The study area was characterized by lack of
health services in general and in many cases services
of a similar type are irrationally located in relation
to the distribution of population such that they become
duplicated within a small area. Hence unnecessary costs
are incurred and services themselves are under-utilized.

The study thus considered that to rectify this
situation and to rationalize the distribution of health
services, the national service centre policy which aims
at guiding spatial development should be given
sufficient attention by all the agencies responsible
for provision of health services.

Taking the problems prevailing into consideration
the study finally comes up with a number of recommenda-
tions. In the first place, it is recommended that a
more comprehensive planning approach to health care
is required. This should aim at involving all the
sectors and coordinating all the agencies responsible
for provision of health care at all levels.

Secondly, it is recommended that there is a need to adopt an approach integrating all the elements necessary to make an impact on the health status of the people, particularly the under-served groups. One approach which could respond to the various needs identified is that known as "community based health care."

The study has made an attempt to describe by reference to the present health situation (needs for health and health services) the problems that require resolution and how to go about it.

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CHAPTER ONE

1.0   UNDERLINE_INTRODUCTION

    Health is taken by World Health Organization
(WHO) as a state of complete physical, mental and
social well-being, and not merely the absence of
disease or infimity [1]. From this definition it is
clear that health care encompasses more than has
hitherto been understood, and includes services in
such sectors as agriculture, education, environment,
etc.   These services can be grouped under two broad
categories:

(i)   Curative and supportive services, and
(ii)   Preventive and promotive services (including
       such services as health education, nutrition
       services and immunization).

Health is also an essential component of over-all
development. The quality of life in human settlements,
invariably depends on the state of health care which
in turn is linked with and dependent upon the availability
of adequate food, water, waste disposal, transportation
and housing.

    Health services in Kenya are currently provided
by the Central Government, local Authorities, church
missions, industrial health units and private
institutions and individuals. The Central Government
now deploys health services through a network of

provincial, district and sub-district hospitals and through health centres, sub-centres and dispensaries.

Many health schemes in Kenya have failed to serve the majority of the population, or even those most in need because the most health services are concentrated in a few urban areas and are therefore geographically, socially and economically most accessible to the rich, meaning that they serve those who need them least. This state of affair need to be corrected before it worsen.

1.1 STATEMENT OF THE PROBLEM

Health conditions vary greatly not only from country to country but also from region to another, even within a particular country. Inspite of tremendous strides in medicine and technology, the health status of the majority of people in the disadvantaged areas of most countries of the world remains low. It is a clear phenomena that throughout the developing world the health conditions are substantially inferior to those in developed countries. According to Sector Policy paper (1980). a report by World Bank, for the developing countries as a group, life expectancy at birth is about 53 years. Life expectancy increased by a dramatic 50 percent between the early 1940s and the early 1970s, but this trend began to falter in the 1960s, and has continued

to slow. Life expectancy at birth in Africa is now
about 47 years; in South Asia it is about 49 years,
and in Latin America, about 61 years. In contrast,
life expectancy in the developed regions is about
70 years as depicted by table 1 below.

Table 1.1: Life Expectancy at Birth in some major areas
of the World (in years).

Region	1950-55	1955-60	1960-65	1965-70	1970-75
Developing regions	42.5	45.7	48.7	51.3	53.2
Africa	37.5	39.8	42.2	44.5	46.5
Latin America	52.0	54.9	57.2	59.3	61.2
East Asia	47.5	51.7	55.9	59.8	63.3
South Asia	39.2	42.1	44.9	47.4	49.3
Developed Regions	64.3	67.2	68.6	69.3	70.3
World Total	47.2	50.1	52.5	54.4	56.0

Source: United Nations Demographic Estimates and
Projections for the world, Regions and Countries
as assessed in 1978. Recorded by World Bank
sector policy paper (February, 1980) p. 11.

More still in the developing countries the state
is even worse in the rural areas as compared to the
urban areas. In Kenya the national physician population
ratio is 1:8,000. They are mainly concentrated in urban
areas (1:1,000) while in the rural areas the ratio
is 1:70,000. It is estimated that only about 30 percent

of the rural population in Kenya has reasonable access to any form of modern health services [2].

People of the developing countries have suffered and continue to suffer most severely inspite of the conventional system of medical care. They are always fighting a constant battle against malnutrition, disease and ill health. Problems such as communicable diseases, parasitic infestations and others continue to take a heavy toll of people's lives, especially those of infants, children and other vulnerable groups in the developing countries. According to Todaro infant mortality rates (that is, the number of children who die before their first birthday out of every 1000 live births) average about 155 in the least developed countries compared with approximately 27 in the developed countries [3].

The main problem has stemmed from the adoption of a system of medical care originally developed in the developed countries. This system places emphasis on curative medicine, (i.e. the treatment of illness when it occurs rather than also on prevention of disease). Increasingly such a system relies on complex high technology methods which require highly trained personnel to carry out. It is also highly

expensive and has reached such a level that no
country, including developed nations, can afford to
offer all its citizens a standard of health care
to match the potential which exists. The low health
status of these people in the developing countries
has not only manifested itself in terms of morbidity
and mortality but has also affected human development
and the capacity of individuals to develop their
potentialities and lead a productive life.

Kenya like most developing countries has not
been able to distribute her health services equitably.
The 1979 census data reveal that nearly 87 percent
of Kenya's population resides in rural areas, yet
nearly 80 percent of health resources are concentrated
in the major towns of Nairobi and Mombasa[4]. The
report further reports that in 1978, the ratio
of the total of Government general hospital beds
(excluding Leprosy, psychiatric, armed forces,
spinal injury unit and prison hospital beds) plus
church hospital beds to thousands of population was
1.18. Although this might appear a reasonable
ratio for a developing country as the usual
target aimed for is 1.0 beds per thousand [5]
however looking at the distribution of beds per
thousand population among various parts of
the country, one finds that the ratio

ranges from 0.73 beds per thousand in Nyanza Province
to 1.45 in Coast Province. In addition to Nyanza,
other provinces falling below the average overall
provinces include Western, (.86), Eastern (.98) and
Rift Valley (1.14). Looking at the major towns one
finds that the ratio is 4.37 beds per thousand in
Nairobi, 2.77 in Mombasa, and 1.33 in Kisumu [6].

According to the Ministry of Health statistics
recorded in Health Strategy for Kenya for 1982,
there are approximately 2036 physicians serving in
Kenya, of whom 1212 are Kenyans. However only about
550 or 30 percent of the total are in the Private
Sector, the bulk of whom practice in the urban
areas. The Annual Report of the Medical Practitioners
and Dentists Board, 1978 indicates that the number
of doctors licenced for private practice in that year
was 892 in Nairobi and 159 in Mombasa. The picture
was no different in 1981. Ministry of Health
estimate that only less than 15 percent of Kenyan
Physicians practice in rural areas outside the major
towns. They have further estimated that over 80 percent
of Kenya's most highly trained nurses serve in the
largest urban centres, leaving less than 20 percent
to serve the rural areas. Some of the reasons why
the nursing personnel, particularly Registered
Nurses and those having received advanced training
tend to be posted almost exclusively to hospitals

in big towns is because the majority of these senior
nurses are married to senior people working in
these towns and also because of the style of
training together with their attitudes developed
in the course of their training.

The share of the rural areas in the health
budgets of Kenya is very small compared with those
of urban areas. Maina quote the Development Plan
1974-1978 where the rural services were estimated to
take 21.4 percent of the estimated total of £28,000,000
allocated to the Ministry of Health. In the 1984-88
Annual Development Estimates, the rural health services
were to be allocated (a larger amount than in the
past) 41.8 percent of the estimated expenditure
allocated to the Ministry of Health. Although there
has been a concious move to improve rural health
by making it   priority area and also increasing
the national expenditure on it, the actual expenditure
is still low, especially considering the poor state
of health prevailing in the rural areas and that
the bulk of the population live and work in the rural
areas.

The approach hitherto adopted in providing
health care to the people has not been realistic.
The health services which should aim at improving
the health status of the people are not doing so

to the degree desired as there are high rate of
underutilization even of the few health services
existing. As already stated, the access of large
segments of Kenya's population to health services
is limited or non-existant in that only 30 percent
of the rural population in Kenya has reasonable access
to any form of modern health services, yet nearly
87 percent of the population reside in rural areas,
while 80 percent of Kenya's health resources are
concentrated in major cities of Nairobi and Mombasa.
In other instances health services have often operated
in an isolated manner, neglecting other factors
contributing to human wellbeing such as education,
communication, agriculture, social organization,
community motivation and involvement. One of the
reasons for this, is that the approach adopted has
been largely promotive of highly sophisticated;
and centrally located medical care and, even when
not so, has frequently been unrelated to the local
realities. Available resources (human, financial,
and institutional), including training programmes,
facility designs and equipment purchases for use,
have been used mainly to provide this type of
medical care in urban areas, thus benefiting only a
minority [7].

According to the Ministry of Health financial
Report and trial balance of June, 1981 about 70 percent

of the recurrent vote was on curative health. This
approach to health care equates disease-curative
service with care. Medical education in recent
decades was focused on diagnosis and management of
diseases which often were not only the major health
hazards. This preoccupation is reflected in the
services provided, consisting at best of costly
curative services for the very few in urban areas,
making even those who can afford medical services
dependent on such a: service, dependent on drugs,
and on hospital care. The poor and especially those
in the rural areas always find themselves at a
disadvantage because of this approach. This is in
sharp contradiction to the World Health Organization
definition of health which stressed health for all
and the interdependence of the promotion of health
and the prevention and cure of disease. Health must
be viewed in terms of overall social wellbeing, and
there is a need of recognition of health not being
equitable with only the cure of disease.

After independence, Kenya like many developing
countries invested heavily in medical schools and
hospitals to provide the technical basis for health
care system. As a result sophisticated hospitals
symbolizing modernity emerged. The table below
shows the budgetary allocations for Kenyatta National
Hospital and Provincial Hospitals for the financial year
1981.

Table 1.2: Budgetary allocations for Kenyatta National
Hospital and Provincial Hospitals , 1981.

	Recurrent	Development
Kenyatta N. Hospital	128,777,259.80	53,246,507.10
P.G.H. Nyeri	25,906,691.25	8,376,115.30
Mombasa	27,108,305.25	26,547,740.90
Garissa	11,294,938.25	1,205,983.80
Kisumu	38,340,353.70	7,238,316.05
Nakuru	26,251,136.00	9,567,916.10
Kakamega	22,667,067.65	4,488,440.55
Total	304,330,433.25	114,724,711.30

Source: Financial Report and Trial balance, June, 1981.
Recorded by MOH - Health Strategy for Kenya -
(1982) p.6.

-This is in some degree the result of Kenya's
efforts to develop curative and training infrastracture.
Training for physicians and nurses has (although
it is changing) been following International
curricula. This neglects the Kenya situation and
presumes the existence of sophisticated facilities
and equipments. As a consequence, health personnel
are frequently inadequately prepared, particularly
for work in rural areas. As already stated most of
the qualified medical staff mostly settle in urban
areas rather than respond to the critical needs of
the more than 80 percent of the rural population.

The professional bias of medical staff and the popular
appeal of hospital-based health care has made
curative care to be more emphasized, while
prevention and early treatment are neglected. This
could also be attributed to the fact that public
policy is normally formed by urban elites who often
have already achieved adequate nutrition and
sanitation and whose needs now are for sophisticated
curative care.

The problem of under-utilization of some of the
existing modern health facilities which is the major
problem the Government is encountering at present
has not received great attention. For a health
facility to be utilized at the planned rate, it
should not only be accessible to patients, but its
services should also be of acceptable quality as
perceived by the patient and not necessarily as
judged by the health professionals.

In South Imenti Division of Meru District
health facilities are not geographically accessible
to the majority of the people (Map No.6). The
topography of the area and the poor road network
which is very unreliable especially during the rainy
seasons, together with the high transportation
expenses makes even the few existing facilities
under-utilized. The communication problem quite

often interrupts the distribution of drugs and other
supplies, consequently resulting to poor provision
of health care. The mobile clinics which would
otherwise be of use, frequently do not reach
remote posts because vehicles break down or at
times there is no fuel available.

South Imenti Division being a good example of
a rural area suffers most of the problems experienced
in other rural areas. There is lack of enough
trained staff inadequate supervision, lack of both
equipments, staff morale and even poor distribution
of available drugs and materials by the health workers.
Some of the paraprofessional health workers when posed
to these rural areas, see it as a punishment and hence
lack moral which lowers the quality of health services.

The consumer has often come to view the health
services with dissatisfaction due to all these
problems. When these problems repeatedly occur,
the consumer become frustrated and loose confidence
with the available facilities which to them have
proved unreliable in the provision of medical services.
This therefore means that the services provided may
not meet minimum acceptable standards of quality as
perceived by the clients. This is reflected by a low
level of utilization, or under-utilization, of the
local health services, as manifested by refusal to

attend or by preference for other forms of health care such as that provided by traditional healers or private practitioners in urban areas.

There is also alienation and a feeling of helplessness on the part of the consumer, who cannot identify with the health services and personnel.

Most of the population in South Imenti is in the subsistence sector and their income is very low. People in the area therefore find themselves in big problems in trying to share the little resources they have to the unlimited needs facing them. The cost charged for some of the services provided are too high and often become difficult for people in their economic status to afford. It is unfortunate that even where free health care is available, the costs of transportation and work loss may exceed the economic resources of many people of the area.

Even more important, health authorities have established health services within given geographical areas (Map No.6) without considering their relevance to the existing situations and their acceptability to the population. Community development programmes, such as agricultural development, transportation and other health-related programmes which may offer a

natural base for health services, have not been
given due consideration.

1.2 PURPOSE OF THE STUDY

In the developing countries, health hazards
loom large in the lives of the inhabitants and often
take a heavy toll of life. In Kenya according to
1984-1988 Development Plan the death rate is estimated
to have dropped from 20 percent per thousand of the
population in 1963 to 14 in 1982, the infant
mortality rate dropped from 120 to 86 while life
expectancy at birth has a result, improved from 40
years in 1963 to 54 years in 1982. The crude birth
rate has however increased since 1948, as depicted
by the table 3 below:

Table 1.3:   Kenya: Selected Census Data

Census	Census Population (Millions)	Estimated Crude Birth Rate per 1,000 Population	Estimated Crude Death Rate per 1,000 Population	Rate of Natural Increase
1948	5,800,000	50	25	2.5%
1962	8,636,000	50	20	3.0%
1969	10,943,000	50	17	3.3%
1979	15,291,000	53	14	3.9%

Source: Population censuses, Kenya, 1948, 1962, 1969, 1979.

Despite every effort and a heavy expenditure
of material and human resources, the health situation
is grave and the trends are developing into a major
crisis which must be faced at once if costly reactions
are to be averted and present opportunities grasped.
Although Kenya has made development in health standards,
it is still low especially when we consider the
developed countries where life expectancy at birth is
more than 70 years compared to 54 years in Kenya. A
major concern is therefore how we can apply the
existing knowledge and resources to eliminate some
of the prevailing health hazards and promote the state
of health in general.

The main purpose of this study is to show ways
of promoting effective accessible and economical
health care services. Since the bulk of the Kenya's
population lives and works in the rural areas, it is
the aim of the study to show how health services can
be planned and organized so as to provide the highest
return in human welfare from the existing limited
resources of capital and skills and making sure that
no vulnerable section of the population is neglected
and that primary health care at least is within reach
of all sections of the population.

One can argue that probably there is no nation
in the world which has all the resources necessary

to respond to the needs and demands of its population
for health care services. It is however equally ·
true that most of the people reporting sick to the
hospitals, health centres and dispensaries of a
country like Kenya, as well as to traditional
practitioners, should never have become sick,
had they the good fortune to live in a country
with comprehensive health care, free popular education
and a reasonable standard of living. Such people would
have been protected, or would know how to protect
themselves, from the diseases that now bother them.
It is also true that, if despite this, they become
ill, they would know the importance of quickly seeking
treatment to minimize the consequences of their sickness.
This study therefore also attempts to identify measures
which can be taken to reduce the huge unnecessary
burden of sickness which handicaps so many individuals
in Kenya in general and South Imenti in particular,
limiting their enjoyment of life, their productive
employment and too often their duration of their lives.

It is true that health services which should
aim at improving the health status of the people are
not doing so to the degree desired, and therefore
this calls for a proper planning. Since planning is
a process of deciding in what respect the future
should be better than the present, what changes are
necessary to bring about improvement and how these

changes can be implimented there is a justification
of planning for rural health services. When services
of the same level in education, housing, clothing,
nutrition and basic livelihood can be provided and
environmental protection maintained, then we know
the sickness experience of a developing country like
Kenya will approach that of the wealthier countries.
The question in the meantime is, how with so many
competing demands upon the small resources of money,
manpower and materials that Kenya can command, which
strategy and approach should Kenya adopt to make
it possible even for a small breakthrough to health
in a rural area like South Imenti? This study will
show that not only a small but a major breakthrough
is possible. There are signs of the mobilisation
of just those ideas and forces, that can break
the barriers currently standing between people and
the healthier existence that which should be theirs.
To move at a reasonable pace into this new era,
however, the lessons implicit in the history of health
development in the west have to be studied. The new
thinking derived like community based health care
has to be applied vigorously to accelerate the progress.

We must not assume that health is being cared
for simply because a system of health care exists.
We must learn to recognize the right issues, find out
what are the right tools, and put them in the right

hands. It may require developing approaches to
health care that are entirely new [8].

The strategy for health services should be
designed to be acceptable to the community. The
success of any programme of health require that
health workers understand the community. There is
a need to understand a people's socio-cultural
background, especially when programmes intended to
solve some of their health problems are introduced.
Technical knowledge is essential in solving many
problems, but in general, people's behaviour is not
so much guided by technical knowledge but rather by
commonly held ideas and practices. By taking the
preferences of socio-cultural aspects into account,
in their designs of health programmes, planners can
reduce   the problem of bypass of clinics and hence
reduce the problem of inefficiency in the utilization
of the available health facilities.

Mwabu in his paper, Economics of Primary Health
Care in Kenya state that many people now agree that
health problem in the developing countries like Kenya
is not that of simply shifting health resources from
the urban-to-rural areas. This is so because the
current method of providing health care in such
countries are highly intensive in the use of both
physical and human capital. It is clear that a

a rural area like South Imenti division, there is
scarcity of capital and therefore with the existing
technique of providing health care in such an area,
an-urban-to-rural transfer of resources perse
will provide health services only to a very small
section of the rural population. There is therefore
a need to adopt a better approach in the provision
of health services.

Over the years planning in health services has
been concerned with buildings and facilities, but
now, it is important to move concern from these to
people's needs and functions of these facilities.
To do this it is important to adopt or design an
approach which should address itself to the needs
of the majority of the people in South Imenti. It
is true that everyone fears sickness and would like
to be assured that there is skilled help available
close by, and this could be done more by prevention
than by treatment alone.

Drainage and safe water for example have
everywhere made major and sometimes dramatic improvements
in people's lives, far greater than any drug or
treatment, even antibiotics [9]. People's health depends
far more upon what they do than upon the efforts of
health service workers, however numerous. In many

countries of the developing world bilharzia is an
increasing severe and handicapping problem. If
people continue to go into water that has become
polluted by urine or defecated into the streams
by people suffering from this disease, then the
number infected must continue to increase. If on
the other hand, people can learn not to infect their
water, or learn to protect themselves from the
water of streams and lakes already contaminated,
elaborate and expensive drug treatment of bilharzia
will be at an end. Health education is therefore
essential in rural areas like South Imenti if health
standards could be improved.

Since illness disrupts normal activities (impact
of disease on economic and social activities) especially
at critical times, such as the planting and harvesting
seasons (South Imenti people earn their living from
the farm) in the case of disease as malaria, an
effective approach should be adopted, so that it addresses
itself to this acute problem. Chronic and debilitating
diseases impair people's ability to concentrate,
students' ability to learn, and generally the overall
productivity. The infectious diseases could be
significantly reduced through good hygiene, early
diagnosis and treatment and immunization. Improvements
in water supply and water disposal would greatly
facilitate control of fecally related diseases, but

good personal hygiene, careful preparation of food, and use of safe water, cost very little yet mean a lot in people's health.

A major concern is therefore how we can apply the existing knowledge and resources to eliminate some of the prevailing health hazards and promote the state of health of the people of South Imenti.

If present trends continue, the existing gaps will be further widened. For example, the differences between urban and rural health services will be accentuated. The health services will continue to commit themselves to costly and specialized medical care, requiring most of the health budget, and thus the services will become even less accessible and unable to meet the demands of the majority of the population. Furthermore, if services continue to be provided as a fragmented and isolated manner, some problems of human development may be solved but others may be worsened or new ones created. For example, some activities of the health services may have succeeded in lowering mobidity and mortality rates in subsistence level community as South Imenti. However, without food production being increased, one problem has been solved (that of reducing infant and child mortality rates) and another problem created (worsened nutrition due to food shortage). Unless

the problems of subsistence levels and poverty are tackled together, imbalance will occur [10].

1.3   OBJECTIVES

The objectives of this study are:

(1)   To investigate the existing situation of rural health services in terms of location and distribution within the study area.

(2)   To evaluate the utilization of the existing health facilities and reasons for so doing.

(3)   To find out the extent to which the health facilities provide their services to the people, given the existing constraints.

(4)   Propose an approach for rural health services.

1.4   ASSUMPTIONS

(1)   Health care services in rural areas are qualititively and quantititively inadequate.

(2)   The urban-to-rural transfer of health facilities is not the answer to health care improvement in rural areas but a more realistic approach should be adopted.

(3)   People in rural areas are not fully consuming
       the full extent of modern health care being
       provided to them at present.

(4)   The general level of health in rural areas
       is largely determined by the socio-economic
       status and education of the people.

1.5   SCOPE OF THE STUDY

     The study examines the major factors which
influences and determines the distribution and
utilization of health services in South Imenti
Division of Meru District. The study looks at South
Imenti Division in relation to Meru District in
identifying the factors determining health status of
the area. Emphasis is given to both spatial and
non-spatial aspects that have influenced the state
of health prevailing todate.

     The study specifically looks at the distribution
of health establishments throughout the study area
in relation to the number of health services,and the
activities of other related institutions in promoting
or hampering better health of the people.

     A compilation of the existing health   and health-
related facilities and also their levels of service

is treated in this study. The level and quality of health services provided have been assessed with an aim of establishing their effectiveness. The study also examines the seasonal changes in patterns of socio-economic activities in the study area and its implications on the utilization and management of health services.

Health care do not mean medical care perse but encompasses services in such sectors like agriculture, education, commerce, etc. and therefore this study looks at all these health-realated services in the District in general and South Imenti Division in particular.

This study has has not however attempted tc look in detail into the architectural or engineering aspects of the facilities.

1.6 LIMITATIONS

During the course of the study a lot of time was wasted seeking for clearance and access to required information. It was particularly difficult to generate information from the private and the Catholic provided health facilities. On the whole, however there was a lot of cooperation from the health officers in the Government and P C E A sponsored health facilities and from the community in general.

South Imenti Division is quite a large area
and given its topographical characteristics it was
difficult to visit all the parts to assess the overall
impact and performance of the health services.

1.7 RESEARCH METHODOLOGY

The methodology used in this study is that of
close examination of the problem from a broad world
survey, then in the developing countries like Kenya
and finally in South Imenti Division of Meru District.

The study has drawn information from various
books, International Organizations and Government
documents, Government officers that influence or
are likely to influence development in the study area.

Three methods of data collection was adopted
for this study. The main method used was the field
survey which involved the administering of questionnaires
with a structured interview schedule (Appendix No.1 and 2)

There were two types of questionnaires, one
administered to the households in the study area
and the other administered to a medical officer in
the health facility within the study area. Most of
the questions were open-ended to tap information not
anticipated. According to the 1979 population census

the population of South Imenti was recorded as 103,543
people with a total household number of 18,562.
For the household field survey, a simple systematic
random sample of 10 percent (186) households was
taken. Every tenth of a household in every sub-location
was interviewed until the sample required for that
sub-location was got. It was however only possible
to interview 150 households instead of the 186,
taken as the sample size.

The second questionnaire was for the individual
health facilities. The initial aim was to have an
interview with a medical officer in all the facilities
in the study area. This idea was however abandoned
after getting difficulties to get any information from
the private clinics, which were run by clinic officers
who were not ·licenced practitioners. It was only
possible to interview twenty officers of different
health facilities.

The other method used to attain information was
informal and formal interviews which were conducted
with leading personalities such as the District
Medical officer, District Officer (S. Imenti) chiefs
and other opinion leaders.

The questionnaires were written in English but
the actual interviewing was conducted in Kimeru and
English depending on the respondent in question.

The last method of data collection was from
materials and reports, books and articles from
international organizations, Government, University
Library and many other sources.

The examination of health services in South
Imenti help in the understanding of the causes of
the problem which are then analysed to find out
what could be done to solve the problems. An
important aspect of this study is the identification
of those factors which form the basis for the study
and also attempts are made to find out planning
implications and solutions to health care problen.
It is for this that relevant data to the study has
been provided analysed manually and used in the study
to support observed or expected occurrences.

1.8   DEFINITION OF THE STUDY AREA

South Imenti Division is one of the seven divisions
of Meru District. The district covers an area of 9,922
square kilometres and stretches from latitude 0° 26'
South to 0° 42' North and longitude 37° 2' East to
38° 26' East. The district shares borders with
Embu District to the South, Kitui and Tana River
to the South-east, Isiolo to the North and North-East,
Laikipia to the West and Nyeri and Kirinyaga to the
South-west. Its District headquarters, Meru Town,

is some 200 kilometres north of Nairobi. The District
as earlier pointed is divided into seven divisions
each with a Divisional District Officer. These are,
South Imenti (study area), North Imenti, Nithi,
Tharaka, Tigania, Igembe and Timau Divisions. The
divisions are further sub-divided into 38 locations
and 137 sub-locations (Map 1, 2).

