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REGIONAL PHYSICAL PLANNING IN KENYA A CASE STUDY

REGIONAL PHYSICAL PLANNING IN KENYA

A CASE STUDY^{1/}

Introduction

1. The Kenya Development Plan 1966-70 laid down directives for the establishment of a Regional Physical Planning section within the Town Planning Department of the Ministry of Lands and Settlement. Thus the Town Planning Department, now has the added responsibility of participating in the preparation of the integrated Socio-Economic - Physical Plans for Kenya. The next five year Development Plan 1968-73 is now in process of preparation.
2. Previously the traditional role of the Town Planning Department, had been mainly Urban Planning and, over time, to this had been added the physical planning aspects of Rural Settlement Schemes and Land Adjudication.
3. The Regional Section though in its infancy has to date published a Regional Planning study for the Central Province, and is now in process of preparing similar studies for all the other Provinces, so as to eventually prepare a National Physical Development Plan for Kenya.

Kenya

4. The country covers an area of 224,960 Sq. miles of which 5,172 Sq.miles are water. It is divided into seven Provinces for administrative purposes and has a total population of 9,643,000 (1966). The main population concentrations occur along the coastal belt, the Central Province area, the Nyanza and Western Provinces, and the middle belt of Rift Valley Province. These areas are also the more fertile areas of the country. The Northern and Southern Districts are sparsely populated with pastoral nomadic people and the land is almost semi-desert in nature.

Regional physical planning

5. The need to plan for physical or spatial development at a Regional scale is dictated by a number of problems facing Kenya today, of which the important ones are:

(a) The problem of urbanization

At present the population of the main urban centres of which there are only 23 with a population of 5,000 and over account for a very small percentage, 8.6 per cent of the total population. But the rate of growth of many of these centres is very

^{1/} Prepared by Mr. Mario E.F.C. Carvalho, Winnipeg.
The views expressed in the document are not necessarily those of the German Foundation or the secretariat of the Commission.

fast. One important town, Thika, for example is growing at the rate of 10 to 15 per cent per annum, which based on its present population of 25,000 could well grow to about 250,000 by the turn of this century. Other urban centres are growing at the rate of 6.4 per cent per annum and at this rate over 30 per cent of the total Kenya population will be living in the urban areas by the turn of this century. The population of Kenya as a whole is growing at a rate of 3.1 per cent per annum and if medical facilities keep improving, lowering the death rate, while no family planning is introduced to reduce the fertility rate, the projected population is expected to reach a high of 30,271,000 people by year 2,000 as compared with 9,643,000 at present. Nairobi Extra Provincial District's population alone, as forecasted in the population study by the City Authorities will grow from its present figure of 450,000 to 4,549,900 by the same year if the high growth rate of 7 per cent per annum is used.

(b) Inefficient infrastructural development

The existing infrastructural development does not contribute to the development as much as it could have done. Over the years, development has generally taken place in an ad hoc manner, resulting in an uneconomic, unrelated and haphazard pattern, with too many and often duplicating services in some areas, while other areas are left devoid of any services. Thus rendering a very unequitable service to the people and at the same time preventing any one centre from developing into a focus of activity, and becoming a growth centre.

At present there is an increasing awareness of the need for more and better schools and health facilities, rural industries, all weather roads and similar developmental stimuli, particularly in the rural areas where most of the population lives. Through "harambee" (self-help) efforts and increased governmental investment, the development of these areas is gathering momentum, but unfortunately the location of each item of investment has to be decided on an ad hoc basis, since there has not existed any overall or comprehensive analysis of the infrastructural requirements and Regional Plan.

(c) Uneconomic development of agricultural land

The present rural migration to urban areas is not always because there are enough jobs for these people in the towns, but because the rural areas at present are unable to absorb all the rural population growth, due to the insufficient area of cultivated land and its low productivity. With the present farm management and farming methods a minimum of 4 acres in high potential areas

is considered to be adequate just for the bare subsistence standard of living, (8 acres for subsistence plus £100 per annum). An additional reason for urban migration is of course the lure of seemingly easy and prosperous life in the towns.

6. Although every endeavour must be made to hold back the rural exodus, it is evident from the world trends that urbanization will continue and can, at best, be slowed and directed. It must be borne in mind that the phenomenon of urbanization is also potentially beneficial as it enables the citizens to participate more actively in the overall development of the country.