Politically the District is divided into seven
constituencies represented by seven elected Members
of Parliament, i.e. Meru Central corresponding to
South Imenti (study area), Nyambene North corresponding
to Igembe Division; Nyambene South corresponding to
Tigania Division; Meru south corresponding to Nithi
Division; Meru South-west covering most ofthe North
Imenti; Meru North-West covering part of North
Imenti and the whole of Timau; and Meru South-East
corresponding to Tharaka division.

There are also two major local authorities,
namely Meru County Council and the Municipal Council of
Meru. Under the Meru County Council area we have Chuka
and Maua Urban Councils.

South Imenti Division (study area) lies only
about ten miles to the south of Meru town which is
the District headquarters. The Division is bordered
by river Mariara and Thingithu to the north, mount

MERU DISTRICT IN THE NATIONAL CONTEXT
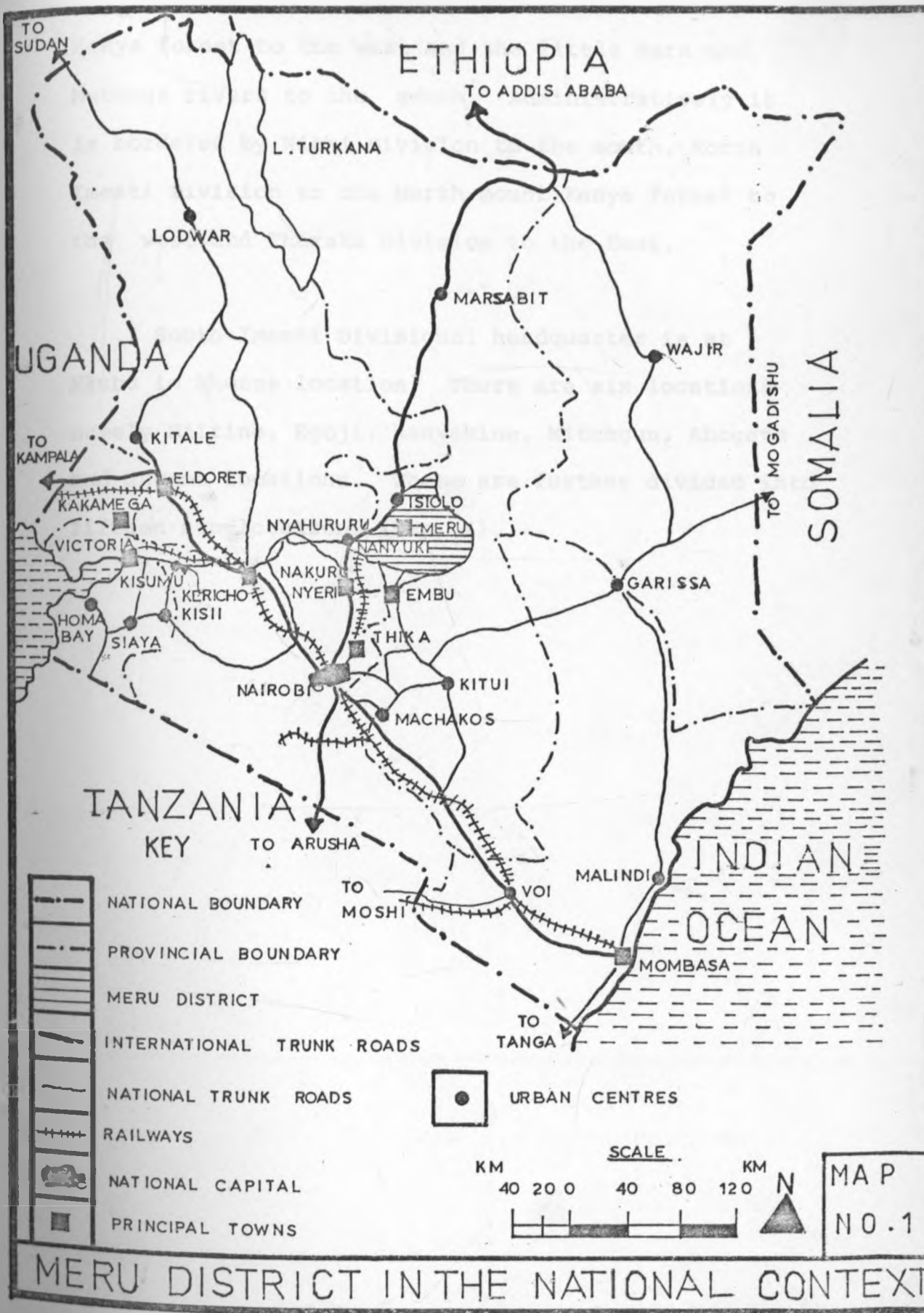
Source: Kiambi (1980).

Kenya forest to the west and the little Mara and
Mutonga rivers to the south. Administratively it
is bordered by Nithi Division to the south, North
Imenti Division to the North mount Kenya forest to
the west and Tharaka Division to the East.

South Imenti Divisional headquarter is at
Nkubu in Nkuene location. There are six locations
namely Miitine, Egoji, Kanyakine, Mitunguu, Abogeta
and Nkuene locations. These are further divided into
fifteen sub-locations (Map. 4).

ISIOLO DISTRICT

NORTHERN
GRAZING
AREA

IGEMBE

LAIKIPIA
DISTRICT

TIGANIA
MAUA

MERU
NATIONAL
PARK

NORTH IMENTI
MIATHENE

MERU

MOUNT KENYA
FOREST

NKUBU

SOUTH
IMENTI

THARAKA

MARIMANTI

NYERI
DISTRICT

NITHI

CHUKA

KITUI DISTRICT
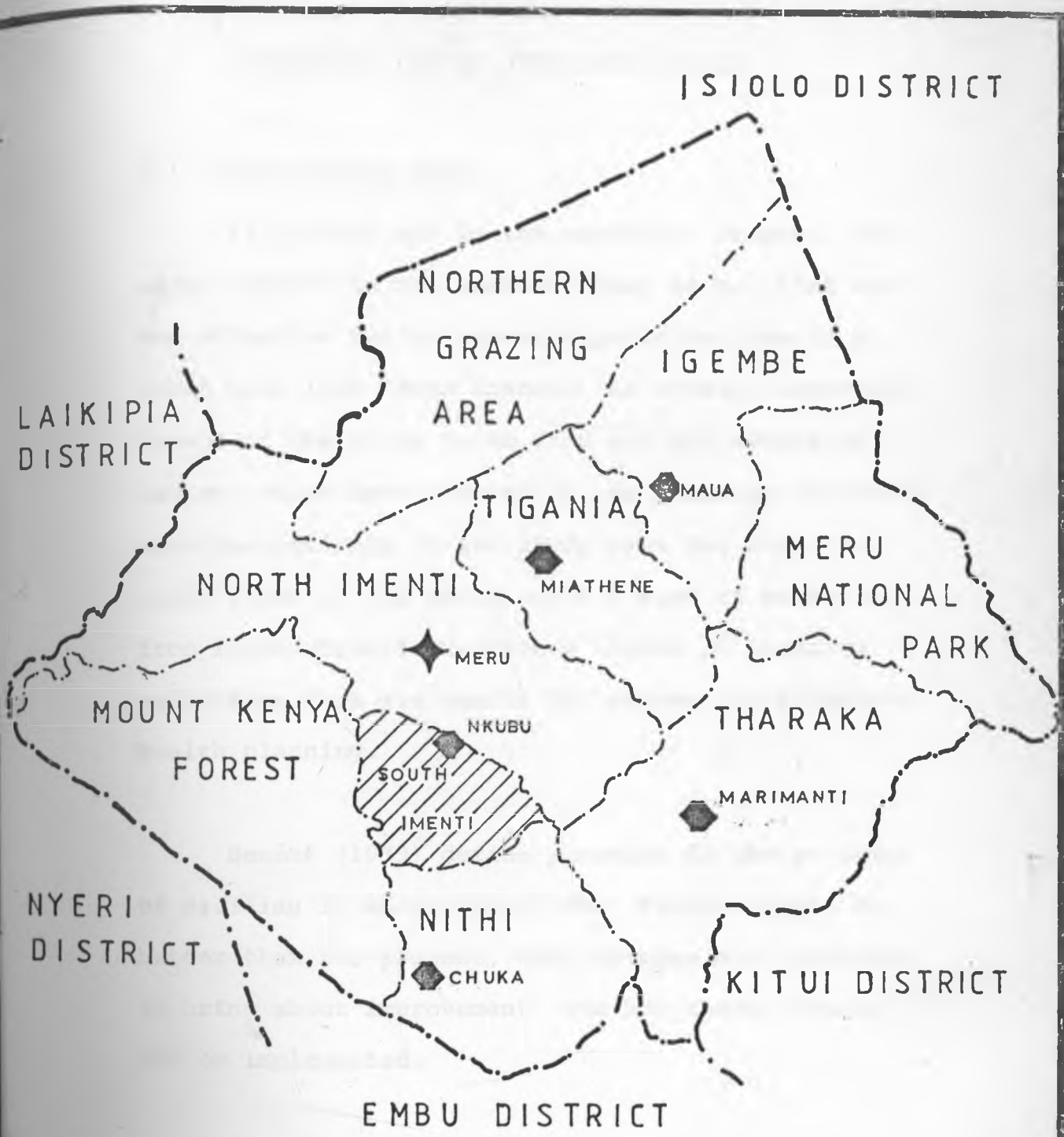
EMBU DISTRICT

KEY
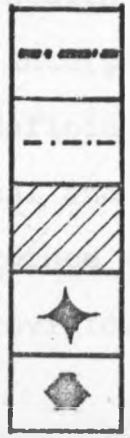
DISTRICT BOUNDARY

DIVISIONAL BOUNDARY

STUDY AREA

PRINCIPAL TOWN

DIVISIONAL HEADQUARTERS

SCALE

KM 5 0 5 10 15 20 25 30 35
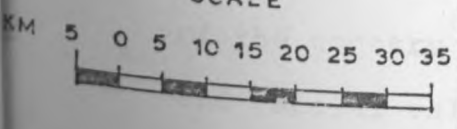
MAP NO. 2.

N

MERU DISTRICT ADMINISTRATIVE DIVISIONS

CHAPTER TWO

LITERATURE REVIEW /NATIONAL POLICY

2.1   THEORETICAL BASE

As pointed out in the previous chapter, the
major concern in the present study is to find out
how effective health planning could be done in a
rural area like South Imenti. An equally important
aspect of the study is to find out the nature of
changes which have occured in the planning of health
services not only in the study area but also in
other parts of the world, with a view of selecting
from international experience aspect of planning
and design that are useful for proper and effective
health planning.

Bennet (1979) define planning as the process
of deciding in what respect the future should be
better than the present, what changes are necessary
to bring about improvement, and how these changes
can be implemented.

Kenya with her scarce economic resources can
only achieve efficient health care services only
by making an effort to interpret the existing
situation and clearly defining feasible goals in
relation to the technical and economical resources
of the country in accordance with her cultural·
and social values. Provision of health services in

rural communities like South Imenti is subject to a cyclical development dependent more on the country's economic, social and political factors than on medical technology. In order to have a fair allocation of resources it is essential to combine the planning and provision of rural health services with local community needs and political aspirations, social medical needs, economic factors, educational programmes and other related aspects.

Over the years planning in health services has moved from concern with buildings and facilities to concern with people and their needs and functions. This is the reason why the essence of health planning i.e. to improve the health status of the population involved and not just providing health care that is not helping anyone. It is for this reason that in this study a review has been done on various studies carried out regarding the planning for health services in other areas.

Mwabu (1980) in his paper Economics of Primary Health Care in Kenya argues that the real issue in health care in less developed countries is about:

(a)   the technology that is to be used to provide
        health care to rapidly expanding rural populations
        and

(b)   the types of institutions through which this
        care is to be provided.

Mwabu continues to argue that the conventional
method of providing health care in large hospitals
equipped with highly trained medical personnel is
not improving the health conditions of their people.
He further points out two factors which he considers
to be the limiting factors to the conventional
method.   These are:

(a)   Its capital intensity that pushes Governments
        of less developed countries to a "wall" of a
        very severe   resources constraint in providing
        people with modern health services and

(b)   Its "unfairness" because its price tag dictates
        that the majority of people be left out without
        the modern health services.

        When planning for health services in South
Imenti Division, there is need to look at the effective,
cheap and available technology which could be used
in the provision of health services in the area. It
is important to note that in a rural area like
South Imenti there exists a labour intensive
technology that can be used to cover virtually all of
the area population with the desired type of modern

health care. This technology of health care is
characterized by a very high proportion of paramedical
staff to doctors.

Lambo (1977) points that health must be viewed
in terms of overall social well being. It is evident
however that inspite of tremendous strides in medicine
and technology, the health status of the majority of
people in most areas especially in rural areas remains
low.

The major problem most health planners addresses
themselves to in most cases is that of scarcity of
health facilities (physical and human). The health
planners take the scarcity of resources as the limiting
factor to health care. The objective of the Kenya
Government is to provide for more health facilities
especially to the underserved areas. It is clear that
additional of rural health facilities will improve
the statistical health care coverage in the rural
areas in the sense that the population/health facility
ratio will decline, but the same cannot be said of
health status of the people concerned (as measured,
for example, by a decline in mortality and morbidity
rates) over the same period.

Mwabu puts the answer to the health problem
not to the number of the health facilities provided

but the extent of utilization of the available health
facilities by the population.

Mwabu (1980) state that in Kenya, one of the
problems that the Government has encountered in
providing health care to the rural areas, is that
of persistent under-utilization of some of the
existing modern health facilities despite the fact
that the money prices of health care at these facilities
have been set equal to zero.[11]

Mwabu contend that whenever an under-utilization
of health facilities exists, it means that goods and
services that people want, have been foregone in order
to provide health care that is not helping anyone.

Yepez et al., (1970) points that the utilization
rate of modern maternity facilities in the rural
areas in Kenya ranges from 0-30%. This means that,
the extent of under-utilization of pre- and post-natal
rural facilities is at least 70 percent.

King (1966) has reported that 40 percent of
the attendaces to a rural health centres in Kenya
were from people who lived within five miles of
the centre. The majority of the people (60%) lived
more than ten miles away.

The argument here is that planning for health
services in South Imenti will only have the inteded
health effects by getting a solution to the problem
of facility under-utilization especially of the
available health facilities by the populations
concerned. In order to understand and have a proper
planning for health services, it is important to
look at various studies done on the utilisation of
health services. These studies have categorized the
factors influencing utilization of health care into:

- Economic factors
- Demographic factors
- Socio-cultural factors
- Nature of Health services.
- Combination of several factors.

Below is a review of some of the studies
touching the above subheadings.

Authors such as Bartkus and Anderson, Mechanic
and Kimani have discussed these economic factors
in relation to people's use of health services.
Anderson and Bartkus quoted by Kimani argues that
most of models about utilization of medical care
contain a measure of the individual ability to
pay for medical care. There is also a relationship
between income and physician visits. Kimani (1971)
quote Mechanic as saying that:

..."One of the most important health services
based almost exclusively on consumer decisions
is the utilization of physicians and here we
find a clear relationship of the linear type
by income, with higher income persons
utilizing the physician to a greater extent
than the lower income persons 12"

It is important to note that many factors are
inter-dependent and therefore in this case it is
difficult to identify what factor independent of
others influence what behaviour. Maina quotes
McKinlay, as showing how the method of payment
may influence behaviour and the quality of care
received. Maina shows the limitations of the economic
explanation, because even when cost barriers are
removed, wide variations still remain in the
utilization of medical care. It is clear that
economic factors influence utilization of medical
care and perhaps a more acceptable view to use
Leibau words is:

"numerous individuals in developing societies
particularly those of a relatively high social
economic level and educational background,
may utilize modern medicine more or less
exclusively" 13".

The other factor influencing utilization of
health care is demographic factors. The demographic
factors here refers to the age, sex and size of
the users of health services as well as the morbidity
patterns of a certain area. Demographic factors
are also responsible for poor health conditions hence

there is a need to understand these factors if
effective policies are to be formulated. According
to health sector policy paper published by World
Bank 1980 it is stated that a number of health risks
derive from high fertility rates in developing
countries. When large numbers of people live in
poor households located in crowded, insanitary
surroundings, communicable diseases spread easily,
and high mortality and morbidity rates, in turn,
induce families to have many children so they can assure
themselves of surviving progency. Demographic
factors may influence health at the community level as
well as at the family level. Population pressure on
the land may lead to overcropping, soil degradation,
poor nutrition for an entire community.

Burke (1974) observed that the best predictor
of utilisation of health services was perceived
morbidity. This is consistent with Mwabu's and
Anderson's studies which found the need for medical
care to be the most important factor in utilisation
of health services. Kimani (1971) quote Burke as
stating that, when need for medical care is held
constant there is an association between utilization
and attitudes at the low level of need. He observed
a relationship between people's positive attitude
towards a health service and their decisions to
utilize that health service. A greater proportion of

females than males utilized the services.

Mwabu show that women are the greatest
consumers of health care which could be explained by
values of social order in that women seek health
care for conditions related to activities of child
birth besides other illments. There is under-utilization
of health services by the youth during adolescence.
Kimani quote Drucker as explaining the adolescents
underutilize these services not because they are
healed but due to the fact that most of their illnesses
are related to behaviour which is disapproved by all
adults including those who provide the services.

Kurt Scwarz (1975) looks at age, sex, occupation
and education and other components which define the
individuality of the community as the demographic
factors which determine the characteristic of a
community hence the art in sound medical planning
lies in determining the significant and significance
of the population characteristics. Schwarz contents
that the age composition of the community is a valuable
indicator not only for certain aspect of the need and
demand for medical care but also for the provision
of the care and its utilization. He further argues
that sex ratio influences the number of gynaecological
and obstetrical disorders but less obvious implications
exist.

In planning for health services therefore
there is need to know the community sex ratios.
Schwarz argue that:

> "Women live longer, develop certain diseases
> more frequently than males, for example
> rheumatoid arthritis, iron deficiency anaemia [14].

There are many other instances which stress the
importance of knowing how many women and how many
men there are in a community.

> Schwarz continue to point out that:

> "At various age milestones, the sex factor may
> reveal interesting disease patterns as can be
> seen in accidents when young boys have more
> accidents than girls. With the onset of puberty
> and childbearing there are hormonal disorders.
> Increasing age is accompanied by menopausal
> disorders and psychiatric disorders [15]"

Occupation is also an important indicator which
not only influence need and demand for medical care
but also for the provision of that care and its
utilization. Whether one is a student or a farmer
there are specific occupational risks and diseases.
It can be mentioned for example that being a housewife is a
particularly hazardous occupation when considering such
disorders as domestic accidents.

It is therefore the duty of a health planner
to ask what bearing can these hazards be expected to
have on the health services? Schwarz considers three

major factors as determining the present and future

requirements for health services which could be

estimated by a knowledge of:

(a)   The present occupations in a region;

(b)   Any new or future developments;

(c)   The arrangements planned for any alteration

        to the existing situation.

Details of existing occupations are required if a

baseline is to be estimated for the future needs

and demands for health care.

    Collver (1967) has done a study of a group of

obstetric patients from a low-income group in Detroit

area. Collver found out that education tended to

increase the likelihood of making use of health

services. Married women visited the clinics more

often than the single women and Catholics showed low

rates of attendance at all the clinics, but the

Catholics who attended church services irregularly

attended family planning clinics more than the protestants.

    Schwarz (1975) takes literacy to be of real

importance, rather than education, since literacy

is the basis of communication, which ensures the

optimal use and smooth running of a health care system.

He contends that within the narrow confines of

adequate communication, and it has been found that there is a vast difference between the ability to read and write and the facility for capable communication. According to Schwarz the spoken word whether direct, by telephone or by recording may make the difference btween the success or failure of some health services. Other influences are also at play, some societies, for example, do not encourage the education of their women, which immediately requires that the services planned for males must be on a different basis from those inteded for the females.

Kimani quotes Rosenstock as having concluded that decision to seek health care is influenced by demographic factors as well as by perceived soverity of the disease, perceived susceptibility and socially and individually determined beliefs about efficacy of alternative action.

Diesfeld (1973) discusses the factors which determine the functional interrelations between the hospital and its surrounding population. He points out that attractivity of the hospital in terms of size, staffing, equipment and reputation are very important factors.

It is important for health planners to consider both distance in distribution of health services as well as topographical factors which should include the

mode of transportation when planning for health
services. If the cost of putting up health facilities
in some parts of the area is a major limiting factor,
health planners could plan for relieving facilities
as ambulances, mobile clinics and satellite health
centers.

Kimani has quoted a study done by O'Keeffe
with the finding that 53 percent of all patients
ever admitted in Macha hospital were females aged
between 20 and 49 years. O'Keeffe concludes that
distance from the hospital and availability and
utilization of other medical sources such as traditional
medicine are factors that influence utilization of
a given health service.

Adeoku and Odebiyi (1977) pointed that the
main deterrent factors of utilization of rural health
services are that these rural health services are not
sufficiently available, the few that are available
are far from the communities. Even when the distance
is not too great to be a barrier, resources such as
drugs are inadequate or totally unavailable.

Mwabu (1984) state that for a health facility
to be utilized at the planned rate, it should not
only be accessible to patients, but its services
should also be of acceptable quality. This is the

acceptable standard of quality of service, as
perceived by the patient, and not necessarily, as
judged by the health professionals. Mwabu further
argues that inorder for the health professionals to
be successful in their attempts to maximize the health
status of a given community, they need to know, among
other things, the factors that patients believe wrongly
or rightly, to be the determinants of quality health
services. Otherwise, increase in the supply of
improved health services will not be matched by the
expected increase in their consumption. Mwabu gives
an example of a case where patients have come to
associate   quality health care with injections in
clinics, the health professionals need to educate patients
about other available forms of treatments that they
know to be cheaper, less risky or more effective than
treatment by injections.

Mwabu's arguement here is that Public health
facilities in the rural areas are under-utilized
because rural residents might be facing other forms
of health care that they rate better than Government
facilities. Lack of appropriate health information
in a community can also cause under-utilization of
public health facilities even when competion from
alternative health facilities is not present.

New strategy for health services should be

designed to be acceptable to the community and the

success of any programme of health require that health

planners understand the community, and community

involvement in programmes of health, is essential and

has resulted from changing nature of public health.

Suchman (1967) points that:

> With the growing emphasis in public health
> on prevention and early detection of disease,
> there is an increasing need to enlist voluntary
> participation of the public in health programmes.
> Without such cooperation, many programmes are
> destined to failure or reduced effectiveness".[16]

If we take the World Health Organization definition

of health that:

> "Health is a state of complete physical, mental
> and social wellbeing and not merely the b
> absence of disease or infirmity"

then we find that planning for health services in South

Imenti entils more than only one sector. Both

agricultural productivity and health status in South

Imenti should be improved and indeed it could

just alter the existing pattern of utilization of

health facilities.

2.2   OVERVIEW OF RURAL HEALTH SERVICES IN KENYA

2.2.1 Population, Health and Development:

According to the Integrated Rural Health and

Family Planning Project Report (1983) published by

the Ministry of Health, the population of Kenya was

close to 16 million in mid-1980.   Its current

natural rate of increase is 39 percent per annum.
Fertility appears to have increased since the 1950s.
Health has improved remarkably in the last three
decades, as reflected by sharp declines in the crude
death rate and infant mortality and a correspondent
sharp increase in life expectancy. The comination of
rising fertility and falling mortality has resulted
in a high population growth. Because GDP increased
at an average annual rate of 6.6 percent in real
terms over the period 1964 - 73, the standard of
living rose. The growth of GDP has slowed down since
1973, however, and in the last two years it has
grown more slowly than population.

2.2.2. Population Size and Growth Rate

Table 2.1 presents estimates of the crude
birth rate, crude death rate of natural increase
in Kenya since the late 1940s. The rates of natural
increase in table 2.1 are roughly equal to population
growth rates, since immigration and emigration have
been negligible. The main reason for the rising
rate of population increase is the steep decline in
the death rate. The crude birth rate has increased
only slightly since 1948.

Table 2.1 : <u>Kenya: Selected Census Data</u>

Census	Census Population Millions	Estimated crude Death Rate per 1,000 population	Estimated Crude Death Rate per 1,000 Population	Rate of Natural Increase
1948	5,800,000*	50	25	2.5%
1962	8,636,000	50	20	3.0%
1969	10,943,000	50	17	3.3%
1979	15,291,000	53	14	3.9%

* Corrected for undercount.

Source: Population Censuses, Kenya, 1948, 1962, 1969, 1979.

2.2.3 Fertility

Fertility in Kenya is high, was high in the past and appears to be increasing. Ministry of Health has estimated that at the time of the 1948 census, the total fertility rate was between 6.0 and 7.0. The censuses of 1962 and 1969 indicate total fertility rates of 6.8 and 7.6 respectively. The Kenya World Fertility Survey indicated a total fertility rate of 8.1 for 1977 - 78, higher than in any other country.

The Kenya World Fertility Survey also revealed wide differences in fertility between urban and rural areas. Women in the two main metropolitan areas, Nairobi and Mombasa, have a total fertility rate 2.5 lower than that of rural women, while the total fertility of the non-metropolitan urban sector

is intermediate.

According to Integrated Rural Health Report
(1983) the relationship between education and total
fertility is non-linear. Women with one to four
years of schooling are the most fertile, those with
no formal education slightly less fertile, while
women with five or more years of education are
appreciably less fertile. Postponement of marriage
is the chief cause of the lower fertility of better
educated women.

2.2.4 Mortality

Table 2.2 shows the trends in the Crude Death
Rate, the Infant Mortality Rate, and life Expectancy.
Life expectancy has risen from about 44 years in
1962 to about 53 years in 1979. Current life
expectancy estimates are 61 years for the world as
a whole; 72 years for developed countries; 57 years
for less developed countries; and 49 years for Africa.

Table 2.2 : <u>Kenya : Mortality Trends 1948 - 79</u>

.Year	Crude Death Rate	Infant Mortality Rate	Life Expectancy
1948	25	184	34
1962	20	n.a.	44
1969	17	119	49
1979	14	87	53

Source: Ministry of Health : Integrated Rural Health
         Family Planning Project - October, 1983.

The dramatic fall in infant mortality shown in
table 2.2 leaves the rate still more four times higher
than the average (20) for developed countries, but
well below the average for developing countries (110).
According to the Ministry of Health report (1983) in
Africa, Kenya is one of only eight countries (out
of a total of 52) with an infant mortality rate below
100. The decline in infant mortality reflects the
rise in the standard of living and the improvement in
maternal and child health (MCH) services.

2.2.5. <u>Morbidity</u>:

Information on health status in Kenya is
limited. Table 2.3 present countrywide data on the
number and distribution of outpatient cases at
District Hospital level and below in 1978.

Table 2.3 : Kenya: Outpatient Cases in District Hospitals,
Health Centres, Health Sub-centres and
Dispensaries - 1978.

Type of Disease	No. of Cases ('000)	% of total cases
Acute Respiratory Infections	5,881	31.2
Malaria	4,417	23.4
Diseases of the Skin	3,262	17.3
Diarrheal worms	1,664	8.8
Intestinal worms	1,126	6.0
Accidents	1,120	5.9
Gonorrhea	507	2.7
Measles	292	1.5
Pneumonia	288	1.5
Other	358	1.7
Total	18,915	100.0

Source: Ministry of Health, Kenya Health Information

Bulletin, Volume 3, November 2, 1979.

The prevalence of infection and infestation
reflects the widespread poverty in Kenya. Malaria,
though absent at higher elevations, continues to be
an important cause of morbidity and death. While
the table does not show age breakdown for the
different types of diseases, most of the cases of
respiratory infection, diarrhea and infestation are
among infants and young children.

2.2.6. Nutrition:

A nutrition survey conducted by the Central Bureau of Statistics in 1977 indicates that, while the incidence of severe protein energy manutrition is rather low in Kenya, mild and moderate protein energy malnutrition affects about a third of rural children.

There is also some evidence of malnutrition in adults. A survey conducted in 1977 concluded that 38% of road workers in Nyeri District (Central Province) and 41% in Kwale District (Coast Province) had a weight-for-height below 85% of internationally accepted standards.

2.2.7 Population Growth and Socio-Economic Development

The present rapid population growth retards Kenya's socio-economic development in three main ways:

(i)   By increasing pressure on land and other natural resources, and thus tending to reduce output per capital.

(ii)   By increasing unemployment; and

(iii) By requiring a greater proportion of public expenditure to be devoted to meeting basic human needs.

Although Kenya is a large country, more than 80% of cultivable land has a very limited potential on the basis of present technology. In some areas, landlessness has emerged as a significant phenomenon; one study estimated that 11% of rural household are landless. Attempts have also been made to cultivate marginal lands without adequate safeguards, with the consequences of degradation of soils and deforestation.

According to the Ministry of Health Plan for implementation report (1983), if fertility remained constant, the number of workers would rise from 4.6 million in 1970 to 8.5 million in 1990 and to 12 million in 2000. Modern sector employment absorbed only 17% of the total labour force in 1976; the rest worked in traditional agriculture and in the informal sector. The report further reports that roughly 30% of the total number of households in 1974 had incomes which made them absolutely poor. If Kenyan economy could not provide gainful employment for all its workers during the past decade, when GDP was growing at about 6.5% per annum, acceleration in the expansion of the labour force (which would occur if fertility does not decline) is likely to complicate the problem still further, especially since GDP is expected to grow at only 4 - 5% per annum throughout the 1980s.

A third important consequence of rapid

population growth is the increased public expenditure
required to meet basic needs for education, health,
water and housing. According to Ministry of Health,
Integrated Rural Health and Family Planning Project
Report (1983) Government outlays on all services
amounted to K£54 million (1970 prices) per year on
average during 1970 - 75, or about 30% of total
budget expenditures. It is estimated that to provide
these services for all by the year 2000, annual
government expenditure for these purposes would have
to increase to about K£ 225 million (1970 prices)
during 1995 - 2000, if fertility remains at its present
level.

2.2.8 Kenya's Rural Health Delivery Network

The Integrated Rural Health and Family Planning
Project Report (1983) state that health services
for Kenya's 13 million rural population (80% of
total population) are provided through a network of
1205 RHFs. 950 dispensaries, 44 Health Centres
and 210 Health Centres. Most of them have transport
means available to refer patients to the district
hospitals. On an average one Rural Health facility
is available for about 11,000 people in rural areas,
42% of them have access to health facilities within
4 km. distance and some 75% within 8 km. or 2 hours
walking distance from their home. However distribution,
accessibility, quality and utilization vary widely.

The distribution of Rural Health facilities
follows by a large a pattern by which a smaller
number of Rural Health facilities can serve larger
population groups in densely populated areas (Western
Province 1 RHF for 25,000 people) whereas in
sparsely populated areas more facilities are needed
to serve relative smaller population groups (like
in the Coast Province). However, in Eastern Province
often large population groups share one RHF to which
infact only a minority of about 30% of the target
population has reasonable access whereas in Central
Province even from small population group a R H F
is easily accessible. Aware of this uneven distribution
and to optimize the health services for planning
future projects, Ministry of Health has listed
for each district the facility/population ratios as
well as the facility/area ratio and has applied to
both factors a weighting system to identify for each
district, the marked, need and priority for new
RHFs.

The Ministry of Health has found that the size,
physical conditions and the supportive infrastructure
of the RHF vary widely within Kenya according to health
centre survey carried out 1973/74 by MOH. The data
of the survey, regarding physical conditions of
existing facilities, the needs and related costs for

improvements, number of individual buildings of a
health facility etc. have been useful for overall
planning but largely proven outdated or not reliable
in cases where Ministry of Health/Ministry of Works
decided to improve or extend individual facilities
under the ongoing RHF improvement programme.

2.2.9 The Organization of Rural Health Services

The Ministry of Health, where policy and
administrative decisions are made, is at the centre.
The civil service head of the Ministry is the Permanent
Secretary, and the professional branch is headed by
the Director of Medical Services. At the provincial
level the Provincial medical officer is responsible
for all the health services. In each district, health
services are administered by a District Medical Officer
of Health.

In 1970 the Central Government took over rural
health services, which until then had been administered
by local authorities, with a view to reorganize and
standardizing them. The first steps in the development
of a systematic model for the provision of rural health
services were taken in 1972, when the Ministry of
Health introduced the concept of Rural Health Unit
(RHU), a geographically defined health administration
unit within the district. The country's 40 districts
(i.e. excluding Nairobi district) were subdivided into

240 RHUs. The plan of implementation Report (1983)
puts the average population per RHU at present to
about 54,000, but there are wide variations. Each
RHU was to have one of its health facilities, preferably
a Rural Health Centre (RHC) or hospital, designated
as the RHU headquarters. Staff at RHU headquarters
were to provide technical supervision and support to
the staff of the other rural health facilities (RHFs)
in their RHU and hold regular clinics in those
RHFs. The RHU headquarters was to serve as the
immediate referral point for other RHFs in the RHU.
Six rural health training centres were established
in the mid 1970s to provide team training for RHU
staff.

The MOH is upgrading selection dispensaries into
RHCs in order to enable all RHUs or a hospital
for headquarters. The Integrated Rural Health
and Family Planning Project Report (1983) state
that at present, 57% of all RHUs have a RHC for
headquarters, 23% a hospital, and the rest have
dispensaries. In the typical RHU, a RHC is the centre
of a cluster of several dispensaries which provide
first contact outpatient curative services and, in a
few cases, maternal and child health (MCH) care and
family planning (FP). In general dispensaries are
heavily utilized in most areas. A 1973/74 MOH
survey found that the number of outpatients served per

month in dispensaries varied from 150 to 9,000, with
an average of 2,200. A dispensary is usually staffed
with an Enrolled Community Nurse (ECN) and a patient
attendant, but in some areas dispensaries are often
staffed by patient attendants only.

RHCs provide dispensary-type services to the
surrounding population and also serve as referral
points for dispensary patients. They provide a
wider range of outpatient curative services than
dispensaries and usually a full range of MCH/FP
services. RHCs also provide limited in-patient
services; they have small maternity units (usually
12 beds) for normal obstetrics, and a few observation
beds where patients can be held for a day or two to
determine whether transfer to a hospital is necessary.
Health centres perform very limited minor surgery,
all other surgical cases being transferred to hospitals.
Each RHC is headed by a Clinical Officer (CO) - a
paramedical trained for three and a half years to
perform most of the functions normally performed by
physicians in developed countries. The CO is assisted
by several E.C.Ns (the exact number depends on the
population served) and by one or two family health field
educators (FHFEs). Each RHC is also supposed to have
one public health technician and one laboratory
technician but there are as yet not enough of these
technicians to permit more than a few RHCs to obtain
a full complement of staff.

Outpatient RHC services, like those in dispensaries, are heavily utilized on average. The 1973/74 MOH survey found that the number of outpatients served per month in RHCs varied between 300 and 18,000 with an average of about 5,000 - RHC inpatient facilities, on the other hand, appear to be very little utilized. This is not surprising, because RHCs lack the physicians and inpatient back-up services (e.g. laboratories and blood banks, drug supplies) found in hospitals, so that it makes sense for patients seeking in-patient care to bypass RHCs for the district or mission hospitals.

In the Ministry of Health; plan of implementation report (1983) the Ministry agree that the quality of outpatient services at RHCs and dispensaries could be substantially improved. Nurses lack diagnostic and prescribing skills and overprescribing is widespread.

RHCs that are also RHU headquarters have not yet, for the most part, been able to give adequate support to their satellite dispensaries. COs are usually too busy with curative work at the RHCs to be able to spend much time visiting dispensaries. Lack of a vehicle in good operating condition is often an added constraint.

The main referral points for RHFs (i.e. dispensaries and RHCs) are district hospitals, which provide a wider range of outpatient services, as

well as peadiatric, medical, general surgical and
obstetrical and gynaecological in-patient services.
District hospital have a heavy patient load.

The District Medical Officer of Health and his
supporting staff are mostly preoccupied with the
administration of the district hospital, and pay
inadequate attention to the administration of rural
health centres and dispensaries. A similar situation
prevails at the provincial level, which needs
strengthening in the long-run to allow for greater
decentralization.

In Kenya an extensive network on non-governmental
facilities provides health services. The Ministry
of Health plan of implementation of October, 1983 points
that out of a total of 1204 RHFs in Kenya as of
mid- 1980, 374 (31%) were operated by non-Governmental
organizations (NGOs). Most of these NGOs, are
affiliated with the Catholic and other Christian
churches. Mission hospitals provide about 30% of
hospital beds in rural areas. The report further
state that a subsidy to NGOs (amounting to about 4%
of the total in 1980/81) is included every year in
the MOH's budget. Revenues from service fees and
drug charges currently finance about 75% of the
recurrent costs of NGO RHFs and Mission hospitals.

The present goal of the Ministry of Health is
to have one RHC for each RHU; in RHUs at present
without a RHC or a hospital. This goal will be
met by upgrading a suitable dispensary. To
minimize the wasteful duplication of services, the
MOH will take account of existing NGO RHFs when
planning the geographical distribution of its own
facilities.

2.2.10 Community - Based Health Care

The MOH, sharing the now generally accepted
view that the effectiveness of formal public health
services can be enhanced by encouraging rural
communities to take responsibility for meeting some
of their most basic health needs, has decided to
promote small experimental schemes of community-
based health care.

2.3 National Health Policy

Since 1978 the national health policy has not
changed much. During the present five year Health
Development plan (1984 - 1988) the Government remains
committed to the promotion and protection of the
health of the people, with particular emphasis given
to the rural population.

The rural health services, specific objectives

can be summarized to include the following:

(i)   Improve the existing but inadequate facilities
        along with continued and increased training of
        paramedical personnel so as to be able to staff
        rural health facilities and increase service
        levels.

(ii)   An increased emphasis on the promotion of
        community participation and of non-Governmental
        agencies in the participation of health services.

(iii)   To better utilize existing resources an increased
        emphasis will be placed on management and
        organization, particularly with regard to
        transport and equipment maintainance and on a
        decentralized drug supply system.

(iv)   Action research studies will be carried out
        to provide base-line data for evaluating and
        improving the performance of the health system
        in Kenya.

        The objectives of the rural health services
programme are two-fold:

(i)   To formulate strategies for satisfying basic
        health needs in the rual areas through
        co-ordinating and integrating the health services
        offered by the Governmental and non-Governmental
        organizations.

(ii)   To produce an overall plan which the donors can
       use as a guide for identifying and financing
       projects which most effectively will improve
       the delivery of rural health services.

       The major constraints the Government has been
facing include insufficient medical manpower,
shortage of funds; as well as inefficient management
and organization.   These constraints have created a
number of deficiences which the 1979-1983 Development
Plan has summarized as:

(i)   Inadequate and uneven coverage of the population
       due to insufficient health service delivery
       points, made worse by the rapid population
       growth and under-utilization of some existing
       facilities,

(ii)   Inadequate level of service because of shortage
       of medical manpower due to severe shortages
       of trainers and teachers in the health field;

(iii) Unsatisfactory patterns of utilization of
       manpower, since the majority of staff have
       been deployed in urban areas and in major
       hospitals;

(iv)   Shortages of drugs and other essential supplies
       due to the financial constraint and an efficient
       distribution system;

(v)   Unsatisfactory utilization of equipment and
        transport because of financial and managerial
        problems relating to operation and maintenance;

(vi)   Inadequate flow of health information and
        utilization of that information.

        In order to attain the health objectives the
Government of Kenya in her 1984/88 Development .
Plan, has formulated some major health policies.
The Government expect to put more emphasis on
increasing coverage and accessibility of health
services in rural areas. The Government realizes
that due to budgetary constraints development of rural
health infrastructure has lagged behind. During the
1984-1988 plan period public spending to maintain
and extend costly urban-based hospitals will be
contained, and the bulk of savings from the slowdown
of capital projects in urban areas will be redirected
towards small scale projects at the District and sub-
district levels.

        The Kenya Government recognises that the
preventive and promotive health programmes, if
adequately supported, can be cost effective. The
savings derived from this would be re-applied to the
support of preventive and promotive programmes and
further investment in rural health infrastructure.

The Government further feels the need for more
consolidation of urban and rural curative, and preventive/
promotive services. This is to be done through a
complementary rather than competitive approach in
allocation of resources and management of these
services. During the 1984-1988 Plan period there
will be increased emphasis on maternal/child health
and Family Planning services in order to reduce
morbidity, mortality and fertility.

It is also the policy of the Government during
the Plan period to strengthen Ministry of Health
management capabilities with emphasis at the district
level. The Government realizes that health as a
basic need, cannot be treated in isolation from the
overall development strategies of the Government,
hence there is need for increased interministerial
co-ordination.

Due to the fact that the demand for medical
services over the last two decades has substantially
increased and at the same time the cost of providing
these services has more than doubled, the Government
in an attempt to provide good quality medical
has formulated a number of approaches which have
the potential for directly or indirectly extending
the Government's financial capacity to provide services.
They are:

(i)   Maintenance of health facilities through
        harambee efforts.

(ii)   Community based health care.

(iii)   Establishment and improvement of amenity wards.

(iv)   Selective charges for hospital out-patient
        and in-patient medical services.

It is the policy of the Government during the
1984-1988 Plan period to continue to emphasis control
of communicable diseases with concentration on such
diseases as: cholera, diphtheria, dysentries,
influenza, leprosy, measles, mengingococcal meningitis,
whooping cough, rabies, tetanus, trachoma, malaria
and anthrax.

> "Activities in environmental health will be
> directed towards improving small-scale water
> supply, water quality control refuse and
> sewage disposal, food premises, housing,
> proper disposal of domestic and industrial
> waste and maintaining survillance at the parts
> of entry".[17]

It is the Government policy during the plan period
that the National Family Welfare Centre (NFWC) will
expand its roles in training of MCH/FP staff.

> "the flow of information and education,
> strengthening its monitoring and evaluation
> capacity, improving the contraceptive
> distribution system and increasing the
> number of family planning acceptors."[18]

The Government expects the service delivery points
(SDPs), to be organized to offer services on daily
basis, and Family Planning issues and practices to
be brought to public attention.

The Government expects the Ministry's health
education programmes to increase the public awareness
and involvement in preventive health practices
during the 1984-88 plan period. The community health
workers and health committees at local level are
expected to be trained in selected rural health
activities. The Government expects to introduce
Health Education Curricular into schools in
collaboration with the Kenya Institute of Education.
In terms of nutrition,

> "Specific activities include identification
> production and dissemination of appropriate
> nutrition education materials, improving
> infant feeding practices, monitoring and
> evaluation and research" 19.

This will be carried out during the 1984-1988 plan
period. Emphasis will be placed on use of local
food sources and new food technologies appropriate
to local communities.

The Government policy regarding Rural Health
Services is that it:

> "will continue to form the backbone of the health
> care delivery system. Co-ordination of rural
> health services will be accomplished through the
> Integrated Rural Health and Family Planning
> Programme. Emphasis will be given to improvement,
> upgrading and consolidation of the existing
> health infrastructure in order to optimize

The approach of Community Based Health Care (CBHC) is expected to be strengthened and expanded in order to reduce pressure on existing static health facilities in the rural areas. The Government expects the Provincial and District hospitals to continue their function as referral points for health centres and dispensaries, co-ordinating community based health care services, serving and teaching hospitals and administrative centres for rural health services.

2.3.1 Health Services Structure in Kenya

The activities of the Ministry of Health are carried out at the levels of Kenya's administrative units. These levels are the central, intermediate (Provincial and District) and peripheral.

At the central level we have the Headquarters where political, professional and administrative matters are coordinated and policy decisions made. The Director of Medical Services supervises all matters of preventive, promotive and curative health services. He is assisted by Deputy Directors who are responsible for various units, sections or divisions of health care activities.

The Provincial medical officer is the Ministry's health representative at the Provincial level. In the province there is a provincial hospital. The

The District Medical Officer at every district
coordinates all health services, both governmental
and non-governmental. The District Hospital provide
logistic and technical support to the health centres
and dispensaries in the periphery. At the community
level in divisions, locations and sub-locations,
health centres and dispensaries provide basic
curative, promotive and preventive services which
are however clinic based.

2.3.2. The Rural Health Project

The County Councils were responsible with the
rural health services in health centres, sub-centres,
and dispensaries before 1970. The central Government
made arrangement to second in part the District
medical officer to the local authorities in order
to give the technical advice to these local authorities.
There were various variations in the management of
these health facilities just as there were local
authorities themselves. There was no procedure
governing the running of the health facilities and
it was common to find serious mismanagement of health
care directed toward the rural community. In 1970
the Government took over the development of these
important services and the Ministry of Health was
given the responsibility of managing these services.
In 1971 the Ministry of Health decided to look seriously

into the problems that were encountered in the
provision of health care at the grass-root level
in the rural areas. In connection with this, the
Ministry sought the assistance of the World Health
Organization.

As pointed out by the Ministry of Health
document presented in the Alma-Ata Conference in
1978, the Ministry in an attempt to facilitate the
efforts directed towards identifying the problems
related to the rural health care, and eventually
to suggest possible solutions or approaches to the
problems, a team of personnel derived from the various
agencies concerned with health or health related
activities was formulated.

Two teams of committees were formed to look
into the situation and come out with a concrete
proposal or plan of action for the improvement of
rural health services. These were steering committee
and formulation committee. The steering committee
was responsible for resolving matters of major
importance while the formulation committee was
concerned with the formulation of the project or
plan alone.

The health situation in the rural areas and
formulation of proposal for the improvement of

rural health services was considered in 1972. The
problems identified that the Ministry of Health was to
deal with in provision of health care in the rural
areas were:

(a)   Poor and inadequate physical facilities

(b)   Understaffing.

(c)   Unsatisfactory standard of services.

The proposal made by the team to tackle these
problems cover health services in general, but
the main item of focus was training of para-medical
personnel for the rural areas. The primary health
problems expected to be tackled in an attempt to
improve the health situation in the rural areas were:

(a)   Maternal and Child health problems

(b)   Communicable diseases

(c)   diseases and conditions resulting from or
      provoked by inadequate environmental sanitation.

2.3.3   The Rural Health Unit Concept

     Under the rural health unit concept, health
facilities existing and developing had to be
assigned to serve the population in well defined
areas.   The area of a health unit is defined (in
the Kenya's Ministry of Health document presented
to the Alma-Ata Conference in 1978) as that occupied
by 50,000 people in 1972 which corresponds roughly

with 60,000 in 1979 and 70,000 in 1984. Each health
unit was expected to be served by one health centre
and a number of dispensaries. A health unit was
expected to comprise some 30 or more schools under
the Ministry of Education and day care centres
operated by the Ministry of Social services.

The health centre was expected to provide
technical leadership to health sub-centres and
dispensaries. They were also expected to provide
mobile clinics to the areas requiring them. The
proposed health care coverage was expected to be reviewed
from time to time. Other alternatives in
provision of health care was necessary if essential
health care has to reach individual and family in
the underserved and under-privileged rural areas.
It was felt that if the W.H.O. target of "health for
all by the year 2000" has to be realized there was
need to generate additional care for the community
through seeking other non-conventional approaches
that go beyond the traditional conventional
systems. Two approaches were proposed for the future
of the rural health services. These were conventional
clinic-based health care and community-based health
care system in which local health workers are
recruited and trained to establish a sound community
based care system that would answer to the definition
of primary health care, namely "essential health

care made universally accessible to individuals and families in the community by means acceptable to them, through their full participation and at a cost that the community and the country can afford".

2.3.4. Primary Health Care Concept

Primary Health care is a series of simple actions aimed at improving the well-being and health of the community. It is based on the philosophy of self-help that the people themselves, given knowledge and understanding, can best recognize their own needs and work for the solution of their problems.

Primary Health Care uses a minimum of resources already available in the community in attempting an integrated approach to health problems. PHC recognises that the health of a community is closely dependent on the total environment, education, transport and communications, and many other factors.

In January 1975, the Executive Board of W H O, concerned with the maldistribution and lack of coverage of health services, resolved to give top priority to the promotion of national health services. The Board pointed out that the majority of people in the disadvantaged areas of the world do not benefit from existing health services. Where health services are available they are often fragmented,

remain isolated from other services related to health,
and are not relevant to the life patterns and living
conditions of the population.

To overcome such deficiencies, W.H.O. recommended
a series of major national efforts to develop primary
health care services. The design of these services
must depart from conventional health service
approaches which tend to be western-style, urban-
biased, and expensive. These services must be built
up from a series of peripheral structures designed
for the context they are to serve. W.H.O. further
suggested seven basic principles which must be adhered
to for any successful primary health care effort.

The seven principles of primary health care are:

1.   Primary health care should be shaped around the
     life patterns of the population it should serve.

2.   The local population should be actively
     involved in the formulation of health care
     activities so that health care can be brought
     into line with local needs and priorities.

3.   Health care offered should place maximum
     reliance on available community resources,
     especially those which have hitherto remained
     untapped, and should remain within the stringent
     cost limitations that are often present.

4.   Primary health care should be an integreted
     approach of preventive, curative, and promotive
     services for both the community and the individual.

5.   All health interventions should be undertaken
     at the most peripheral practicable level of
     the health services by the worker most simply
     trained for this activity.

6.   Other echelons of services should be designed
     in support of the needs of the peripheral level,
     especially as this pertains to technical, supply,
     supervisory, and referal support.

7.   Primary health care services should be fully
     integrated with the services of the other sectors
     involved in community development (agriculture,
     education, public works, housing and communications).

2.4.0:The Growth Centre Strategy

     Walter Christaller introduced the central place
theory by the year 1930s. This theory is one of the
most widely recognized of all spatial theories and
requires that the settlements are examined not in
isolation, but as part of a total system of such
places. The importance of central place theory in
regional planning ties in its provision of a spatial
framework that explains links and relationships
within urban and rural economics through a system of

collection and distribution points. Under certain
limiting assumptions the theory provides a rationale
·for the size, number and spatial distribution of
places offering services to a dispersed population.
The basic principle to this theory states that a
definite pattern and hierarchy exists in the spatial
arrangement of service centres. The Kenya Government
has adopted this theory in her planning surveys
which identified the level, nature and distribution
of existing infrastructural developments throughout
the country. This study has however been considerably
modified to suit local conditions, such as topography
variations in population density, and also to take
account of deficiencies in available data.

The first reflection of the application of
this theory is the reference of growth centres in
the regional physical development plan for Central
Province, 1967. Similar studies have been published
for other provinces. In all these studies an
inventory of the existing social and physical
infrastructure of all centres in the province was
first prepared. Data was collected for five categories
of service namely:

(i)   Administration and Protection

(ii) Social services, including Health and Education;

(iii) Communication and Transportation;

(iv) Trade and commerce

(v)　Industry and Power.