7. What is needed therefore is to create new nodes of activity complementary to the urban areas, both in sociological and economic aspects, and based on a planned spatial distribution in such a way as to ensure a balanced relationship between the urban and rural sectors of the country.

8. As planners we can only base our study on past trends and present development. The plan therefore needs to be reviewed at set intervals to accommodate new changes brought about by technological advancements and other unforeseen circumstances.

Objectives

9. The main objectives of the Regional Studies are therefore as follows:

- (a) To provide a framework within which physical development necessary for both internal and external economic growth can be encouraged;
- (b) To create key centres that have the necessary potential for development, based on a hierarchical pattern and spatial distribution of growth centres;
- (c) To develop a comprehensive capital works programme by indicating areas and types of services that should get priority in the allocation of funds.

Methodology

10. The methodology adopted for this study to determine the size, spacing and the functional structure of the service centres and their respective service areas has been based to an extent on the Central Place theory which is familiar to planners. A salient point of this theory is that a hierarchy of central places with individual hexagonal service areas forms an hexagonal lattice over the land.

11. At its simplest it is concerned in arranging towns of different levels of economic activity and infrastructural development in a hierarchical pattern of spatial distribution based on a given ratio. This theory of Christaller and Loesch was based on very restrictive assumptions pertaining in particular to the topography and population density, which seldom exists in fact. We have therefore adapted this theory to suit the local conditions in Kenya. As you can see in the map, Christaller's "ideal" hexagonal distribution pattern of service centres and their spheres of influence have been strongly modified in Central Province by topographical factors and variations in the population density.

12. This methodology was used as a basis for the study in order to determine the size, spacing and the functional structure of the service centres. It seeks to ascertain the most efficient spatial and hierarchical distribution given an array of functions, and therefore was very appropriate for our study. The methodology in detail is given at the end of this paper as an Appendix.

13. Every endeavour was made to base the work on sound statistics but these were not always available and an immense amount of actual site survey work was carried out. Periodic review of this type of study together with keeping up-to-date records of new development will no doubt be necessary.

Central province

14. Central Province is approximately 100 miles in length by 80 miles in width covering an area of 5,092 square miles, of which 1,336 square miles is made up of mountains, forests and national parks and 1 square mile of water.

15. The topographical features of Central Province are deep valleys and ridges which have greatly influenced the development of the Province and have greatly determined the agricultural zones and transportation network.

Population

16. It is divided into four Districts for administrative purposes. The total population is 1,334,900 as of 1962 and has an average density of 262 persons/sq. mile. If we exclude the Aberdares and Mount Kenya the two large uninhabitable areas of land, the Provincial mean average density in the main areas is 614 persons/sq. mile with densities varying from 250 to 1,000 persons/sq. mile in the Districts nearest to Nairobi. This rural population density in some parts of the Central Province is among one of the highest in the world, and the Province is unable to absorb any more, for in the main area 82 per cent of the population lives on 35 per cent of the total area of the Province.

17. By year 2,000, Central Province could well have a high population of 3,388,865 and from our estimate on the present migratory pattern of the population we found that out of every 100 persons that outmigrated from the densely populated areas prior to 1962, 60 persons were absorbed in the other farming areas, 32 moved to Nairobi in search of urban employment and 8 were absorbed in the smaller urban areas. At this rate the four urban centres 1/ in the Province will have to accommodate about 2 million people by year 2,000.

Agriculture

18. The main source of income for the people of the Province is agriculture and this will be the case for many more years. The total agricultural land area is 2,358,000 acres or 72.3 per cent of the total land area of the Province. This means about $2\frac{1}{2}$ to $3\frac{1}{2}$ acres per family, but with the anticipated increase in population, many of the small holding farms will be inadequate to provide for even the minimum living standards and by year 2,000 there will be less than an acre per family in several locations of the Province.

19. The increase in population will therefore have to be accommodated elsewhere. The main cash crops grown in the Province are Coffee, Tea, Sisal, Pineapple, and Wattle, with Coffee occupying the largest acreage of the agricultural land use, about 117,000 acres: of the total agricultural land area in the Province, 1,114,900 acres are of small holdings, and 481,100 acres are large farms.