These five major categories of services were
broken down into 21 specific sub-categories each
of which was assigned points according to its
relative importance within the major category,
whereby a high level of service (e.g. a hospital)
scored 3 points, a medium level service (e.g. a
hospital) scored 3 points, a medium level service
(e.g. a health centre) scored 2 points, and a low
level service (e.g. a dispensary) scored 1 point.

The number of points accummulated in each
centre were totalled and it was assumed that the
more points a centre had, the greater was its
centrality and the wider its sphere of influence.
These centres were termed in increasing order of
importance: local centre, market centre; Rural
centre and Urban Centre. If a centre collected
8 - 12 points it was considered to be a local centre,
with 13 - 18 points a market centre, with 19 - 36
points a rural centre and with 37 points or more
it was considered an urban centre.

According to the physical planning Department,
services should be located in central levels of
centres such as to correspond to certain threshold

populations. It is therefore important when
planning for rural health services in South Imenti
to look at the relationship between the growth centre
strategy and the development of rural health services.

Opukah (1979) quote Kimani and Taylor as having
stated that for purposes of rural development, the
concept of growth centres must include both economic
and social elements. There should be a vital
interface in order to allow the development of a
spartial strategy of rural development. This gives
an advantage of accessibility and can help us get
away from the false dichotomy of rural and urban
problems and therefore concentrate on the interlinkages.
The concentration of services in rationally selected
centres will provide solutions to some of the problems
of rural development, especially that of inaccessibility
to basic services such as health and education.

Kiambi (1980) points that the aim of the
growth centre approach in rural development is to
improve the quality of rural life: If the quality
of rural life is to be improved then services such
as health, sanitation, clean water, power, education
and communication should be taken closer to the people.
Due to the limited public funds a package approach
has been adopted whereby these services are supposed
to be located in designated service centres.

This way public goods and services are consumed
more conveniently and efficiently. It is less time
consuming to get all the services required in one
centre.   It is the belief of many authors that
policy intervention can create a positive complimentary
relationship between the centre and the hinterland.

THE STUDY AREA

3.1.1 TOPOGRAPHY:

The topography of South Imenti Division like
that of the entire district varies greatly. The
most striking physical features of Meru District are
Mount Kenya in the West (which borders South Imenti
Division) and Nyambene Hills in the north-eastern
part of the District. From its greatest Western Zenith,
at 5,380 metres above the sea level, the vast Mount
Kenya dome slopes gently northward and eastward
covering South Imenti Division, and blending into
the East Plateau of Kenya. Although the gradient
of the mountain is gradual, the larger streams in
the study area have carved deep incisions in its
igneous bed-rock, particularly to the south. (Map No. 3)

3.1.2 DRAINAGE:

The drainage pattern in South Imenti Division
is essentially determined by the northern slopes of
Mount Kenya, and the structure in the basement system.
South of the watershed, where most of the permanent
streams of not only South Imenti but the entire Meru
District are located, drainage is to the Tana, Kenya's
longest and largest river. The major rivers from
Mount Kenya following towards the Tana River include:
The Thingithu and Mutonga within the study area and

the Thuchi, Kathita, Nithi and Ruguti Rivers within
the rest of the district. Drainage on the slopes
of Mount Kenya is in a typical radial pattern.

The steams in South Imenti Division have
steep-sided, deep valleys and numerous rapids and
falls which have developed on all their courses. As
streams flow out onto the basement complex, their
profiles gradually flatten and lateral erosion
become predominant. The Mutonga River illustrates the
striking contrast in stream profile between the
volcanic bedrock in upper courses and metamorphic
basement rock in lower courses. This is however
common pattern of many of the larger Mount Kenya
streams. Cultivation in most parts is therefore
difficult, and some places impossible in upper
courses; downslope it is possible and is frequently
practiced as is the case with Mutonga Valley which
is on the southern part of the division.

3.1.3 CLIMATE:

The physical topography of South Imenti has a
critical influence on the climate and consequently
on the agricultural potential. The high land masses
lassen the effect of high temperatures and rates of
evaporation, and also force rain-bearing winds upwards
and cause them to loose a much greater amount of

moisture than over low lying areas. Looking at the
entire district it is clear that whereas stations on
the southern and south-eastern slopes of Mount Kenya
can expect 1250-2250 mm. of rainfall annually, the
eastern and northern lowlands receive less, within
the range of 380 - 1000 mm. In examining rainfall
distribution in the District, two important features
become notable. One is the strikingly sharp rainshadow
north of Mount Kenya and north-west of the Nyambene
Range. In a few miles this rainshadow dramatically
alters agricultural potential in these areas.
Conditions ideal for coffee, tea, potatoes and two
crops of maize rapidly change to a situation where
it is too dry for coffee and in many seasons even maize.
The second feature is the pronounced decline in the
amount of rainfall as one moves towards the eastern
side of the district. The moist parts of the eastern
lowlands receive 750-1000 mm. of rainfall on average;
the drier parts, further to the eastern and south-
eastern parts of the District, receive 500 mm. or
less. Scarcity of rainfall combined with low altitude
and high temperature renders this part of the
district marginal and semi-arid and in many ways
difficult for agriculture. South Imenti and a big
part of the district enjoy the short rain between
March and May and long rain between October and
December.

3.1.4 ECOLOGICAL ZONES:

South Imenti Division can be classified into three major agro-ecological zones. These are Tea, Coffee and Cotton/Millet zones. (Map No. 3) The tea zone include parts of Nkuene, Abogeta, Igoji and Mitiine locations. This zone occupies the area between 5500 ft. to 7500 ft. The area is also productive for other crops like maize potatoes and vegetables. Coffee can also thrive at its lower margins. The coffee zone include parts of Nkuene, Mitunguu, Abogeta, Kanyakine, Miitine and Igoji locations. The area lies between 4000ft. to 5000 ft. above sea level. The soil fertility, adequate rainfall and moderate temperatures permit a wide range of crops to be grown. The cotton zone include the lower parts of Mitunguu, Kanyakine and Miitine locations. This zone which is also referred to as grass woodland zone or cotton/millet zone is confined to altitude 3000ft. to 4000 ft. Cotton is the only non-food cash crop grown in the area otherwise Katumani, beans, sorghum, millet and some vegetables are the major crops grown. This zone provide the tea and coffee zones with most of their food crops since most of these two zones'-land is under extensive cashcrops production. In South Imenti high potential land, coffee, tea, bean, potatoes and maize is grown, while cotton, maize, beans, millet, sorghum, peas and tobacco is grown in the medium potential and only

SOUTH IMENTI AGRO ECOLOGICAL ZONES

NORTH IMENTI

KENYA FOREST

MOUNT

THARAKA

NITHI

MIKUMBUNE

NKUBU

KIONYO

KANYAKINE

KERINGA

MITUNGUU

MIRURIIRI

KINORO

MWERU

KIANGUA

IGOJI

KEY

- HIGH POTENTIAL
- MEDIUM POTENTIAL
- FOREST
- URBAN CENTRE
- RURAL CENTRE
- MARKET CENTRE
- LOCAL CENTRE

SCALE

KM   3   0   3   KM 6

Source: Kiambi (1980)
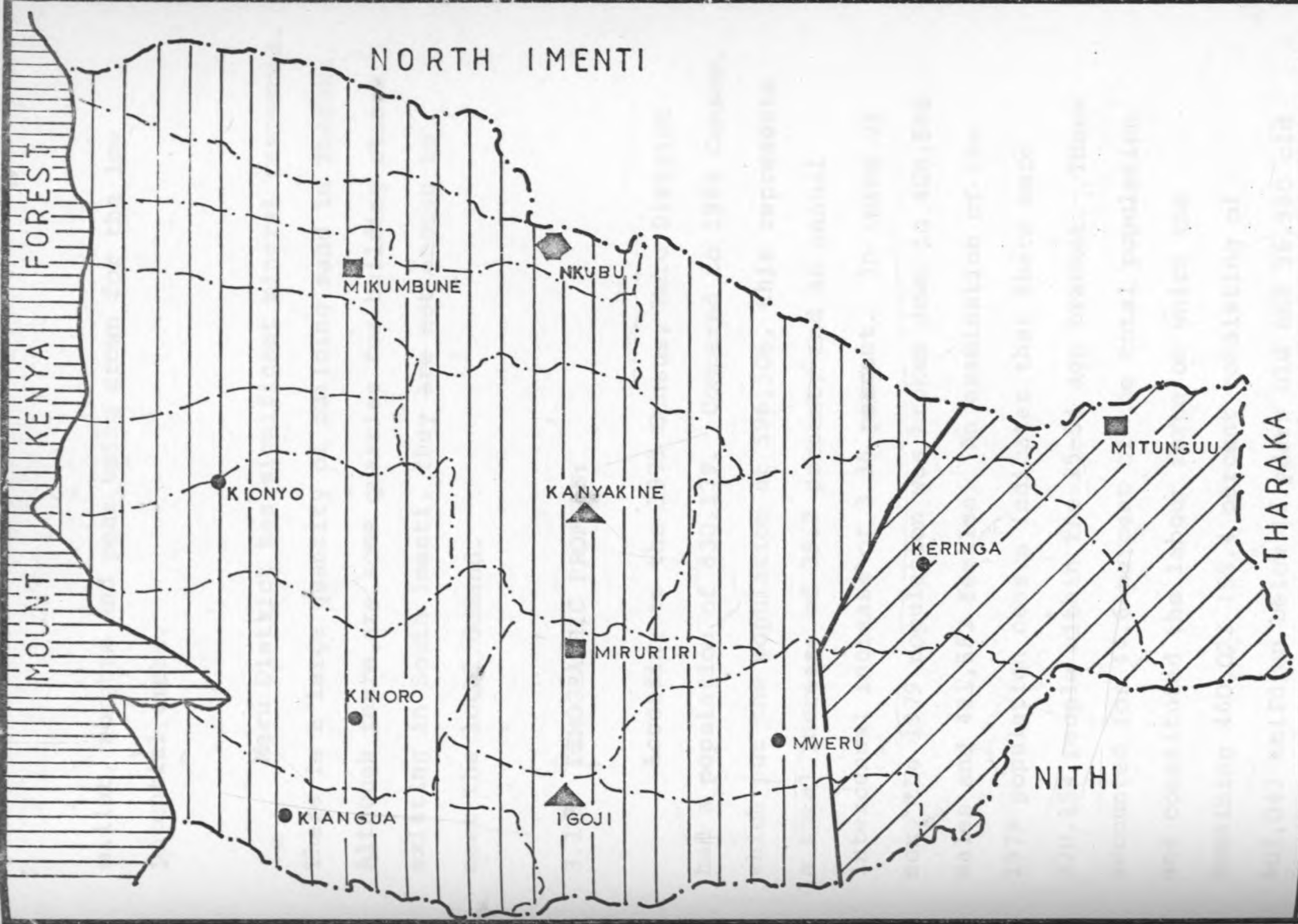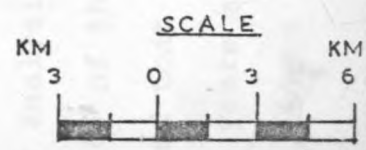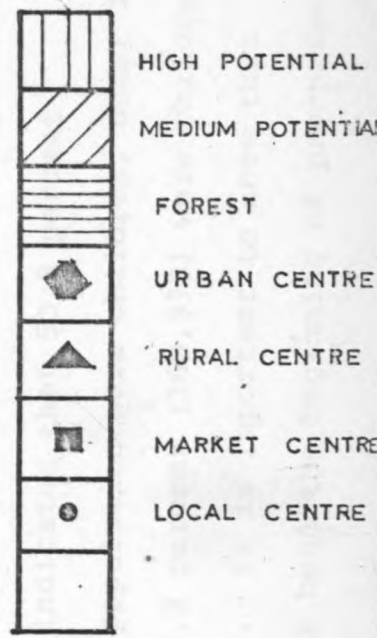
millet, sorghum and peas being grown for the low
potential areas.

Meru District has significant mineral resources.
There is a large quantity of building sand in Tharaka.
Although there are some quarries for building stones
existing in South Imenti, they are not enough to
meet the local demand.

3.1.5 DEMOGRAPHIC PROFILE:

According to the 1979 Census, Meru District
had a population of 830,179. Compared to 1969 Census,
which put the population at 596,506, this represents
a total increase of 39.2 percent, and an annual
intercensal increase of 3.36 percent. In terms of
sex, the 1979 population was broken down to 408,596
males and 421,583 females. An examination of the
1979 population census indicates that there were
370,154 people within the 15-54 age bracket. These
accounted for 44.6 percent of the total population
and constituted the labour force on which the
remaining 460,022 (55.4 percent consisting of
403,043 children below 15 years old and 56,980 old
people above age 54) are assumed to have depended.
Further analysis indicates that 50.8 percent
(422,068) of the population were children, under 15
years and that 19.3 percent (160,373) were children
under 5 years age. It is important to note that
ideally, age 5 has been the beginning of pre-primary

SOUTH IMENTI ADMINISTRATIVE BOUNDARIES   MAP NO.4.

NORTH IMENTI

KEY

	DIVISION
	LOCATION
	SUB LOCATION
	FOREST
	LOCATION HQ

SCALE

KM 6 3 0 3 6 KM

URUKU

KATHERA

MIKUMBUNE

Nkubu

NKUENE LOCATION

CHURE

NGONYI

KANYAKINE

KITHANGARI

Kanyakine

KIUNGONE

ABOGETA LOCATION

KERINGA

MITUNGUU

KINORO

KIA NJOGU

IGOJI LOCATION

MWERU

Igoji

KIANGUA

GIKUI

NITHI

MOUNT KENYA FOREST

THARAKA

Source: Kiambi (1980)
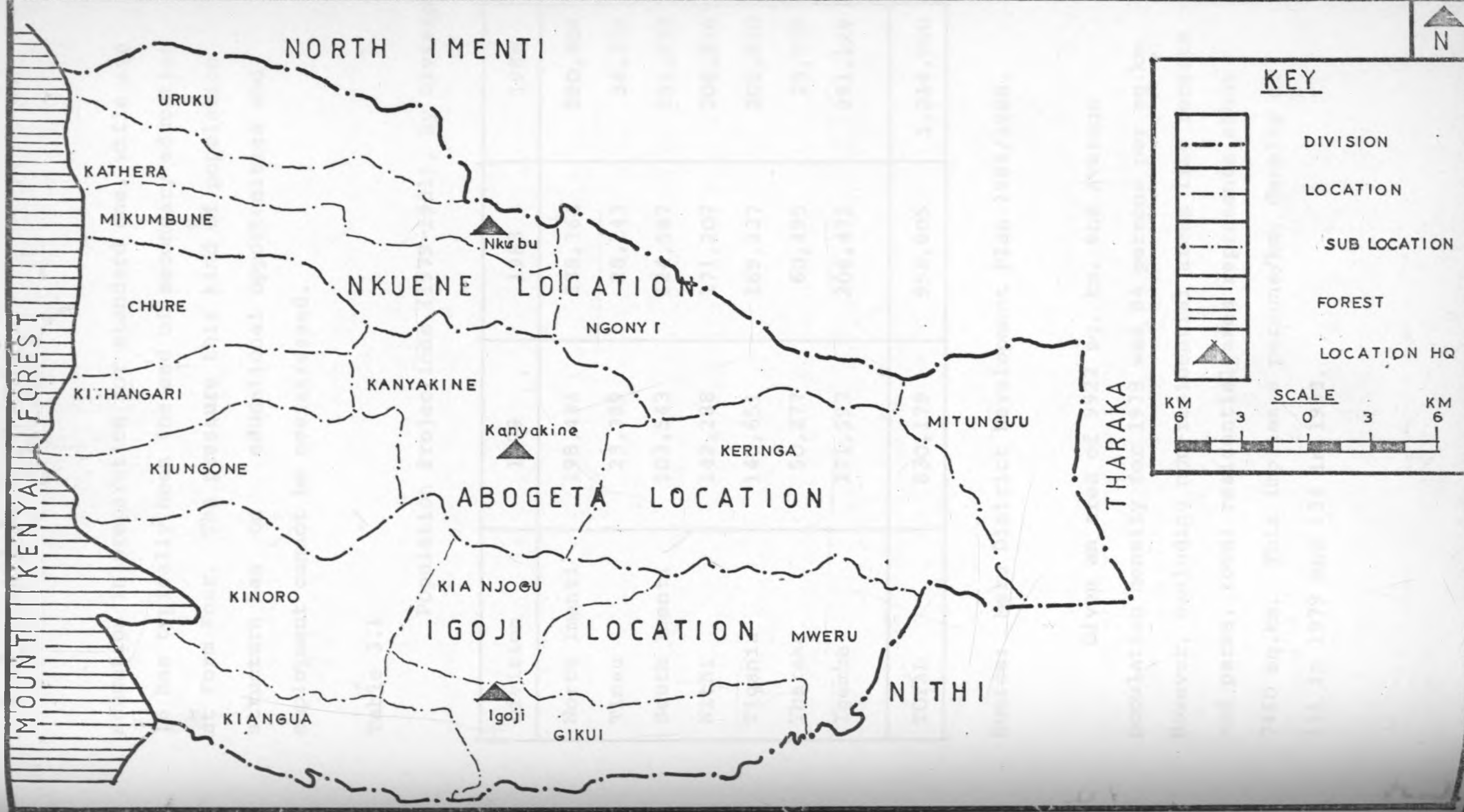
education in preparation for standard one, while age
16 has typically been the end of secondary education
at Form Four. The pressure this kind of population
structure has on educational opportunities and
employment cannot be overstressed.

Table 3.1

Population Projections (1979-1981), By Division

Division	1979	1983	1988
North Imenti	198,434	238,764	290,404
Timau	23,389	28,143	34,229
South Imenti	103,543	124,587	151,533
Nithi	142,288	171,207	208,236
Tigania	140,651	169,237	205,840
Tharaka	50,277	60,495	73,579
Igembe	171,597	206,472	251,129
TOTAL	830,179	998,905	1,214,950

Source: Meru District Development Plan 1984/1988.

Given an area of 9922 sq. km. the average
population density for 1979 was 84 persons per sq.km.
However, excluding non-residential areas like forests
and parks, total residential area represents about
7460 sq.km. This implies a persons/km. density of
111 in 1979 and 134 in 1983.

North Imenti has, and continues to have, the
highest number of people, while Timau has the lowest
number of people. It is natural for North Imenti to
have the largest number of people in the District
because ic is large and rich in agricultural
potential. Tharaka, although physically the largest
division in the District, has a relatively small
population because of aridity and low agricultural
potential. Timau has the lowest population in the
District because it used to be a scheduled area and
settlement is still taking place (Timau Division was
created in 1982). South Imenti has the highest
population density because most of the area is fertile
and well-settled. North Imenti does not take the
lead because some parts of it are not fertile and
are therefore sparsely populated. On the whole the
District's population density compare favourably with
Machakos and Embu which had densities in 1979 of 72
and 96 respectively. It, however, has a much higher
density than Kitui, Isiolo and Marsabit.

TABLE 3.2:Population Density for Divsions (1979-1988)

Division	No. of Sq.Km	Persons/Km Density (1979)	Persons/Km Density(1983)	Persons/Km Density(1988
South Imenti	918	216	260	316
North Imenti	392	264	318	387
Nithi	640	222	268,	325
Tigania	652	216	260	316
Tharaka	1,496	34	40	49
Igembe	2,572	67	80	98
Timau	790	30	36	43
Meru District	7,460	111	134	163

Source: Meru District Develooment Plan. 1984/88

3.1.6 POPULATION DISTRIBUTION IN SOUTH IMENTI

Until 1984 South Imenti Division was made up
of three locations namely: Nkuene, Abogeta and Igoji.
At present these locations have been subdivided into
more locations, to have Miitine, Igoji, Kanyakine,
Mitunguu, Abogeta and Nkuene locations. In the 1962
population census Nkuene and Abogeta were enumerated
as one location (Nkuene). This therefore meant
the division have two locations namely Igoji and
Nkuene (for this purpose). The division in 1962
had a population of 57260, with Nkuene location having
a population of 40,779 and Igoji 16481 persons.

By the 1969 population census Nkuene location
had been split into Nkuene and Abogeta locations.
Nkuene had 31720 persons, Abogeta 22702 persons and
Igoji had 21129 persons. The division therefore had
a total population of 75551 persons during the 1969
population census.

In the 1979 population census South Imenti
Division registered a population of 103,543 persons.
The distribution by location was Nkuene 40,796 persons,
Abogeta 31,899 persons and Igoji 30,848 persons.
(Map No. 5)

Table 3.3:   Population Distribution (1969)

Administrative Unit Location	Population	Area	Density
Nkuene	31,720	89	357
Abogeta	22,702	132	162
Igoji	21,129	131	162
TOTAL	75,551	352	214

TABLE   3.4:   Population Distribrition (1979)

Administrative Unit Location	Population	Area	Density
Nkuene	40,796	134	303
Abogeta	31,899	138	229
Igoji	30,848	119	257
TOTAL	103,543	392	263

According to the 1969 population census it is clear that Nkuene location is most densely populated with a density of 357 persons per square kilometre as

compared to 162 persons per square kilometre for
Abogeta and Igoji. In the 1979 population Census
Mitunguu Sublocation which was enumerated in North
Imenti administrative division during the 1969
population census was included in Nkuene location and
due to the fact that Mitunguu is sparsely populated,
the 1979 population density for Nkuene location dropped
from 357 persons per square kilometre in 1969 to 303
persons in 1979.

3.1.7 Population Projection (South Imenti)

The population growth rate for Meru District
between 1969 and 1979 was 3.9 per cent per annum.
The population growth rate for South Imenti (study
area) over the same period was 3.7 percent per annum.
Given the population growth rate it is possible to
calculate the population projection for a given time.
Population projection however is based on the
assumption that the factors affecting the growth rate
over the last census period shall remain constant.
This is not always the case since the population is
dyamic in nature and can be affected by many other
unforseen factors. Population projection is nevertheles
a useful way of approximating the future situation. *

---

* Formula for population projection $PT=PO (1+r)^n$
  PT=Projected population PO=Base year population
  r =Growth rate.   n =number of years.

3.1.8 DEPENDANCY RATIO:

In South Imenti (study area) the dependent
population in 1969 was 54.4 percent while in 1979
it was 51.5 percent. In the 1969 population census
the population considered dependent is that   below
15 years and above 60 years. In the 1979 population
census the dependent population was considered that
below 15 years and above 70 years. This does not
show a realistic feature since population under 15
years contribute alot to the household especially in
rural areas. There are also dependents of over 15
years for example students while we find also a big
proportion of over 70 years in active labour.

3.1.9 PATTERN OF URBANIZATION:

During the 1979 census, Meru Municipality, which
is the principal town in the District, had a
population of 72,049 and a density of 563 persons per
sq. km., covering an area of 128 sq. km. The
Municipal area has, however, been reduced to 61 sq.km.
which consists mainly of the town centre and the
forest reserve (covering 44 sq. km.). There are
four urban centres which also serve as the main service
delivery points. These are Maua, Chuka Nkubu and
Chogoria. In 1979 the population of these centres was
as follows:

POPULATION DISTRIBUTION IN SOUTH IMENTI 1979 CENSUS

N

NORTH IMENTI

MOUNT KENYA FOREST

URUKU

KATHERA

Mikumbune

CHURE

MIKUMBUNE

NKUBU

NGONYI

KITHANGARI

KANYAKINE

Kionyo

KIUNGONE

Kanyakine

KERINGA

Keringa

MITUNGUU

Mitunguu

THARAKA

Miruriiri

KINORO

KIANJOGU

Kinoro

MWERU

Mweru

Kiangua

Igoji

NITHI

KIANGUA

GIKUI

KEY

	8001 – 10000 POP
	6001 – 8000 POP
	4001 – 6000 POP
	2001 – 4000 POP
	0 – 2000 POP
	URBAN CENTRE
	RURAL CENTRE
	MARKET CENTRE
	LOCAL CENTRE

SCALE

KM 3   0   3   KM 6

Source: Kiambi (1980)

Table 3.5: <u>Urban Centres Population</u>

Centre	Population
Nkubu	10,324
Chogoria	856
Maua	1,805
Chuka	1,361

Source: Kenya Population Census, 1979, CBS,
          June 1981.

Estimates, based on local knowledge and past
trends, indicate that these centres are growing at
the rate of about 4% per annum. The main reasons
for the past comparatively low urban population
growth rates were lack of significant industrial
development in these centres and the practice of
many town workers of living in homes outside the
towns.

South Imenti is occupied by the Meru people
who are the northern most of the Kenya Bantu speaking
group. The Meru people recognize nine major territorial
subdivisions based upon dialectical differences.
These subdivisions are: Imenti, Miitine, Igoji,
Mwimbi, Muthambi, Chuka, Tigania, Igembe and Tharaka.
The Imenti group occupies two administrative units,
namely South and North Imenti Division. This study
focuses on South Imenti Division, which comprise

of Miitine Igoji, Kanyakine, Mitunguu, Abogeta and
Nkuene locations.   (Map No. 4)

3.1.10   SETTLEMENT:

The Settlement Pattern in South Imenti Division
is a typical example of rural Kenya. The spatial
distribution of the population corresponds with the
occurrence of the good agricultural land. Like in
other parts of the country the population is concentrate
in the high potential agricultural area. The factors
of climate, topography and socio-economic, have much
influenced the settlement pattern of the area. In
recent years population pressure in the middle zone of
the division has led to migration of the people to the
lower parts of the division which in the past were
only used for the cultivation of seasonal food crops
and not habitation. The middle zone is also well
favoured with the cash crops. (Map No. 3)

3.1.11   PATTERN OF MIGRATION:

There has not been any major migration in or out
of South Imenti Division in recent years. There has,
however, been some movement of people from rural to
urban areas and from the high potential coffee and
tea areas with high population pressures to the
less productive areas with less population density.

The first category of migrants consists of school - leavers who are attracted to urban centres with a hope of getting wage employment. The second category consists of people who are looking for land, and movement has generally been towards lower parts of the division. Although the population of the division is basically composed of an ethnically and culturally homogeneous group, other Wameru from other parts of the district like the Tharaka, Tigania and the Imenti tribal groups who are identified by their slight differing dilects comprises the population of South Imenti Division.

3.1.12 SOCIO-ECONOMIC PROFILE:

South Imenti is essentially an agricultural area and most of the inhabitants are farmers, growing crops such as coffee, tea, tobacco, cotton and pyrethrum for cash crops and maize, millet, bananas and potatoes for subsistence. Surpluses of potatoes and other food crops are also sold for cash. Livestock-keeping is common and most people keep cattle, goats and sheep in addition to crop farming.

3.1.13 ECONOMIC BASE (SOUTH IMENTI):

South Imenti Division is basically an agricultural area. The major cash crops grown include coffee, tea, tobacco and cotton. These crops determine the incomes of the people in the area.

3.1.14 COFFEE:

Coffee is the major cash crop grown in 8,482 hectares and is grown in all the six locations of South Imenti Division. Majority of the farmers in the study area ·depend on the earnings from coffee, and this overdependence on coffee earned income has led to alot of financial difficulties especially now that the world market for coffee is unfavourable (coffee price depend on the world market).

The marketing of coffee in the area is done by the coffee societies namely:

Nkuene society with 10 factories

Kithino society with 6 factories

Abogeta society with 10 factories

Igoji society with 11 factories

Kiangua society with 2 factories

The coffee field conditions is very viable and only few people would venture to plant other crops in coffee fields.

The small scale coffee improvement project (SCIP) is a programme within the study area which deals with factory improvement and construction, society loans to coffee farmers and demonstration plots. There are 12 (SCIP) in South Imenti division.

3.1.15 TEA:

Tea is grown in upper Nkuene, Abogeta, Miitine and Igoji locations. Tea is a fairly recent crop in South Imenti division and production and income earned from tea fluctuates either due to unfavourable climatic conditions or market prices.

3.1.16 COTTON:

Cotton is grown in the lower Mitunguu, Kanyakine
and Miitine locations. Acreage under cotton keep
on changings since it is an annual crop at present
however it is estimated at 600 hectares. Production
of cotton has been falling due to high cost of
chemicals, low marginal profits and delay in payments.
Planting of cotton was managed by agriculture staff
and marketing is done by the Cotton Board for the
Mitunguu Irrigation Farmers Cooperative Society and
Kamuramba Cotton Farmers Cooperative Society. The
supply of pesticide is being handed by the Cotton
Board with help of the extension staff and the.
Mitunguu Irrigation Scheme Staff.

3.1.17 TOBACCO:

Tobacco was introduced by the B.A.T. Kenya
limited in the early 1970s, and is taking up the
place of cotton as the main cash crop in the drier
parts of the division. Although the growers of the
crop fetch high income, the labour requirement
discourage many people to raise the crop.

3.1.18 FOOD CROPS:

These are mostly grown for domestic consumption.
The main food crops grown in the area are maize,
beans, pigeon peas, cowpeas, millet and sorghum.

The farmers only sell the surplus to meet the household
necessities. According to the Division Agricultural
Officer Statistics, Acreage under these crops and
production are variable target for October to
December 1984 which were:

Maize	2,800 ha.
Beans	2,300 ha
Millet	50 ha.
Sorghum	50 ha.
Pigeon peas	80 ha.
Cow peas	10 ha.
Potatoes	120 ha.

3.1.19 HORTICULTURE CROPS:

The main horticulatural crops grown in the area
include bananas, tomatoes, cabbage, carrots,
mangoes, citrus and avocado. Acreages under these
crops are normally variable but their acreages are
on the increase especially for citrus and avocado.
The major problems experienced is frequent market
gluts at peak season however there is supply of
fruits and vegetables throughout the year.

3.2.0 SOCIAL SERVICES:

3.2.1 EDUCATION:

Meru District is divided into 21 educational
Units (divisions) for purposes of administration
and management. With seven administrative divisions

there is an average of three educational divisions per

administrative division. South Imenti Division

(study area) has three educational units namely: Igoji,

Abogeta and Nkuene. The situation regarding primary

school enrolment is satisfactory in most educational.

Units in South Imenti. Lack of permanent classrooms

and other physical facilities has been a widespread

problem especially in Kanyakine and Nkubu. Construction

of classrooms, teachers houses and such related

facilities is the responsibility of the parent's

associations and school committees. Their ability

depends, on the economic situation of the communities

affected.

The secondary schools do not only serve the area

they are physically located. In South Imenti Division

there are six Government maintained secondary schools.

There are several Harambee secondary schools in the

division built on self help basis. There is need for

improvement in the management of schools. Boards of

Governors need to be revitalised and given due

opportunity to operate properly without too much

political interference, as has been the case in many

harambee and Government - assisted schools.

There are two Village Polytechnics in the

division. They both exhibit signs of overutilisation

as they do not fully satisfy demand. This is

DISTRIBUTION OF HEALTH SERVICES IN SOUTH IMENTI

MAP NO. 6.

NORTH IMENTI

N

KENYA FOREST

MOUNT

URUKU PRISON
URUKU
KATHERA
NKUBU
MIKUMBUNE
ITHIMBARI
ITHIMBANI PCEA
GATIA
IGANDENE
KIONYO
KIROGINE
MITUNGUU
KANYAKINE
GATURI
MAKANDUNE
NKACII
KATHIGU
MWOROGA
KINORO
GATUNTUNE
IGOJI

THARAKA

NITHI

KEY

HOSPITAL

DISPENSARY

SCALE

KM   3   0   3   6   KM
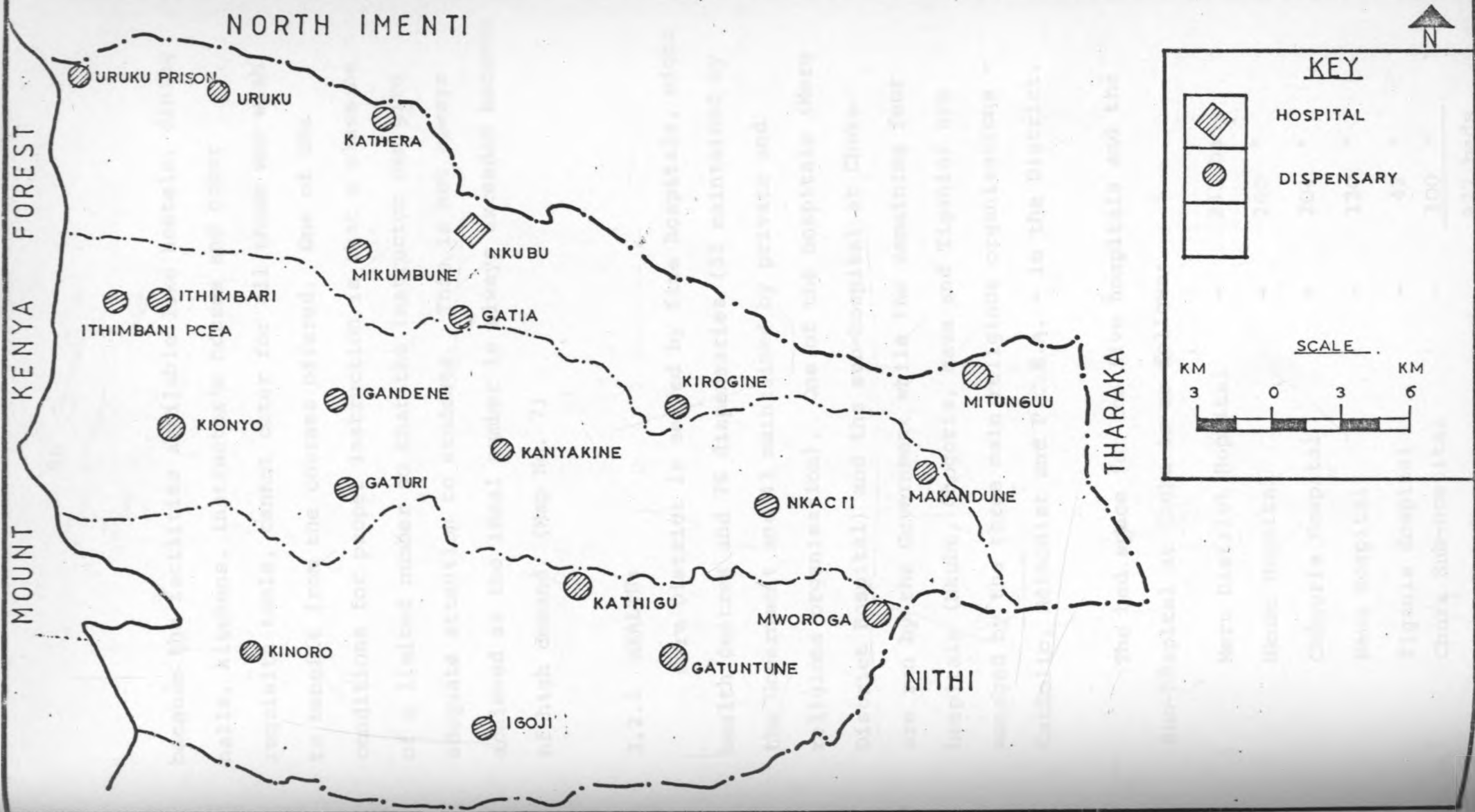
because the facilities available like hostels, dining
halls, kitchens, instructor's houses and other
requisite tools, cannot cater for all those who wish
to benefit from the courses offered. One of the
conditions for proper instruction is that a class be
of a limited number so that the instructor can give
adequate attention to students. This is not always
achieved as the ideal number is always exceeded because
of high demand. (Map No. 7)

3.2.2 HEALTH:

Meru District is served by five hospitals, eight
health centres and 76 dispensaries (33 maintained by
the Government and 43 maintained by private and
religions organisation). One of the hospitals (Meru
District Hospital) and the sub-hospital at Chuka
are run by the Government while the remaining four
hospitals (Nkubu, Chogoria, Maua and Tigania) are
managed by the three main religious organisations -
Catholic, Methodist and P.C.E.A. - in the District.

The bed space for the five hospitals and the
sub-hospital at Chuka is as follows:

Meru District Hopsital	-	241 beds
Nkubu Hopsital	-	260 "
Chogoria Hospital	-	204 "
Maua Hospital	-	130 "
Tigania Hospital	-	42 "
Chuka Sub-hospital	-	100 "
Total		977 beds

NORTH IMENTI

KENYA FOREST

MOUNT KENYA

THARAKA

NITHI

NDAGENE

NTEMWENE

NKUBU

MWANGANTHIA

IGANDENE

KANYAKINE

MUTIOKIAMA

YURURU

KITHATU

MIRURIIRI

GIKURUNE

KAGUANYI

IGOJI

KIANGUA

KEY

GOVERNMENT AIDED

HARAMBEE

PRIVATE

KM 3 0 3 6 KM
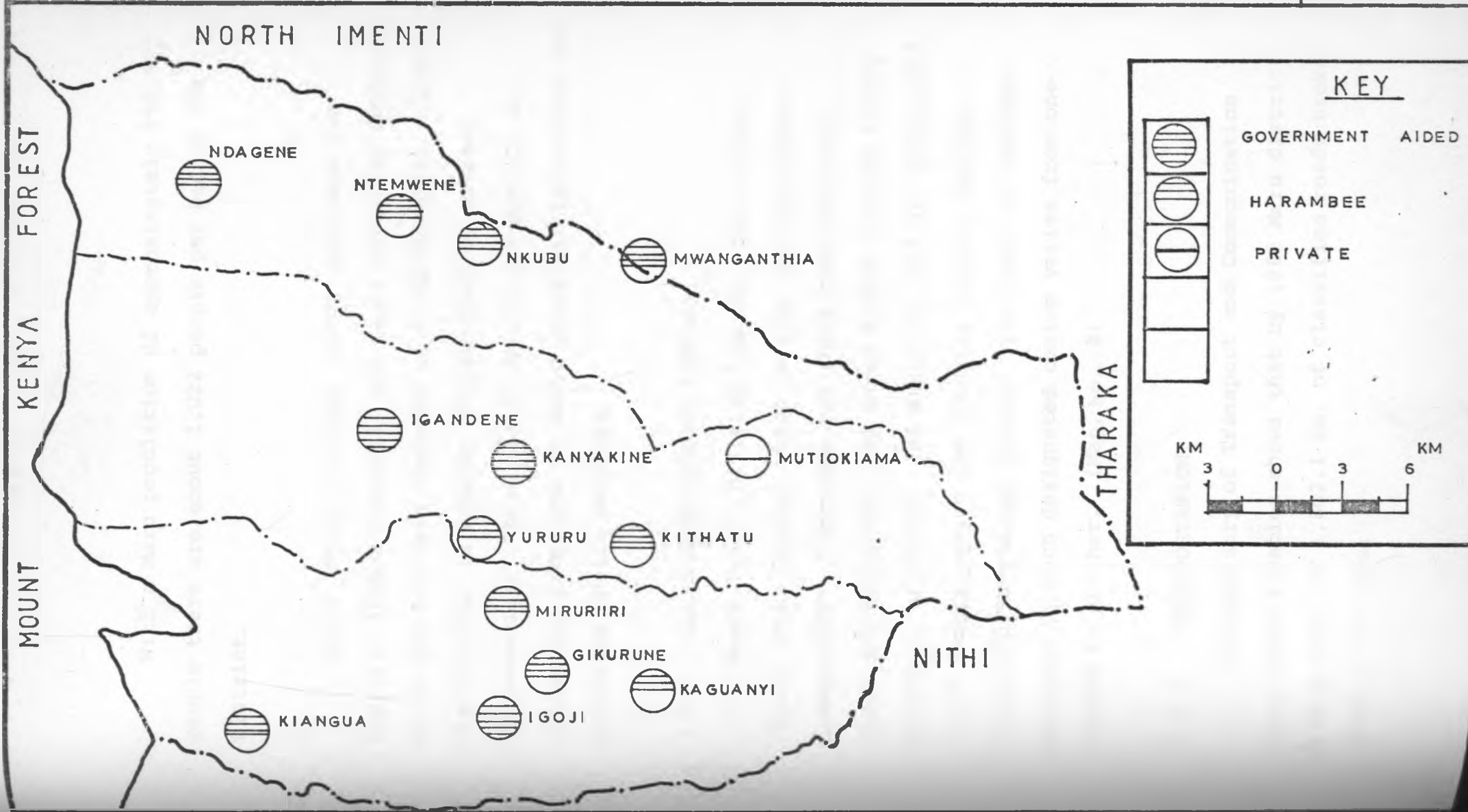
With a Meru population of approximately 998,900 people there are about 1,022 people per bed in the District.

South Imenti Division (study area) has one hospital (Nkubu Hospital) and Igoji Maternity Cottage which has not been upgraded to a sub-hospital status. The hospital is however complemented by several dispensaries. These health facilities provide an integrated programme of basic curative, preventive and promotive health services.

3.2.3 DESIGNATED SERVICE CENTRES:

South Imenti Division has one urban centre (Nkubu Urban Centre) which is also the Divisional Headquarter. There are two rural centres namely Igoji and Kanyakine, and three market centres namely Mitunguu, Mikumbune and Miruriiri and six designated local centres which are Kiangua, Kionyo, Keringa, Itugururu, Keria and Kinoro. The level of services provided by each designated centre varies from one centre to another. (Map. No. 8)

3.2.4 TRANSPORTATION:

The Ministry of Transport and Communication road classification shows that by 1982 Meru district had a total of 1,802.1 km. of classified roads broken down as follows:

A - Bitumen Roads - 195.1 km.

B - Gravel Roads   - 896.2 km.

C - Earth Roads   - 710.8 km.

With an area of 9.922 sq. km. and an estimated
population of 998,905 people, we find that the
District can hardy be satisfactory served by just
a total of 1,802.1 of classified roads. The
situation is, however, expected to improve substantially
when the Thuchi/Nkubu road, which is currently being
constructed to bitmen standard is completed mid this
year.

In South Imenti Division, a national trunk road
from Meru town to Embu passes through the study area.
The road is expected to be completed to bitumen
standards to connect Nkubu and Thuci which forms the
boundary between Meru and Embu Districts.

Generally the access roads in South Imenti are
bad because they are largely earth roads, and wear
and tear tends to be fast. Maintainance is also
not regular because of limited funds hence having the
roads in very poor conditions especially in the rainy
seasons. The Kenya Tea Development Authority has
constructed all weather feeder roads to their tea
leaf collecting centres in the Division. (Map No. 8)

Plate 1:
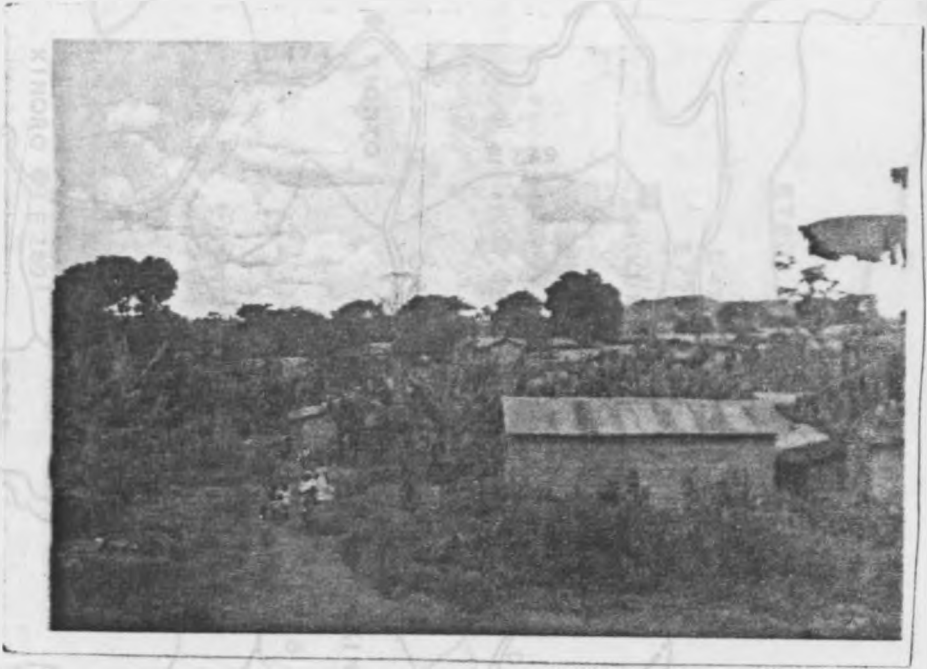
(a)   The road network in most parts of the study
       area is very poor.
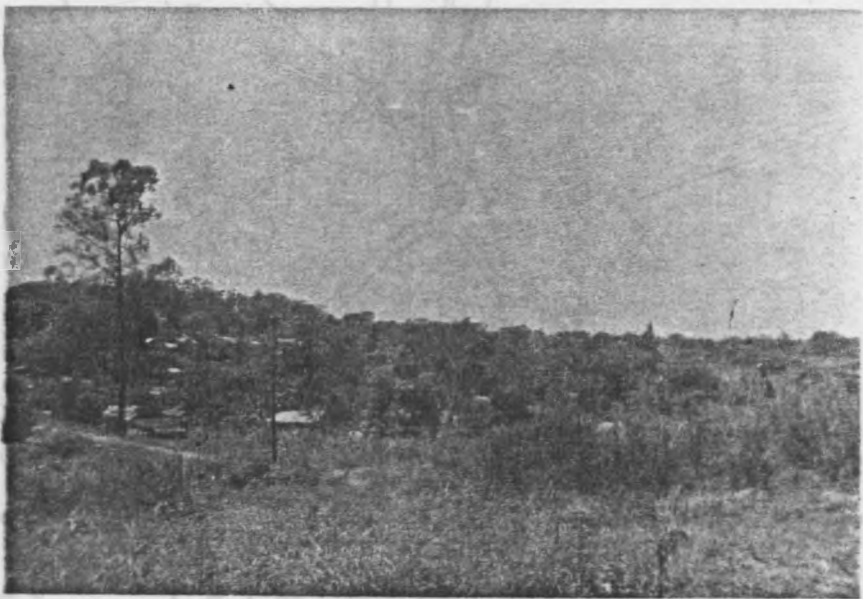
(b)   Telephone lines passing on the Meru-Embu road
       cannot be tapped by most of the people.

SOUTH IMENTI ROADS AND DESIGNATED SERVICE CENTRES

N

NORTH IMENTI

KENYA FOREST

MOUNT

D483

TO MERU

E780

D476

E779

MIKUMBUNE

E779

NKUBU

B6

D475

E786

TO MERU

THARAKA

D474

KIONYO

E777

E778

KANYAKINE

MITUNGUU

D474

E778

C92

KERINGA

E770

MIRURIIRI

E771

GATUNTUNE

NITHI

KINORO

E769

E768

E776

IGOJI

KJANGUA

E767

B6

KERIA

TO EMBU

TO EMBU

KEY
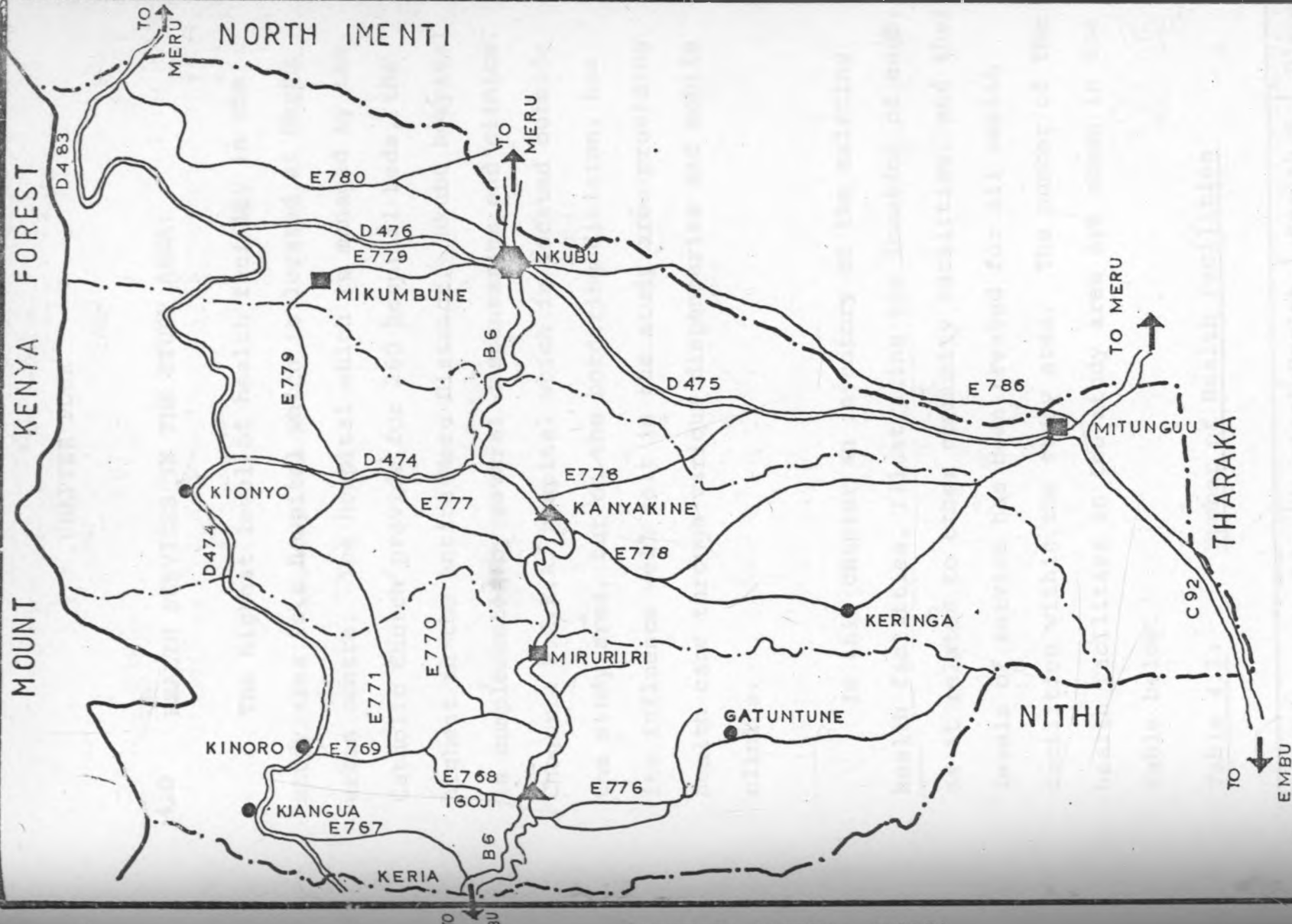
B	NATIONAL TRUNK ROAD
C	PRIMARY ROAD
D	SECONDARY ROAD
E	MINOR ROAD
⬡	URBAN CENTRE
▲	RURAL CENTRE
▮	MARKET CENTRE
●	LOCAL CENTRE

SCALE

KM 3   0   3 KM 0
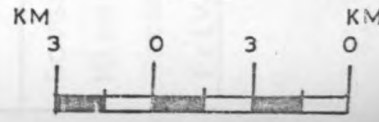
4.0   HEALTH SERVICES IN THE STUDY AREA:

The highest level of health facility in the
study area is a hospital which is located at Nkubu
urban centre. The hospital which is managed by the
Catholic Church provide for 260 hospital beds, the
highest in the entire Meru District. Nkubu hospital
is complemented by several dispensaries and clinics.
Chogoria P.C.E.A. hospital which is located outside
the study area, but on the bordering division, has
its influence well felt in the study area providing
health care through various dispensaries and mobile
clinics.

In this chapter an inventory of the existing
health facilities, illustrating the location of each,
as it relates to other community facilities, and their
levels of service has been treated for all health
facilities within the study area. The number of the
health facilities in the study area are shown in the
table below.

Table 4.1:   Number of Health Facilities

Facility provider	Hospital	Health Centre	Health S. Centre	Dispensary
Government	-	-	-	8
Missionary	1	-	-	12
Harambee	-	-	-	-
Private	-	-	-	10

There are eight government dispensaries within the study area which are distributed among the three locations, with Igoji having one, Abogeta has three and Nkuene location with four.

South Imenti Division is well served with missionary health facilities. There is one Catholic hospital located in Nkuene location and ten dispensaries which are distributed among the three locations. Igoji location is served with four, Abogeta location with three and Nkuene location with three. The division is further served with two missionary managed mobile clinics in Abogeta location. Supplementing the Government and Missionary health facilities are some several private clinics which are divided among the three locations with Igoji having three, Abogeta with three and Nkuene with four. There are however no Harambee provided health facilities within the study area.

4.1 GOVERNMENT HEALTH FACILITIES:

The highest level of the Government health facility in the study area is of a dispensary level. It is however important to note that there are plans to upgrade Kanyakine Dispensary which is located in Abogeta location to a sub-hospital status. At the time of writing this desertation the Nyayo wards were

being constructed, although the decision is being
challanged by some local leaders who feel Kanyakine
Dispensary should not be upgraded given its close
proximity to Nkubu hospital, but rather the Nyayo
wards should be constructed at Marimanti in Tharaka
Division which is relatively poorly served with health
services. There are eight dispensaries in the study
area which are managed by the Government. Igoji
location is served with only one Government Dispensary
which is located at Kinoro local centre. The facility
serves a population of 5,429 people in a area of 60
sq.km. According to the hierarchy of Growth Centres
and the corresponding health facilities, a facility
of this magnitude is supposed to be located in market
centre to serve a population of about 15,000 people.
It is therefore not surprising that since this is the
only Government health facility in Igoji location
patients travel as far as Mworoga a distance of about
ten kilometres to seek medical care because the
services at this facility are free. Time and again,
however the patients have to walk such long distances
but to their disappointment there is either no drugs
or the queue is so long that they can not be all
served. The Dispensary which was constructed on
harambee basis was latter taken over by the Government.
On average the Dispensary serves about 80-100
patients per day and about 2,500 to 3,000 patients
per month when drugs are available. The Dispensary

is faced with various' constraints ranging from lack
of most essential equipments, to lack of staff and
staff houses. Drug delivery is very poor for
transportation is the major handicap in the area.

Abogeta location is served with three Government
Managed Dispensaries. Specifically these are
Kanyakine Dispensary, Kionyo Dispensary and Ithinibari
Dispensary. Kanyakine Dispensary which is located
in Kanyakine Rural Centre serves a population of about
9009 people in an area of 25 sq. km. As earlier
pointed out the dispensary is expected to be upgraded
into a sub-hospital and the Nyayo wards are being
constructed. The Dispensary is located on the Meru-
Embu road, making accessibility to it quite good.
The dispensary is just about five kilometres from
Nkubu hospital. It is therefore clear that if the
dispensary is to be upgraded to a sub-hospital level
a problem of duplication of health services will be
evident while in other parts of the Division there is
lack of hospital services.

Ithimbari Dispensary which is newest and most
modern dispensary in the study area was started in
1974. The dispensary has three permanent staff
houses and a modern administrative and curative block.

There is a proposal to construct a maternity unit
by the end of this year. The Dispensary serves about
150 patients per day but this number declines during
the planting and tea harvesting period. The Dispensary
is located about 100 yards from Ithimbari P.C.E.A.
Family Health Clinic. Ithimbari Government Dispensary
given the fact that it is quite modern and the patients
are not charged any fees for the services provided,
has drawn more patients than the older and smaller
P.C.E.A. clinic. This is the best case of duplication
of health services while complete lack of services
occur side by side within the study area.

Kionyo Government Dispensary is located in
Kionyo local centre serving a population of about
6,710 people with a area coverage of 105 sq. kilometres.
The Dispensary which was started in 1952 is on one room
structure. The Dispensary has no access to a piped
water and the community normally fetch water for
the everyday running of the facility. The Dispensary
is further located near the Mount Kenya forest and
communication to the Dispensary is very poor. It is
not surprising for the Dispensary to stay for a whole
week without the neccessary drugs especially during
the rainly seasons when accessibility to the area is
terrible. Drugs and other necessary equipments, which
are got from Meru hospital during the rainly seasons

are to be delivered by foot. On average the
Dispensary serves about 50 patients per day when the
drugs are available. After the starting of Ithimbari
Dispensary many patients from Kionyo Sub-location
travel to Ithimbari Dispensary whose services are
reliable.

Nkuene location is served by Mikumbune Government
Dispensary, Uruku Dispensary, Uruku Prison Dispensary,
and Mitunguu Dispensary. Mikumbune Dispensary which
is the biggest among them is located about four kilometres
from Nkubu Catholic Hospital. Patients with major
complaints prefer to seek medical attention at Nkubu
hospital which is just four kilometres away. The fact
that the dispensary do not charge for the services
provided as it is a Government health facility makes
it have a large number of patients notwithstanding
the hospital in close proximity.

Uruku and Mitunguu dispensarires have similar
problems like those pointed out for Mikumbune and
Kinoro. The problem of transportation as it relates
to delivery of drugs and lack of staff houses are
the major constraints facing these dispensarires.
Uruku Prison dispensary caters for the prison staff
and members of the public within the dispensary. Like
with other Dispensaries, communication network is

very poor and during the rainly seasons the drugs are
not well delived.

Most of the Government health facilities
experience same problems, especially lack of manpower,
equipments and poor drug delivery. Although the
element of free care attracts patients especially
those with low incomes, the risk of walking long
distances and finally miss the drugs, makes most of
patients seek medical care elsewhere. The Rural Health
Unit Headquarter which is Meru District hospital is
expected to provide the supporting dispensaries with
technical leadership and administrative and logistic
support. This is hampared by the transportation and
financial constraints. The Meru District hospital
is also supposed to plan campaigns and mobile clinics
and also to act as the referral hospital for all the
dispensaries.

4.2   MISSION HEALTH FACILITIES:

The missions were the first bodies in Kenya to
attempt the medical care of the population, and that
as a means of evangelisation. It is therefore no wonder
that most of the health care in South Imenti Division
is done through the mission health facilities. We
noted earlier that the study   area is served with

only one Catholic hospital at Nkubu which also
provide a network of mobile health clinics. Chogoria
P.C.E.A. hospital which is located outside the study
area provide a network of dispensaries and mobile
health clinics in the study area. Although Chogoria
P.C.E.A. hospital is situated in Nithi Division its
influence and provision of health care stretch beyond
the administrative unit in which the hospital is
located.

Nkubu Catholic hospital has the biggest number
of hospital beds (260) in the district, and is located
in Nkubu Urban Centre. The hospital serves a population
of South Imenti of 103,543 people as per 1979 population
census, in an area of 392 sq. kilometres. Chogoria
P.C.E.A. hospital which is located about three
kilometres from the bouder of the study area has a
significant part to play in provision of medical care
for the people in South Imenti Division. All the
Mission health facilities are either ran and managed
by Catholic Church or P.C.E.A. Chogoria. The two
major religious organization within the study area are
Catholic and P.C.E.A.

In Igoji location there is St. Ann Maternity
Cottage managed by the Catholic Church and located
at Igoji rural centre. The dispensary provide services

to outpatients and has facilities for about twenty
maternity cases per given period. The church has also
a dispensary within Igoji location at Mworoga which
caters for outpatients only. The entire running of
the dispensaries is the responsibility of the church
and their charges are relatively cheaper than other
private clinics. It is not common to find the
problems of drug shortage in these two dispensaries
as is the case with the government health facilities
in the area. The church also run and manage Igandene
Dispensary located at Abogeta location. Also ran and
managed by Catholic Church is Gaturi clinic within
Abogeta location. The major problems experienced by
these facilities are lack of proper communication
services in terms of road network and better and
bigger buildings.

Apart from Nkubu Catholic hospital and St. Ann
Maternity Cottage, the other health facilities are
located in very remote areas where most community
services are lacking. The creteria adopted in
locating the Catholic Health facilities to the
present location has more to do with religious
consideration than on any other policy of distance or
population density. A good example is Gaturi
clinic which is located at the middle of peoples
farms with very poor communication network.

Chogoria P.C.E.A. hospital has a number of dispensarires located in the three locations. In Igoji location there is Kathigu and Gatuntune dispensaries. In Abogeta. there is Nkacii and Makandune dispensaries and Ithimbari Family Health Clinic. In Nkuene location there is Gaatia, Kathera and Kirogine dispensaries. The creteria for location is the same to that of the Catholic Church facilities. The church considers the religious influence more than other considerations like travel distance or population density. Like the Catholic Managed health facilities, the P.C.E.A. health facilities are better equipped, and drug delivery is more reliable than in Government health facilities.

It is however important to note that most of the people of a given religions sect prefer to seek for medical care at the health facility provided by their church or in the Government health facilities. The aspect of religion is quite strong that some of the people have a belief that if they seek medical care in a different religions health facility they might be poisoned. For this reason then, we find many cases of bypass and underutilization and overutilization existing side by side.

4.3 PRIVATE AND 'HARAMBEE' FACILITIES:

It is important to point that there are no
Harambee managed health facilities in South Imenti
Division at the moment. There are however a number
of private clinics which are specifically located in
the market centres. There are cases where the
community started the building of a health facility
and then after completing the structure asked for
assistance from either the Government or the
Mission. Most of the P.C.E.A. managed Dispensaries
started as a self-help project and the P.C.E.A. church
only took over the management inorder to supply them
with manpower, equipments and drugs. Kinoro Dispensary
also started as a self-help project but latter was
taken over by the Government.

There are several private clinics in South Imenti.
Most of these clinics are located in the market centres
where the clinic officers have plots in which they
operate. This is purely governed by the profitability
of the bussiness and it has nothing to do with any other
criteria of location. In Igoji location there are three
private clinics located in Igoji market and run by
three clinic officers. In Abogeta location there are
two private clinics, one located at Kionyo local centre
and the other at Kithurine. Nkuene location has three
private clinics located at Nkubu urban centre and
one at Kagwampungu local centre in Kathera Sub-location.

Mitunguu market centre has a private clinic
supplementing Mitunguu Dispensary.

Although the Private Clinics charge high fees
patients continue to visit them because they are
offered credit facilities (when the patients are not
able to pay immediently) to pay when they receive their
payments from tea or coffee. (Map No. 6)

4.4   RELATED COMMUNITY SERVICES:

Health services by themselves have a limited
impact on overall development of the health of any area.
The combined effect of other community services
is fundamental in provision of health care.   Particular
support is therefore required from such sectors as
agriculture, water development, nutrition, education,
community development, information and broadcasting,
sewage, service centres among others.

Education, like health is an essential component
of socio-economic development.   Each school is part of
the community and, indeed, can   be regarded as a
community itself.   Healthy children learn well so it
is important to ensure that school children achieve
the highest possible level of health.   Education on the
other hand help people to understand ways and means of
controlling and curing sickness.

Public utilities such as water supply, sewage,
electricity, transportation network, telecommunications
and other related community services are very
important in the provision of better health to the
people. It is important to note that each location in th
study area has different major constraints which
render better health of the people difficult. It
is nevertheless easy to point out that among the major
problems, transportation network is at the apex.
Apart from the newly constructed Embu-Nkubu road, the
rest of the roads in the area are unaccessible during the
the rainy seasons. Improvement of health services in
South Imenti therefore should go hand in hand with
improvement of transportation network.

The problem of water supply also renders provision
of health services difficult. Most of the health
facilities have no access to reliable water supply.
Kionyo dispensary is a good example where the
community volunteer to fetch water for the running
of the dispensary. Mworoga dispensary also has the
same problems. Although some of the health facilities
have facilities for water supply, it is common with
most of them to stay for a week or more without water.

Community services like electricity and
telephone services although some people would dismiss

them as 'luxury' are also essential for better
health care. The only areas provided with telephone
services are those on the Meru-Embu road whereas
those on the remote interior parts of the division
have no access to these services. Lack of
accommodation for health staff constitutes a
major constraint in the study area. Experience
shows that even when staff are' available it may
be impossible to deploy them in the needy areas
due to shortage of housing. We therefore find
that the situation is not so good in relation to
community services in the area.

4.5   STAFFING LEVELS

In South Imenti division, like anywhere else, in
Kenya, staffing levels and qualifications of the health
staff vary relative to the size and nature of the
health facility. We shall look at the staffing
situation in the study area for both the public and
private provided health facilities. As we noted
earlier, the highest level of health facility in the
study area is of a hospital status and the area is
not provided with any Health Centre apart from
several dispensaries. A field survey carried out
in the study area for 13 dispensaries revealed that
there is a big shortfall between what is existing
and what the Government staffing norms provide for a
dispensary. This problem is common in both the
Government and Missionary provided health facilities.
The following tables show the nature of staffing and
the variations thereof.

Table 4.2

STAFFING IN THE DISPENSARIES

Government provided Dispensaries

NAME OF DISPENSARY

Category of Staff	Kinoro	Kanyakine	Kionyo	Ithimbari	Mikumbune	Uruku	Uruku Prison	Mitunguu	Total
Clinic Officer	.	.	.	1	.	.	.	.	1
EN/EM/ECN	4	2	1	2	2	2	1	1	15
Patient Attendant	.	.	.	.	1	1	.	1	3
General Attendant	2	2	2	2	1	.	2	1	12
FHFE	2	.	.	.	.	.	.	.	2
Total	8	4	3.	5	4	3	3	3	33

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Table 4.3 :   Missionary provided Dispensaries

NAME OF DISPENSARY

Category of Staff.	St. Ann-Igoji	Ithimbari	Igandene	Gaturi	Gatuutune	Total
Clinic Officer	1	.	.	.	.	1
EN/EM/ECN*	4	1	1	1	1	8
Patient Attendant	2	-	.	.	.	2
General Attendant	23	1	1	1	1	27
EHFE*	.	1	.	.	1	2
Total	30	3	2	2	3	40

*EN - Enrolled Nurse
 EM - Enrolled Midwife
 ECN- Enrolled Community Nurse
 FHFE - Family Health Field Educator.

The Table below sets out the Ministry of Health current
(for Rural Health Centres and Dispensaries type 1) and
planned (for dispensaries type 11) staffing norms for
Rural Health Facilities.

Table 4.4   Staffing Norms

Staff Category	Rural Health Centre[1]	Dispensary[1]	Dispensary[2]
Clinial Officer	1	.	3
Enrolled Community Nurse	5	2	3
Public Health Officer	1	.	.
Public Health Technician	1	1	1
Family Health Field Educator	2	.	.
Laboratory Technician	1	.	.
Statistical clerk	1	.	.
Patient Attendant	3	1	2
General Attendant	5	1	3
Driver	1	.	.
Cook	1	.	.
Watchman	2	.	.
Total	24	5	9

Source: MOH, Published in Integrated Rural Health and
          Family Planning Project - Plan of
          Implementation. October 1983.

[1] Current norms, as revised in 1980. Previously dispensaries type 1
had a norm of one ECN and RHCs four ECNs. No Public Health Officers
were previously included in the RHC staffing norms.

[2] Planned. For dispensaries type 11 serving populations in the upper
range of the 8,000 to 16,000 bracket the norms of three ECNs is
likely to prove too low.

In Table 5.1 we find that there is a big disparity in the distribution of health staff amongst the dispensaries. The Government staffing norms for type 1 dispensary provide for 2 Enrolled Community Nurses 1 Public Health Technician , 1 Patient Attendant and 1 General Attendant. For a type 11 dispensary the Ministry provide for 3 Enrolled Community Nurses, 1 Public Health Technician , 2 Patient Attendants and 3 General Attendants.

We find that although all the dispensaries are expected to be of the two types, it is not reflected by staffing as it can be noticed relating to the situation in the study area. There are cases where there are more categories of staff than provided by the Ministry of Health staffing norms, while on the other hand, there are cases of less staff for particular categories than otherwise proposed by the Ministry of Health. Kinoro Dispensaries is provided with 4 Enrolled Community Nurses while the Ministry requires a dispensary of that magnitude to have three Enrolled Community Nurses. Apart from Kinoro and Ithimbari Dispensaries all others have less staff than otherwise expected. Ithimbari Dispensary is provided with a Clinical Officer placing it into a better position than all other dispensaries in terms of staff.

This disparity in staffing defies the Government
policy that health facilities of equal levels should
be equally staffed. The case is similar with the
Missionary provided dispensaries as can be noticed in
Table 5.2. St. Ann Maternity Cottage leads with 30
members of staff, but this can be explained by the fact
that the health facility provide services for expectant
mothers. St. Ann Maternity Cottage, although taken as
a dispensary is of its own level given the services
it provides. The rest of the Missionary health
facilities fall below the Ministry's staffing norms
as is evident in Table 5.2.

4.6   SPARTIAL DISTRIBUTION:

The other level of disparity is the spatial
distribution of the dispensaries. For the purposes
of comparison we will look at the dispensaries on a
locational basis. As earlier stated, the area is
served with only one hospital, no health centre but
several dispensaries. We shall therefore look at
the dispensaries as they are located in particular
locational administrative unit. Igoji location is
served with one Government dispensary, four missionary
dispensaries and three Private clinics. Abogeta
location has three Government dispensaries, five
missionary provided and three private clinics. Nkuene
location is served with four Government provided
dispensaries, three missionary provided and 4 private
clinics.

Table **4.5** .   DISPENSARIES IN THE AREA

Location	Government	Missionary	Private	Total
Igoji	1	4	3	8
Abogeta	3	5	3	11
Nkuene	4	3	4	11
Total	8	12	10	30

*Nkubu Catholic Hospital is excluded in Nkuene's statistics.

Looking at Table 5.4 we at once recognise that Abogeta and Nkuene locations are better served with dispensaries. This disparity can be seen more clearly when we look at the population, geographical size and the density of the three locations.

Table **4.6** :   POPULATION DENSITY

Location	Population	Sq. Kilometres	Density
Igoji	30,848	119	257
Abogeta	31,899	138	229
Nkuene	40,796	134	303
Total	103,543	392	263

Source: Population Census Report 1979.

Usiny Health Dispensary/Area Ratio we find that
Igoji which has 8 dispensaries to its 119 square
kilometres comes out with a ratio of 1:15 km^2,
Abogeta has a ratio of 1:13 km^2 and Nkuene has a ratio
of 1:12 km^2. This analysis should however not be
mistaken for the MOH Health Facility/Area ratio for
the Ministry takes health facility to be of the level
of a health centre. This can not be done for the
study area since there are no health centres. The
analysis is however important for comparing health
Dispensary/Area Ratio for the three locations.

The other basis on which comparison can be done
is by Health Facility/Population Ratio. For our
comparison purposes we shall use Dispensary/Population
Ratio. With respect to Dispensary/Population Ratio
Igoji location comes out with a ratio of 1:3856,
·while Abogeta location has a ratio of 1:2900, and
Nkuene location has a ratio of 1:3709. Again on the
basis of this criteria it is clear that Nkuene and
Abogeta locations are better placed than Igoji
location. Abogeta location is the best among the
thee locations.

Looking at Table 5.4 we find that Government
Dispensaries are less intense. The rural health unit
concept provide that the dispensaries and Health
Centres are supposed to form the rural health unit.

Four dispensaries are supposed to serve a particular
health centre and when this number exceed four, one
of the dispensary should be upgraded to health -
sub-centre level. This does not seem to be the case
in South Imenti. The division is served with eight
Government dispensaries and yet the entire division
has no health facility of a health centre status at
present. According rural health unit concept the
area ought to have two health centres which should
be supported by the eight dispensaries.

Another important aspect in the distribution
of health facilities is that government health centres
should be at least 8 kilometres apart or 2 hours walking
distance. There is no doubt that this is not the case
in our study area since the area is not served with any
Government health centre at present.

4.7   UTILIZATION OF INDIVIDUAL FACILITIES:

Accessibility is an important factor in
provision of health care. Accessibility should not
be seen only through geographical location but also
factors like acceptability and affordability must be
considered. Availability of health services within
a given community offers easy accessibility, in terms
of both effort and cost, to the users. We have seen

that the health services are not readly available in
the study area. We have also seen that the level of
health services fall below the expected. The fact
that the study area is served with only one hospital
and no Health Centre makes it difficult for patients
who require the services of these two levels of
health services.

A field survey reveled that 4% of the sample,
sort medical care within less than 1 km, 19% within
1 to 2 km; 31% within 2 to 4 km, 20% within 4 to 8
km. and 26% within more than 8 kms.

Table 4.7   Distance to the health facility last attended

Distance (Km)	Percent of Individuals
Less than 1 km.	4
1 - 2 km.	19
2 - 4 km.	31
4 - 8 km.	20
+8 km.	26

Sample size 150

People will sometimes use a health facility
not so much because they need its services but just
because the facility is accessible to the people.

65 percent of the sample size sort health care at
the nearest health facility, while 35% prefered
another facility. Distance alone does not determine
the use of a given health facility by the community
but rather other related factors such as the
geographical setting, acceptability and affordability
do have their effect. Distance also could be short but
due to other geographical obstacles and means of
communication may make it impossible to cover a
relatively short distance. The study area is
characterized by deep valleys with deep rivers flowing
down them (some have no bridges across them), poor
road network and hills and forests. Communication is
therefore both very difficult and irregular in this
area.

People's acceptance of a health facility and
the attractivity of the facility to the people may
have a bigger role in influencing the people's use
of the given health facility. This is true for most
Government sponsored facilities. The field survey
revealed that in most of the time especially during
the rainy seasons the Government dispensaries
receive no drugs partly because of communication
problems and partly because of financial and
managerial constraints. Kinoro, Kionyo, Uruku

and Mitunguu dispensaries are good examples.
People may prefer to travel longer distances to seek
health care rather than visit the local health
facility where the services given are unsatisfactory
as perserved by the patients and not necessarity as
judged by the medical professional. 62 percent of
the respondents felt that they waited for long
for treatment in their last visit to the health
facility. Only 38 percent was satisfield by the
duration of waiting before receiving the medical
attention. The health personnel might not meet
the expectations of the patients and this would
determine where a person would seek health care next
time.

Table 4.8 : Opinion of treatment received as
perceived by patients

Opinion	Percent
Poor	15
Fair/good	62
V. Good	8
None	15

Sample size 150

Only 8% of the respondents felt that the
treatment they received from the health facility
last visited was very good. 15% felt that the

treatment was poor and 62% felt that it was fair.
The opinion the people have towards a given health
facility would to a greater extent determine
the level of utilization. The network of other
health facilities available in that community may also
influence the people's use of a particular health
facility notwithstanding its distance.

4.8   ECONOMIC CONSTRAINTS:

Economic barriers exclude many people in the
study area from receiving the type of health care they
would wish to have. Even where users are not
charged for services, as with the Government health
facilities, the costs of transportation and time
away from work can be prohibitive for the poor.
In any community however, the general level of
health is largely determined by the socio-economic
status of the people. Money can buy health services
and environmental improvement. It is very difficult
however,to get an accurate assessment of people's income
because people are reluctant to disclose their income
because at time, they are suspicious of the motives
of the investigator. The important indicators of
economic status of the people in the study area are:
livestock and land holdings, farm incomes, farm assets
and occupations of the household members. The
problem with using materials possessions as indicators
is that they might not be placed where the interviewer

could see them, and people might be reluctant to
discuss whether or not they actually have them. Most
people in this area are poor as can be seen in the
table below.

Table 4.9   INCOME

Income per year (in Ksh.)	Percent
Less than 5,000	31
5001 - 10,000	22
10,001 - 30,000	35
30,001 +	12

Sample size 120

65 percent of the head of the households
were farmers, and 19 percent were institutional
employees while 12 percent were businessmen. This
is shown in Table 5.9 below

Table 4.10 Occupation of the head of the household

Occupation	Percent
Farmer	65
Institutional employee	19
Business	12
Other	4

Occupation is an important index to measure the economic status of an individual. The more progressive farmers for example, would normally have a different life style to a peasant, and his family would probably have better health due to such factors as improved nutrition, better housing and different health behaviour. It should be noted that those in instituional employment, also have their land which is managed in most of the time by their wivies. The fact that the husband has a wage earning job places the family on a higher plane of living. The farmers depend on the payments of their produce (i.e. coffee, tea, tobacco etc.) which in most of the time does not arrive in time. They are quite often confronted with unlimited wants and they have to share their scarce resources to the wants they judge urgent. The coffee and cotton payments are not regular and so you might find a situation where a family has not received any payments for more than half a year. This problem is even made worse by the fact that most of the families in the study area are too large.

Table 4.11 : Number of children in the household

Number	Percent
1 - 3	27
4 - 5	23
6 - 7	19
8 - 10	19
11 +	12

Sample size 150

50 percent of the households had a family of six or more children. It is only 27 percent of the families with less than three children.

The family size influences the health of a community. In Kenya today, one of the desirable goals in establishing and maintaining a healthy family is to space the births of children. This would ensure the health of the mother and the children. The parents would also be able to provide the required economic, social and emotional support for their children, all of which contribute to healthy living. A reduction of the population growth rate also may facilitate agricultural and technological modernisation. The population growth rate for the study area between 1969 and 1979 was 3.7 percent per annum. This is a high growth rate given the fact that it is a rural area with poor economic resources.

It must be emphasized that economic status and child health are greatly influenced by the frequency and number of births. It is true that for instance a mother who gives birth annually find it more difficult to give each baby the attention it requires. This might even bring about tensions and misunder- standings within their marriage. It is also true that depending on the family's economic status, the more people there are to be fed, the smaller the amount there is available for each individual and the

foorer the quality. In the final analysis this will
mean poor health for all the members of the family.

4.9 SOCIO-CULTURAL FACTORS:

The socio-cultural factors have some influence
in health care utilization. The community's beliefs,
practices and their concept of health and disease
as well as illness, will determine whether to seek
health care or not. Decision-makers quite often
influence the patients in terms of what services may
or may not be sought.

Table 4.12   Who advised on the type of Health Care
last sort

Advisor	Percent
Friends	15
Self	58
Relative/Parents	15
Medical Personnel	12

Sample size 145

We find out that in the study area 58 percent made the
decision themselves to seek a particular health care.
The important factors which will influence the
individual when seeking health care will be the
accessibility, availability and reliability of such
a health facility to the individual. The social and

the physical environment also contribute to people's
use of a health service. Although held attitudes
may not necessarily affect the decision to utilize
professional medical service, they are strong
determinants of the type of the health service utilized.
The study area being dominated by two religious
organization who also provide for health care in the
area, it is not surprising to find a patient bypassing
a health facility to seek health care in health
facility of their religion.

Table 4.3   The religion of the head of the household

Religion	Percent
Protestant	42
Catholic	50
Muslim	0
None	4
Other	4

Sample size 138

50 percent of the people of the study area are
Catholics and therefore it is not a wonder to find
that the Catholic Church is the sponsor of the
highest level of the health facility in the area.

The general level of health is to some extent determined by the education of the people. Education can improve health behaviour and help to prevent illness. Public cooperation is also influenced by education standards, the better the education, the more the cooperation is likely to be although there are few exceptions. Table 5.13 shows the education status of the people in the study area.

Table 4.14   Levels of Education of the head of the household.

Grade	Percent
None	7
Primary	58
Secondary	30
Higher	5

Sample size 150

It can be argued that most of the people in the study area are of the primary education level. Only 35 percent of the people are of secondary level of education and above. The absence of education however should not be pressumed to mean the absence of intelligence. Frequently an excellent general education may be completely deficient in any health education

content with the result that simply because individuals
have had a good general education, it cannot be
presumed that they possess health consciousness.
Health education has two meanings, a broad one which
means an increase in the understanding of the causes
of disease and the methods of promoting good health.
This form of education is a part of general education
and leads to a better knowledge of the sort of
problems described in Chapter one.

4.10.   ENVIRONMENTAL FACTORS:

In the study area, there are three main
environmental aspects which are related to much of
existing ill-health. These major factors are the
domestic water supply, disposal of human excreta
and insect and snail vectors of disease. Other
important aspects are housing, food hygiene and
accidents. Many diseases are carried by dirty
water and if pure water supply can be provided,
these diseases cannot occur. A plentiful water
supply for washing also helps to prevent many skin
diseases which are very common in our area of study.
The table below shows the source of water supply in
the study area.

Table 4.15   Sources of Water

Source	Percent
Private pipe	20
Community pipe	38
Stream/River	38
Other	4

Sample size 150

Bad water causes typhoid fever, diarrhoeas
and dysenteries especially in young children -
schistosomiasis and Guinea warm. These diseases
are very common in South Imenti. Probably the provision
of a pure water supply would do more than any one
other measure to improve health in the study area.
We notice that about 40 percent of the people get their
water in the rivers or streams. This should not
be interpreted to mean that these people have access
to water all the time because during the dry season,
the rivers dry and they are forced to travel longer
distances to fetch water.

The sanitary facilities are also important
indicators of a healthy environment. 92 percent
of the households visited had a type of a latrine.

Plate 2:

(a)   Water is not accessible in some parts of the
       study area.

(b)   Waiting for a turn to fetch water in some parts
       of the study area.

81 percent also had facilities for bathing and 15
percent used their rooms as bathrooms. 4 percent bath
outside at night. Although 92 percent of the households
visited,had a latrine, practically most households
had sanitary facilities which. if used, might not
protect the environment from contamination.

Although the people in the study area have
evolved their own particular styles of housing to
suit their social patterns, as well as to provide
suitable shelter, by using available local materials,
there are housing conditions known to be related to
illness or accidents. Some of the more common ones
in the study area is sharing dwellings with animals.
Some of the dwellings lack ventilation at night when
all the occupants are present, and also other animals
like goats·, sheep, and chicken. Overcorwding of
sleeping areas, and dangerous fire places is very
common in most of the homes in the study area. All
these factors mean alot to the health of the people
in South Imenti.

4.11   THE INTER-RELATIONSHIP BETWEEN THE RURAL HEAJTH
           UNIT CONCEPT AND SERVICE CENTRE CONCEPT AS A
           PLANNING CRITERIA FOR RURAL HEALTH SERVICES.

The Government of Kenya has worked out a policy
which consists of a network of Designated service centre
into which various facilities should be concentrated

Plate 3:

(a)   A modern sanitary facility.

(b)   A common sanitary facility which might not
       protect the environment from contamination.

and which, at the same time, ensures a more equitable
and rational geographical distribution of infrastruct-
ural facilities and social services in terms of
population distribution over the country. The argument
for this approach is that when facilities are grouped
together in one centre they are more convenient for the
local population since time, energy and money are
saved by combining journeys that would otherwise have
to be made to individual services scattered around.
Grouping these services is also more economical in that
water supplies, sewers and power lines can be installed
to serve all these activities more cheaply than if they
were scattered over a wide area. Another advantage
is that the road pattern between centres can be more
rationally constructed to serve centres which make
them more readily accessible.

In the provision of such services there should be
a balance between what is economically feasible and
the convenience of the rural population in terms of
accessibility. The minimum number of people required
to support a particular service function varies
according to the type of service. Specialized
facilities like hospitals can only be economically
provided in a few larger scale towns because the
minimum number of people required to support such a
facility economically is considerable. On the other hand,

a service like a dispensary requires smaller catchment
area to be economically viable, and therefore can be
provided in a greater number of smaller centresw which
in this way, also improves accessibility to everyday
services. These requirements of scale and accessibility
lead to the development of a distribution of interrelated
centres at different levels characterized by a few
large-scale towns and an increasing number of smaller
settlements, the smallest centres being the most
numerous.

Under the Health Unit Concept, rural health
facilities are expected to be designed to serve
population catchment areas of approximately 50,000.
However the actual size of each individual Health Unit
may vary in accordance with it's geographical and
settlement characteristics. Each Health Unit, when fully
developed consist of one health centre, one sub-centre
and a number of dispensaries which can be increased
according to population growth. The area should have
at least four dispensaries before it can be eligible
for the development of a health sub-centre.

When we look at these two planning concepts we
can see that the criteria used is more or less similar.
The major factors considered are, the catchment area,
population density, communication, topography and the

current distribution of services. In the selection
of growth centres, the idea is to locate services
within reasonable reach of the people they are meant
for. The services should also be located in such a
way as to correspond to the levels of the centres.
Under the Rural Health Unit Concept, planning of
Rural Health Units should as far as possible conform
with achievement of optimal accessibility in short and
long terms. It should also reflect preferred patterns
of movement in terms of communication network and in
regard to the topography of the area.

The Physical Planning Department has given the
guidelines for the locations of health facilities
and also the Ministry of Health has designated a
catchment area for each health facility. Table 5.15
shows this designation.

Table 4.16   Hierarchy of Centres and the Corresponding
              Health Facilities

Centre	Health Facilities
PRINCIPAL TOWN	
- National Capital	National Hospital
- Municipalities	Provincial Hospital
URBAN CENTRES	
- Rural Population 120,000	District Hospital
RURAL CENTRES	
- Rural Population 40,000	Health Centre
MARKET CENTRES	Dispensary
- Rural Population 15,000	Family Planning Service.
LOCAL CENTRES	
- Rural Population 5,000	None

Source: 1979/83 Development Plan.

From Table 5.15 it is clear that the Provincial
hospital is expected to serve a threshold more or less
equal to that of a Province. The district level
hospital is expected to serve a population threshold
of 120,000, a health centre is designed to serve the
population of 40,000, a dispensary is expected to
serve a population of 15,000 and no health facility
in a local centre. The Rural Health Unit which is
expected to have its headquarter in an hospital or a
health centre should serve a population of 50,000-
70,000 people.

We find that the two planning concepts are not
conflicting and infact should be used together for
planning for rural health services. For convinient
and rational planning all health centres should be
located in centres of at least Designated Rural Centre
Status since these have a similar population catchment
area, and for the same reason health sub-centres should
be located in designated market centres and
dispensaries in designated local centres. By the same
argument, priority for improvement should be given
to those existing facilities located in designated service
centres as against those outside them.

The major shortcoming of the Rural Health Unit is
its failure to consider the location of non-governmental

Plate 4:

(a) An example of an old health facility structure.
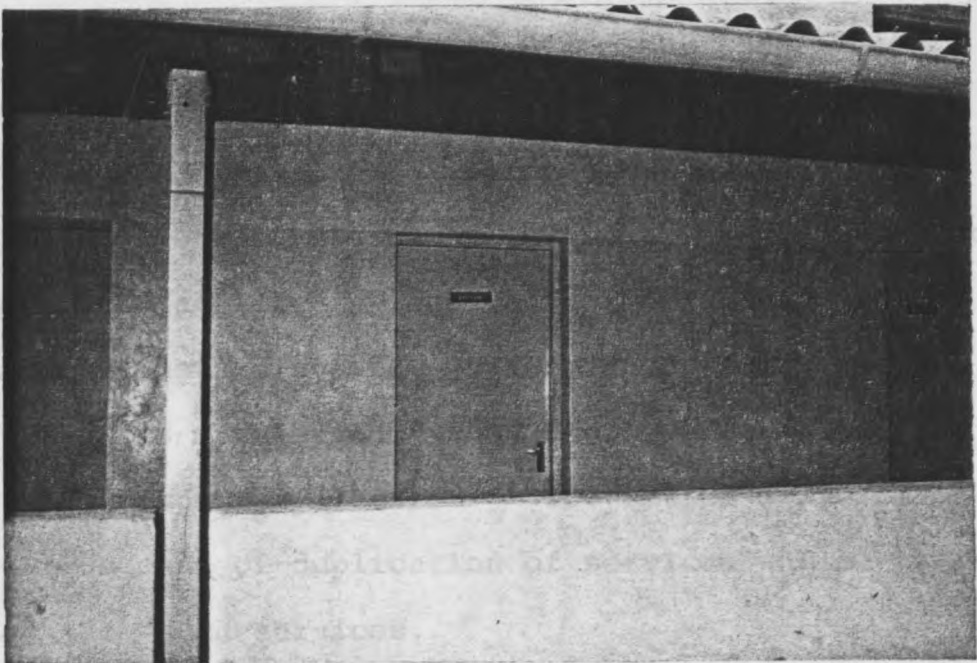
(b) A modern health facility structure.

health services which form the back of health services
in rural areas. Taking the case of South Imenti
Division where the highest level of Government
health facility is of a dispensary status, it would
be difficult to know the most rational location for
such facilities as there are many rural and market
centres without the health facilities. Although many
market centres have no health facilities in the study
area, we find dispensaries located in non-designated
areas as is the case with Gaatia, Makandune, Kathingu,
Mworoga Ithimbari, Gaturi, Nkacii, Uruku, Kathera and
Kirogine. A market centre like Miruriri has no
dispensary while non-designated area like Ithimbari
is provided with Government dispensary.

It is important to note here that inspite the
Government spatial planning policy, anomalies exist in
the location of health facilities in the study area.
Ithimbari Dispensary   which is the newest constructed
Government facility is located in a non-designated
area notwithstanding the Government policy. The
situation is made worse by the fact that there is a
P.C.E.A. Dispensary located   100 metres away. This
is a true case of duplication of services while other
areas lack such services.

Plate 5:
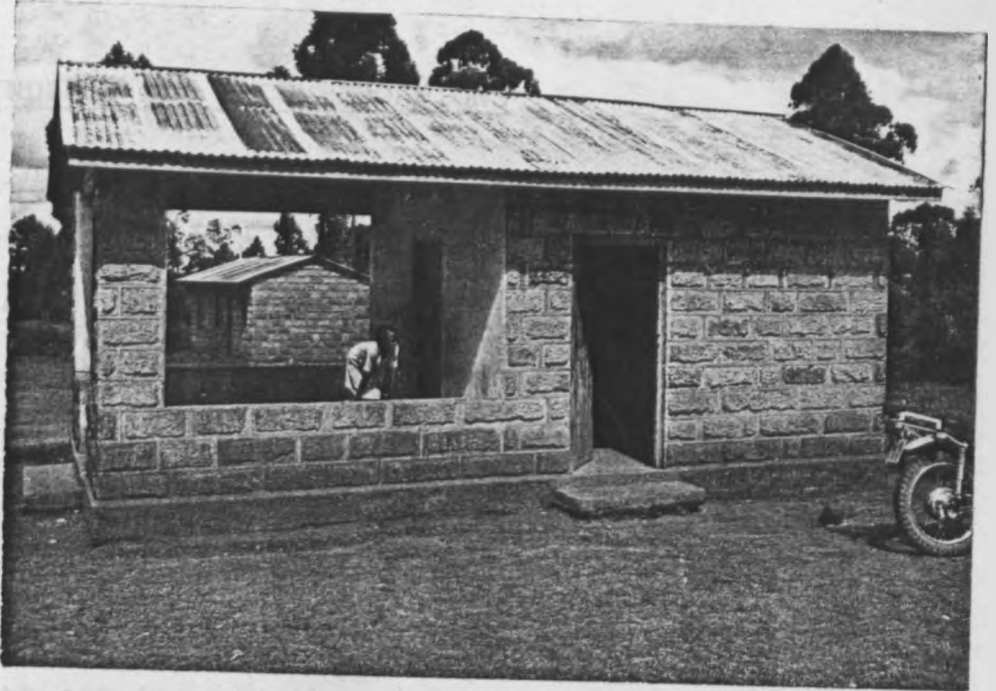
(a)   A one-roomed Dispensary in the study area.
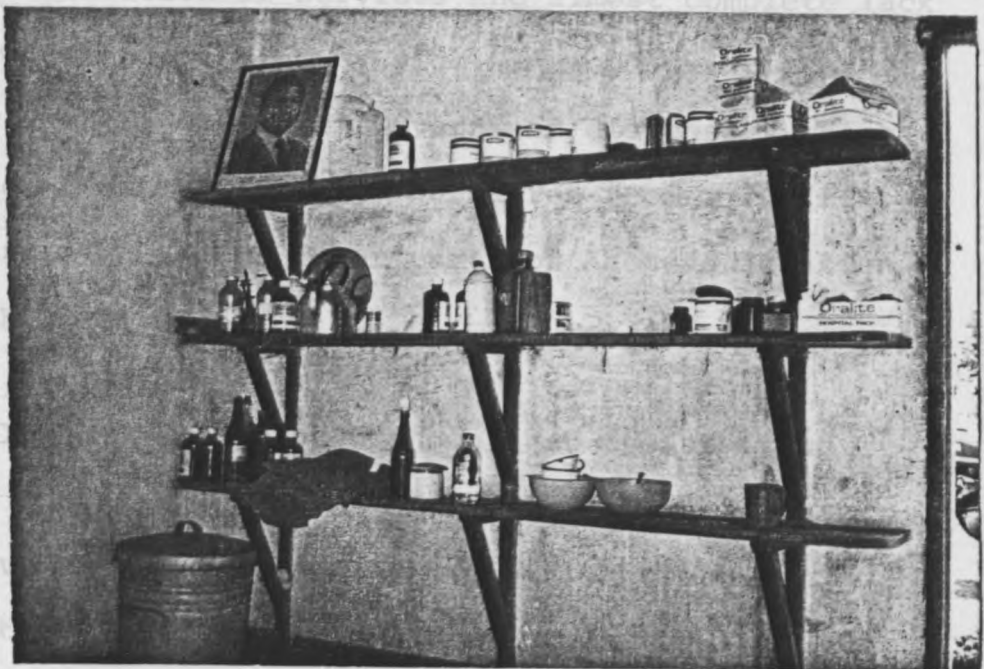
(b)   The inside of the Dispensary which does not
       reflect high standard of hygiene.

CHAPTER FIVE

5.0 FINDINGS AND RECOMMENDATIONS

It has been shown from the analysis of the study
area that there are a number of factors responsible for
the state of health prevailing in the area. It has been
noted that there is inadequate health services within
effective reach to people's homes. This is both because
of lack of services in general and also because the
existing spatial pattern of health facilities is not
sufficiently related to population density. Most of
the health services in the study area are often located
outside the designated service centres or in centres of
a very low level while some centres of a higher level
have no health facilities at all. There are also cases
where duplication of services and almost complete lack
of services occur side by side. A good example of
duplication is Ithimbari Government dispensary which
has been constructed only 100 metres from a P.C.E.A.
dispensary while the lower parts of Abogeta location
lack these services.

It has further been shown that the staffing
levels and qualifications of the health staff vary
relative to the size and nature of the health
facility. A big shortfall in relation to what is
existing and what the Government staffing norms
provide for a particular health facility has been
identified. This problem is common in both public and

Plate 6:

(a)   A P.C.E.A. Dispensary located 100 metres
        from a Government Dispensary.

(b)   A modern Government Dispensary located next
        to the above P.C.E.A. Dispensary.

private health facilities.

Although the health facilities of same level are expected
to have equal level of staff, this is not the case in
the study area. There are instances where there are
more categories of staff than provided by the Ministry
of Health staffing norms, while on other hand, there
are cases of less staff for particular categories than
otherwise proposed by the Ministry of Health. Kinoro
dispensary is a good example of a case where there are
more staff of a particular category than spelt out in
the staffing norms. There are four enrolled Community
Nurses while the Ministry requires a dispensary of
that magnitude to have three. Most of the health
facilities however fall below the Ministry's staffing
norms.

It has also been shown that there is disparity
in the spatial distribution of the health services. On
the basis of Dispensary/population ratio, Igoji location
comes out with a ratio of 1:3856, while Abogeta location
has a ratio of 1:2900, and Nkaene location has a ratio
of 1:3709, On the basis of this criteria Abogeta is
best placed than Nkuene and Igoji being the worst
in terms of dispensary/population criteria. Although
the health unit concept provide that four dispensaries
are supposed to serve a particular health centre
and when this number exceed four, one of the dispensary
should be upgraded to a health-sub-centre level, it

is not the case in the study area. The division has
eight Government dispensaries with no Government health
centre or hospital.

Although the health centres are supposed to be
at least 8 kilometres apart or 2 hours walking distance,
it is not reflected in South Imenti since the division
is not served by any health centre.

It was noted that a major problem in provision
of health care was that of under-utilization of some
of the existing modern health facilities. Economic,
Demographic, Socio-cultural factors together with the
nature of health services were identified as factors
determining utilization. Economic barriers were noted
as excluding many people from receiving the type of
health care they would wish to have. Even where the
patients are not charged for services, as with the
Government health facilities, the costs of transportation
and time away from work was taken as prohibitive for
the poor. The people in South Imenti who are essentially
small- farmers are often confronted with unlimited needs
and they have to share their scarce resources to the
needs they judge urgent. This problem is made worse by
the large family size which is common in the area.

There were also noted to be major socio-cultural
factors influencing the health care utilization. The
community's beliefs, practices and their concept of
health and disease as well as illness determines whether

to seek health care or not. It has been noted that health facility to be utilized at the planned rate, it should not only be accessible to patients, but its services should be of acceptable quality, as perceived by the patients, and not necessarily, as judged by the health professionals. For effective rural health planning the problem of underutilization should first be tackled.

Environmental factors were also identified as closely related to much of existing ill-health. Domestic water supply, disposal of human excreta, housing, hygiene and accidents were singled out as major aspects responsible for the poor health of the people in the area. Most of the people in the area get their water from rivers and streams which are not in most cases sources of pure water supply. Practically most households in the area have sanitary facilities which if used, might not protect the environment from contamination. Most of the housing conditions are not condusive to good health. It was noted that some of the dwellings lack ventilation and also animals like goats, sheep and chicken share same dwellings with people. All these factors have been identified as contributing to the state of health in the area.

5.1 PLANNING IMPLICATIONS

Given the limitations existing in the rural
areas, when planning for rural health services, there
is need to look at the effective, cheap and available
technology which could be used in the provision of
health services. The scarcity of health facilities
(Physical and human) should not be the only concern
of health planners, but more so the extent of utilization
of the available health services by the population
concerned. Provision of additional rural health
facilities will improve the statistical health care
coverage in the rural areas since the population/health
facility ratio will decline, but this does not mean
the health status of the people concerned has gone up
(as measured by a decline in mortality and morbidity
rates) over the same period. There is therefore
a need for a careful re-examination of the planning
policy for the future development of not only the rural
but   all health services in the country.

It was earlier noted that the health care delivery
approach adopted by the Government of Kenya has been
largely promotive of highly sophisticated and centrally
located medical care and, even when not so, has frequently
been unrelated to local realities. Those services have
often operated in an isolated manner, neglecting other
factors contributing to human welbeing such as education,
communications, agriculture, social organization,

(

community motivation, water supply, nutrition, and
other related factors. There is therefore a need for
a more intersectoral approach involving all the health
related sectors. For support to be effective it must be
well co-ordinated not just at the local or community
levels as well. The combined effort of other sectors is
much greater, and therefore it is absolutely necessary to
build a co-operation between different sectors otherwise
health services by themselves have a limited impact on
overall development of health of a community. Improvement
in socio-economic conditions, can improve the general
health status of the people hence it requires continued
action for socio-economic development, including health
programmes and the active participation of the people. It
is true that people's health depends far more upon what
they do than upon the efforts of health service workers,
however numerous. This implies that existing resources
should be fully utilized and promoted through concerted
action.

It has been noted in this study that the share
of the rural areas in the health budgets of Kenya is very
small compared with those of urban areas like Nairobi.
This implies that the access of large segments of Kenya's
population to health services is limited or non-existant
in that only about 30 percent of the rural population
in Kenya has reasonable access to any form of modern health
services, yet nearly about 87 percent of the population
reside in rural areas, while about 80 percent of Kenya's

health resources are concentrated in major cities of
Nairobi and Mombasa.

Medical education in recent decades as earlier
noted was focused on diagnosis and management of diseases
which often were not the only major health hazards.
This is reflected in the services provided, consisting
at best of costly curative services dependent on drugs
and on hospital care. The poor in the rural areas find
themselves at a disadvantage because of this approach.

If the present trends of health care continue,
the existing gaps will be further widened. For example,
the differences between urban and rural health services
will be accentuated. The health services will continue
to commit themselves to costly and specialized medical
care, requiring most of the health budget, and thus the
services will become even less accessible and unable to
meet the demands of the majority of the population.

The problem of underutilization has been identified
as a major concern limiting health care delivery. This
has been caused by lack of acceptable, accessible and
affordable health services which has made the consumer
view the health services with dissatisfaction due to all
these problems. This again calls for other health-
related programmes in agriculture, transport,
education, community development which may offer natural
base for health services.
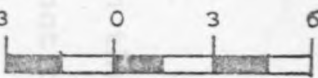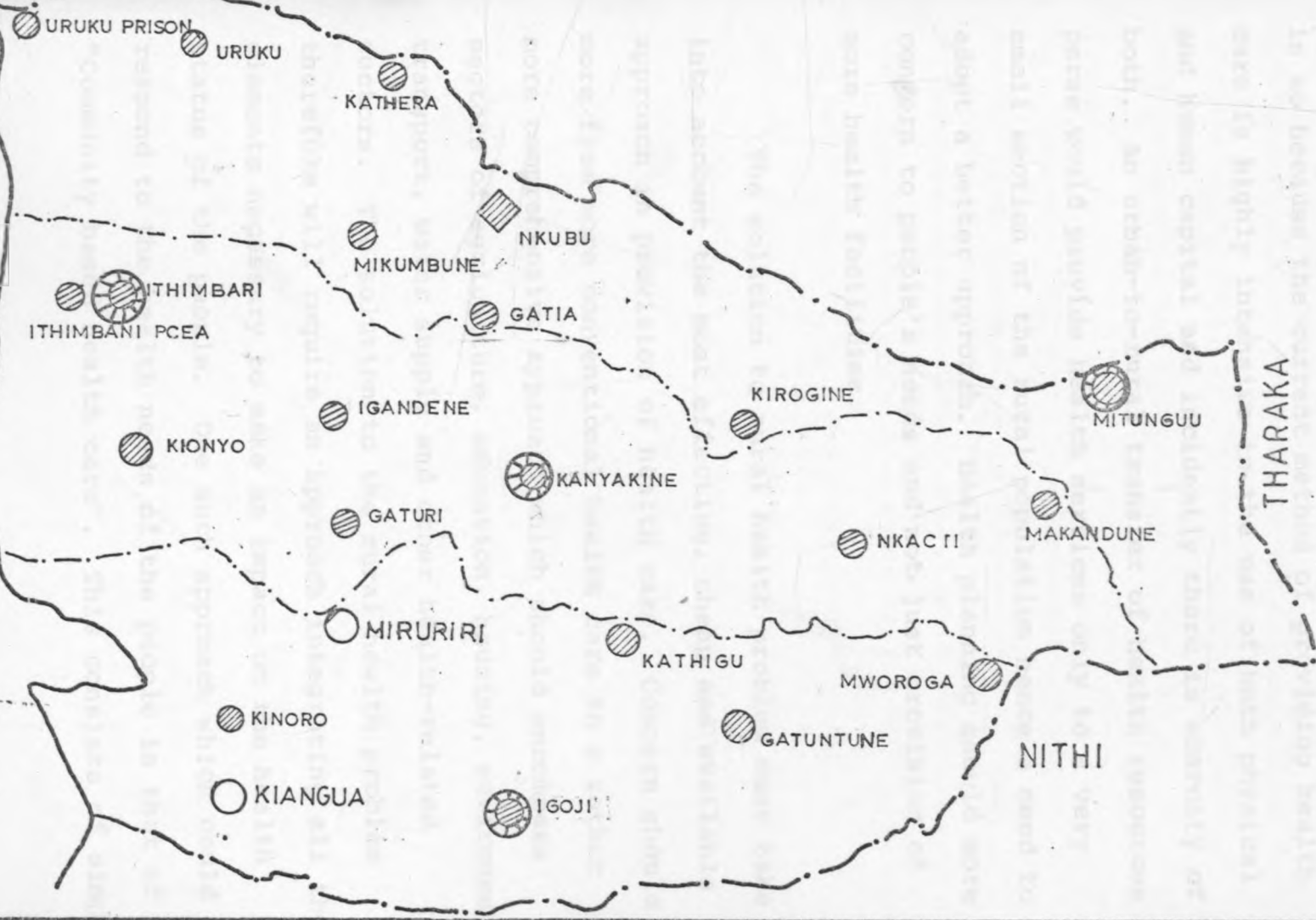
SOURCE: Kiambi (1980)

5. 2   POLICY APPROACH

It has been seen that health problem solution
in the rural areas is not one of just simply shifting
health resources from the urban-to-rural areas. This
is so because the current method of providing health
care is highly intensive in the use of both physical
and human capital and incidently there is scarcity of
both. An urban-to-rural transfer of health resources
perse would provide health services only to a very
small section of the rural population hence a need to
adopt a better approach. Health planning should more
concern to people's needs and not just provision of
more health facilities.

The solution to rural health problem must take
into account the most effective, cheap and available
approach in provision of health care. Concern should
more from more conventional health care to a rather
more comprehensive approach which should encompass
sectors of agriculture, education, housing, environment
transport, water supply and other health-related
sectors. The solution to the rural health problem
therefore will require an approach integrating all the
elements necessary to make an impact on the health
status of the people. One such approach which could
respond to the health needs of the people is that of
"Community based health care". This consists of simple

and effective measures, in terms of cost, technique,
and organization, which are easily accessible to the
people requiring relief from pain and suffering and
which improve the living conditions of individuals.
The effectiveness of formal public health services
can be enhanced by encouraging rural communities
to take responsibility for meeting some of their
most basic health needs.

All the agencies concerned with provision of
health care should adopt an integrated approach. The
Government, the Missionary and Private health facilities
should be located and distributed as per the government
laid down guidelines. Referral system should be
improved such that the Missionary, private and Government
health facilities work in coordination with other health
facilities irrespective of their provider.

A well functioning transportation system is an
absolute prerequisite for the delivery of health
services. The road network should be improved as a
matter of urgency inorder to enable accessibility and
travel by health staff to perform duties in the
communities especially outside the hospital and
dispensaries. This will also ease delivery of
medicine and other supplies also for referral of patients
and ambulance services. It is important to note that

efforts to develop an effective system for health care
require the problem of the whole transport system
to be tackled. Travelling distance could be reduced
by introducing faster and efficient methods of
transportation.

It was found that health services in the area
were inadequate. There is urgent need to provide for
more health services. Provision of new health services
should be coupled with improvement of the existing
health services such that they are adequately equipped
with health personnel and equipments. In order to
provide a rational pattern of health services in the
study area, the areas like lower parts of Abogeta and
Igoji locations which are totally lacking in any type
of health services should receive priority. Further
all health facilities should be located in designated
service centres and priority for improvement should
be given to those existing facilities located in
designated service centres as against those outside them.
This will achieve the Government aim of more geographical
balanced and equitable distribution of health facilities.
Kanyakine dispensary should be upgraded to a health
centre level since afterall the Nyayo wards are being
constructed. Igoji dispensary should be upgraded
to a health centre level since it is in a rural centre
and the population catchment allows for a facility of this

Plate 7:

(a) A modern staff house of a modern Government health facility in the study area.
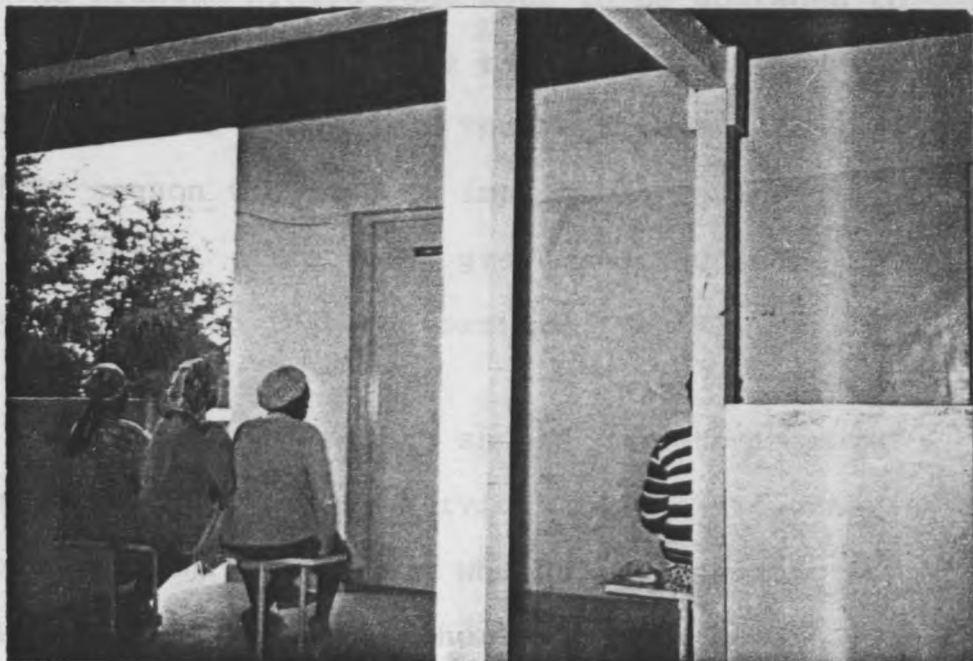
(b) Women patients waiting to be treated in a modern Government Dispensary.

magnitude. Ithimbari Government dispensary should
also be upgraded to a health centre level as the facility
is well equipped with buildings as it is the only
modern constructed health facility with beautiful staff
houses. Mitunguu dispensary should also be upgraded to
a health centre level to serve the lower parts of
Nkuene and Abogeta locations. Ithimbari P.C.E.A. health
clinic located about 100 metres from Ithimbari Government
dispensary should cease to provide health care on her
own since it is not only uneconomical but also irrational.
The building structure should be donated or bought by the
Government or the public to be a store for Ithimbari
Government dispensary. The other health equipments and
personnel could be transferred to Miruriri rural centre
or Kiangua local centre.

The Kiangua-Kionyo road need to be upgraded to
Gravel state inorder to serve the population and the
three dispensaries along it. The fact that during
the rainly season the road is impassable calls for
urgent attention. Also to be gravelled should be
Nkubu-Mitunguu road in the short-run (Map 9).

The Ministry of Health should help to improve
the quality of outpatient services in the dispensaries
by providing them with nurses who have diagnostic and
prescribing skills. In the short-run Meru hospital which

Plate 8 :

(a)   A timber built dispensary.
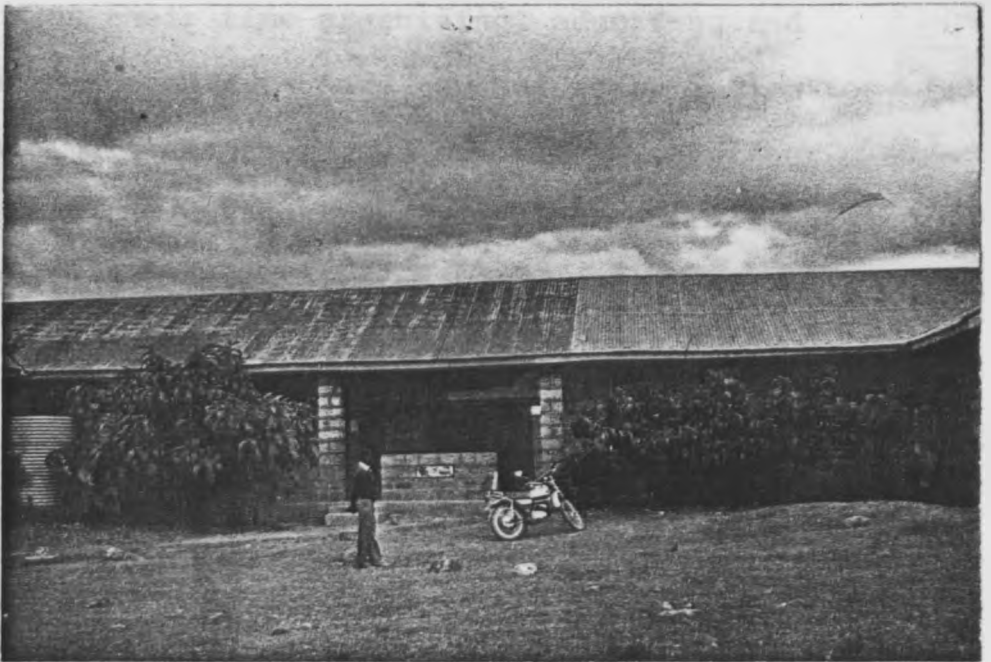
(b)   A modern dispensary common in the study area.

is the only training Government hospital in the district,
should make sure the distribution of nurses to these
dispensaries is optimal. Nkubu and Chogoria hospitals
are able to provide at least one community nurse for
their dispensarires.

The Community-based-health-care programmes
should be started in all of South Imenti division.
The programme which is concerned with the community's
welbeing in relation to education, agriculture, sanitation
and all health-related aspects is the best approach
in   providing health care.

Health education is important if effective health
care is to be achieved. The health personnel should
spend some of their time organizing, educating and
motivating the people to take the necessary action to
improve and maintain their own health. With proper
health education attitudes and behaviour of individuals
are changed and their health status improved by their
own actions.

CHAPTER SIX

6.1 SUMMARY AND CONCLUSIONS

In this dissertation, an attempt has been made to
show factors which determine the state of health
prevailing in the rural areas in general, and the study
area in particular. Proposals have been made with an
aim of modifying the existing situation. It has also
been observed that most of the people in the rural areas
have no health services within effective reach of their
homes. This state of affair is characterized by lack
of health services in general and also poor spatial
pattern of location and distribution of health services
which has resulted in health facilities being located
outside the designated service centres and as a
consequence has further resulted into duplication of
services and complete lack of services occuring side
by side.

It has also been noted that the provision of
conventional health care perse will hardly improve the
health status of the people, but rather a more
comprehensive approach which should encompass sectors
of agriculture, education, housing, environment,
transport, water supply and other health related
sectors should be adopted for effective health care.
Demographic and socio-economic factors, together with

the nature and levels of existing health services have also been pointed out has determing the health status of the people. For this reason then, if the health status of the people is to be improved all these factors must be given due consideration.

It has further been noted that the health care system should be more accessible and more decentralized. It should look more to the total situation of the people and be more community-centred. The 'Community based health care' programmes which is essentially health care made accessible to individuals by means acceptable to them, through their full participation on and at the cost that the Community and the Country can afford forms an integral part, both of the country's health system of which it is the nucleus and of the overall social and economic development of the community.

It is important to note here that first unless sick people can be cured in poor communities like South Imenti, it is practically impossible to make these people prevent the infections let alone being productive. In a poor family where there is a child sick with pneumonia, it is unrealistic to think that anybody in that household is in the mood to learn how to prevent these diseases. They want that child to be

saved. The scarcity of staff and medicines has been
the biggest single obstacle in providing health care,
and that this one factor alone discourages thousands
from seeking medical advice. It is more satisfying
to a parent, however poor, for his or her sick child
to be treated by someone who is qualified, and is not
a "non-physician". No man for example wants his wife
to be examined and given "family planning" by a non-
physician. In other words a para-medical does not
inspire the required confidence in the patients or in
their relatives as they do not have enough faith in
non-physicians. It is important to note here that
whereas raising of economic, social and cultural levels
of a people is a major factor in the decline of
disease it is equally important to appreciate that
conventional method of health care is certainly
playing a significant role in improving the health
status of the people. The two methods should therefore
co-exist depending on the nature of the health problem
prevailing at each particular time.

On location and distribution of health facilities
it is noted that all the facilities should be located
in the designated service centres and priority for
improvement should be given to those existing facilities
located in the said centres against those outside them.
This will achieve the aim of more geographical, balanced
and equitable distribution of health facilities. It

is also true that when various services are grouped

together in one centre they are more convenient for

the local population since time, energy and money

are saved by combining journeys that would otherwise

have to be made to individual services scattered

around. Grouping these services is also more economical

in that water supplies, power lines and other services

can be installed to serve all these activities more

cheaply than if they were scattered over a wide area as

is often the case at present. Also road pattern between

centres can be more rationally constructed to serve

centres which make them more readily accessible.

Footnotes:

1.   Schward Kurt (1975) p. 1.

2.   Health Strategy for Kenya, 1982 p. 1.

3.   Todaro, 1977 p. 69.

4.   Health Strategy for Kenya, 1982 p. 5.

5.   Ibid, p. 4

6.   Ibid, p. 4

7.   Lambo (1977)

8.   Bruant, 1969, p. 39

9.   Normal Scotney article - Africa Health Magazine
      p. 32 Vol. 2 No. 3 Dec., 1979.

10.   Lambo, op. cit.

11.   Development Plan 1979-1983 page 126.

12.   Kimani (1971) pg. 13

13.   Maina (1975) pg. 15.

14.   Schwarz (1975) pg. 14

15.   Ibid pg..16

16.   Suchman (1967) pg. 88

17.   Development Plan 1984/88 pg. 154

18.   Ibid pg. 154

19.   Ibid pg. 159

20   Ibid pg. 20.

BIBLIOGRAPHY

1. Bryant, J.: Health and the Developing World
        Cornell University, 1969.

2. Bernard, F.E.: Recent Agricultural Change,
        East of Mount Kenya.
        Verlag, Munchen, 1972.

3. Christaller W., : Central Places in Germany -
        translated by Baskin C.W., Prenhie Hall,
        inc., Englewood New Jersey, 1966.

4. Colbourne, Michael - Planning for Health.
        Oxford University Press, 1963.

5. Doyal, L.: The Political Economy of Health
        Pluto Press Ltd., London, 1979.

6. King, M.: Medical care in Developing Countries
        A Symposium from Makerere, Oxford University
        Press, 1966.

7. Kiambi, K.D. : The role of Designated Service
        Centres in Rural Development: A case
        study of South Imenti Division,
        Meru District. Unpublished M.A. Thesis,
        University of Nairobi, 1983

8. Kimani, V.N.: Patterns of Utilization of
        Presbyterian Church Hospital in Kenya,
        Unpublished M.A. Thesis, 1983.

9. Maina, B., Socio-Medical Enquiry.
        Unpublished M.A. Thesis, University of
                1977.

10. Mwabu, G.M. : A model of Household Choice
        Among Medical Treatment Alternatives in
        Rural Kenya, a Ph.D. Dissertation,
        Boston University Graduate School, 1984.

11. Mwabu, M.G.: Conditional logic Analysis of
        Household Choice of Medical Treatments
        in rural village in Kenya. Paper
        presented at the African Studies Association
        Conference in Boston, December, 1983.

12. Mwabu G.M. : The effects of Ownership of Health
        Care systems on Distribution and Content
        of Health Services - a paper presented
        at the International Workshop on Health
        Policy in Eastern and Southern Africa,
        Arusha Tanzania, June, 1984.

13.   Mwaba, G.M.: The Economics of Primary Health
          Care in Kenya : The Case of Tharaka Rural
          Health Unit. a paper presented at the
          Department of Economics, University of
          Nairobi, April, 1980.

14.   Opukah, S.: The distribution of Rural Health
          Facilities - A case   study of Mumias
          and Butere Divisions, Kakamega District.
          an M.A. Thesis, 1979.

15.   Read, M.: Culture, Health and Disease.
          Tavistock Publications, 1966.

16. ⨯ Schwarz, K.: Planning Medical Care.
          H.K. Lewis and Co. Ltd., 1975.

17.   Siegal, S.: Non-Parametric Statistics for the
          Behaviour Science.
          McGraw Hill, C., 1956.

18.   Suchman, E.A.: Evaluation Research Principles
          and Practices in Public Service and
          Social Action Programmes.
          Russel Sage Foundation, N.Y., 1967.

19.   Vogel, L.C., A.S. Muller, R.S. Ondingo, Z. Onyango
          and A. De Geus; : Health and Disease Centre
          Medical Research Centre, Department of the
          Royal Tropical Institution, Amsterdam,
          Netherlands, 1974.

20.   Africa Health Magazine: Volume 2 Number 8
          . May, 1980.

21.   Africa Health Magazine : Volume 2 Number 6
          March, 1980.

22.   Africa Health Magazine : Volume 1 Number 2
          November, 1978.

23.   Africa Health Magazine : Volume 2 Number 3
          December, 1978.

24.   Africa Health Magazine : Volume 2 Number 2
          November, 1979.

25.   Africa Health Magazine : Volume 1 Number 11
          August/September, 1979.

26.   Africa Health Magazine : Volume 5 Number 1
            October/November, 1982.

27.   Africa Health Magazine : Volume 5 Number 4
            April/May, 1983.

28.   Bennett, F.J.: Community Diagnosis and Health
            Action. A manual for Tropical and Rural
            Areas, 1979.

29.   Clifford, G.G.: Health and Diseases in Africa -
            the Community Approach proceedings of
            the 1970 East African Medical Research
            Council Scientific Conference, 1970.

30.   Gellhorn, A.: Health Needs of Society : A
            Challenge   for Medical Education.

31.   Hilleboe, H.E.: Approaches to National Health
            Planning. Public Health Papers W.H.O., 1972.

32.   International Conference on Primary Health Care.
            Primary Health Care - Kenya Experience.
            Alma-Ata, USSR, August, 1978.

33.   Willms, G.D. : Rural Health Development Project,
            the status quo of Community Based Health
            Care, Programmes in Kenya.
            A Report of a Study Review. October, 1980.

34.   World Health Forum - An International Journal
            of Health Development, 1981, Vol.2 No.2.

35.   Republic of Kenya : Development Plan, 1974 - 1978.

36.   Republic of Kenya : Development Plan, 1979 - 1982.

37.   Republic of Kenya : Development Plan, 1984 - 1988.

38.   Republic of Kenya : The Integrated Rural Health
            and Family Planning Project Report. M O H
            1983.

39.   Republic of Kenya : Health Strategy for Kenya.
            M O H , 1982.

APPENDIX (I)

1. Location ---

2. Sub-Location --

3. Respondent's Number --------------------------------------

4. Date --

5. Sex: Male --------------- Female ----------------

6. Age: ------ Under 19 ----- 20 - 29 ----- 30 - 39

    ---- 40 - 49 ---- 50 - 59 ----- 60+ ------------

7. Marital status: Married ------ Single -----------

    Divorced/separated ---------------------------------

8. Level of education:

    ------ None ------ Primary ------ Secondary------

    Higher ---

9. What is your religion:

    ----- Protestant ---- Catholic ----- Muslim------

    None --------- Other specify --------------------

10. Number of children:

    ------ None ----- 1 - 3 ----- 4 - 5 ----- 6 - 7

    ------ 8 - 10 ------- 11+ ----------------------

11. Is there any dependents -------- Yes ------- No
    If yes how many?

    ------- 1 ------ 2 ---------- 3 ------ 4 ----- 5

12. Occupation:

    ----- Farming -----Institutional employee ------

    Business ------ Other specify ----------------

13. If any in school, amount of fees paid annually

    (KShs.) ----less than 100 ---- 100-500 ---- 501-1000

    ------- 1001 - 2000 ---- 2001-300 ---- 3000+------

14. Approximately what is your household income per year (KShs.)

      -----less than 5000 ----- 5001 - 10,000 ----

      10,001 - 30,000 ---- 30,001 - 50,00 ---- 50,000+

15. Approximately how much do you spend on:

      Education ------   Food -----------

      Clothes -------   Transport ------ Health ----

      Other specify ---------------------------------

16. The structure of the dwelling unit:

      (a)   Roofing: Corrugated iron sheets --------

            Tiles ------- Thatch ---------------------

      (b)   Walls: Masonry ------- Wooden ------

            Earthen --------------------------------

17. Availability of water on the compound:

      ---- Private piped supply ----- piped community

      supply. ---- stream/river ------ Other specify

      ----

18. Do you have a latrine on the compound? ------ Yes

      No ----------

19. Do you have a bathroom? -----Yes ------ No

      If No where do you bathe?

      ----- in one of the rooms ----- outside at night

      ----- in the river ---- other specify -----------

20. Name three diseases which you consider most

      common in this area:

      -----------   --------------   ----------------

21. What medical care did you seek the last time
    you fell sick?

    Modern -------- Indigenous ---------- Shop medicine
    ------------- Self-made herbs ---------- None ------

22. Why did you use this type (give reasons)

    ----

23. When hospital care was used:

Type of Disease	Which hospital	In-patient	Out-patient	what paid	Opinion paid	Hosp. Attd.
1.						
2.						
3.						
4.						
5.						

24. When indegenous medical care was utilized:

Type of Disease	Method of treatment	What paid	By whom Herbalist	W. Doc.	Why
1.					
2.					
3.					
4.					
5.					

25. Who advised you on the care you should seek?

    ----

26. If you suffer again h what medical care would you seek?

    Why?--

27. Have you ever lost a member of your family in
    the last 5 years? -------- Yes --------- No.
    If yes, what was the illness? -------------------
    What medical care was sought? -------------------

28. Do you think this death could have been avoided?
    Yes ------------- No ---------------
    If yes, how ---------------------------------------
    If no, why --

29. What preventive measures have you taken in regard
    to thses diseases?

    ----

30. Which food do you give to children (5 years)
    ----

31. Apart from medical care in hospitals/clinics
    are you aware of other health care services?
    If yes, which ------------------------------------
    ----

32. Do you always consult the medical staff in cases
    of illness? --------------------------------------
    If yes, where ------------------------------------
    If no why --

33. Does any health worker visit you house?----------
    If yes, how frequent -----------------------------

34. Do you think he/she is of any help to your
    health care --------- Why? ----------------------
    ----

35. Which hospital do you prefer when:

   Children are sick --

   When you are sick --

   Why? --

36. What is the distance? --

37. Is it the nearest hospital/clinic? ---- Yes ---- No

38. If no why don't you use the nearest to your home

   ----

39. When did you visit this hospital (mention the one

   nearest) last? --

   Who was sick --

   What disease --

   What paid --

   Complaint --

40. What do you think of treatment in that hospital

   ----

41. Did you wait for long before getting treatment?

   ----

42. What changes do you propose for improvement in

   this hospital? --

APPENDIX II

FOR MEDICAL PERSONNEL

Sub-Location --

Location --

Respondent's position -------------------------------------

Name of Facility --

1. When did this hospital/clinic start -------------

2. Who funded the construction ---------------------

3. Who runs the facility? --------------------------

4. What is the number of medical staff and qualifications?

    ----

5. Which are the medical equipments in the facility?

    ----

6. On average what is the number of patients your
    attend? --

    ----

7. Which are the common diseases in the area? ------

    ----

8. Do you ever involve the community in the running
    of the facility?   Yes -------- No -----------

9. If yes how? ------------------------------------
    If no why? ------------------------------------

10. What are the major constraints experienced in
    providing thehealth to the people? ---------------

    ----

11. What do you propose for improvement? ------------

G L O S S A R Y

Crude Birth Rate

Number of live births per year per 1,000 population.

Crude Death Rate

Number of deaths per year per 1,000 population.

Rate of Natural Increase

Difference between crude birth and crude death rates; usually expressed as a percentage.

Rate of Population Growth

Rate of natural increase adjusted for (net) migration, expressed as a percentage of the total population in a given year.

Age Specific Fertility Rate

Number of live births per 1,000 women in a given age group in a given year. It is usually calculated for five-year age groups.

Total Fertility Rate

The average number of children that would be born to a woman if she were to live the end of her childbearing years and bear children according to a given set of age specific fertility rates. The Total Fertility Rate serves as an estimate of the average number of children per family.

Net Reproduction Rate	The number of daughters a woman would have under prevailing fertility and mortality patterns who would survive to the mean age of childbearing.
Infant Mortality Rate	Annual number of deaths of infants under one year per 1,000 live births during the same year.
Life Expectancy	Average number of years a child born in a given year can expect to live if mortality rates for each age/sex group remain the same.
Contraceptive Previlance Rate	The percentage of married women in the reproductive ages who are using a modern method of contraception at any given point in time.
Health Centre	A static rural health facility serving an average population of 50,000 - 70,000 providing curative outpatient services, MCH/FP, and inpatient services of 12 beds (6 maternity and 6 general beds).
Dispensary	the smallest peripheral static rural health facility serving a population of 8,000-16,000 (D II) 4,000-8,000 (D I) providing curative outpatient and MCH/FP services.
Service Delivery Point	a health facility providing MCH/FP services.