Land uses

20. The other land uses in the Province, Game and National Parks, cover an area of 175,000 acres, and 697,000 acres of Forests. The total urban and railway land uses occupy less than 1 per cent or 29,000 acres of the total land area of the Province, which means considerable urbanization can still take place without materially affecting agricultural production, provided of course urban growth is controlled and concentrated. (It is estimated that an over-spill of 1 million people into Central Province would occupy only 1.5 per cent of the Province's land area at a density of 20 persons per acre).

Settlement pattern

21. In order to study the existing structure of service centres it was necessary to know the factors that influenced their pattern and distribution.

22. In Central Province the settlement pattern has evolved over time from an original homestead (Mucii). These homesteads were grouped in small clusters to form villages (Matuura) and these were usually located on the side of a hill or near some wooded areas and generally comprised of joint families of up to two or three generations all living in a single village. These formed the residential villages.

1/ Nyeri, Thika, Fort Hall and Thomson's Falls.

23. Concomitant to this development grew the Kikuyu markets (Kinganga) which were conveniently located so as to serve a group of villages and generally spaced 10 to 12 miles apart, but in the more densely populated areas they can be found as near as 5 to 7 miles distance.

24. The market is held in open spaces and was originally purely barter in character and concerned mainly with agricultural products. Anything from 200 to over 2,000 people came to these markets on a market day which are held in a grassed enclosure two or three times a week and some larger ones are held daily. The size of the market depended on the population it served as well as on the internal road system which gave access to other neighbouring villages, but in general they measured about 150 x 450 feet, rectangular in shape, and served an elongated hexagonal area of about 60 to 70 square miles.

25. Over time, however, these markets developed very intensive and organized trade where more and more traders congregated to sell their ware and with the introduction of cash economy more traders catering for more needs established themselves in permanent retail shops built around these markets creating small shopping centres. The larger markets grew into larger shopping centres serving larger areas and catering for more than day-to-day needs.

26. A lot of this pattern has changed due to Land Consolidation and villagisation which was carried out in Central Province. This created very low level service centres which were not accounted in the study, as they did not determine any centrality.

27. The larger towns or urban centres are outcome of different circumstances. There were no towns prior to the European administration, except on the Coast. The present towns were initially developed as administrative and commercial centres by the former colonial government and these have since grown greatly into the present larger urban and rural centres. The central parts of these towns are generally well laid out with wide roads and open spaces with standard of buildings and services equal to similar towns in western countries.

28. These various combinations have given rise to the present spatial and hierarchical distribution of the Service Centres, which were graded in the descending order of importance as Urban Centres, Rural, Market and Local Centres. (Refer to Methodology). These names were adopted in order to classify centres more adequately in terms of their function and infrastructural development. It was found that the commonly used names such as Townships, Trading Centres, Market Centres, etc., did not express accurately their differences and were not based on any set standards of development and as such were not comparable.

Service centres

29. In the whole Province 250 places were identified as having some infra-structural development nucleated in a centre to qualify as service centres.

(a) Urban Centres: The Province has 4 urban centres plus 5 in the periphery and they are typically administrative headquarters and main commercial centres for the whole District. They all have a population of 5,000 or more with some like Thika having about 25,000 people. They usually have a complete range of infrastructural development performing the highest level functions, including public water supply, sewer and electricity, and are always the focus of the regional transportation pattern.

(b) Rural Centres are mainly Divisional Headquarters, having administrative function of the level of District Officer, District Court, Police Post; social functions of the level of a Health Centre, Secondary School, Community Hall, Postal Service and well developed retail shopping facilities and a Grade I or II Barter Market.

They are usually situated at nodal points of local transportation network at a distance of about 10 to 15 miles, serving an area of 30 to 35 square miles with a population of 35 to 40,000. The centre itself does not have much of residential population. The Province has 21 Rural Centres plus 1 in the periphery.

(c) Market Centres were found to have no administrative function, but usually have reasonably well developed retail and barter market facilities. They generally have a Dispensary (sometimes a Health Centre), a Secondary School and in few cases a Community Hall and a Postal Agency service. They likewise do not have much residential population, but serve an area of about a third of the Rural Centre and do not conform to any set pattern of location. There are 27 Market Centres in the Province.

(d) Local Centres serve strictly a local area of not more than 3 miles radius. They rank as the lowest grade centre in the hierarchy of service centres. The Province has 78 Local Centres and they usually have a few shops, a Grade III Barter Market, a Primary School and sometimes a Dispensary. These centres serve day-to-day needs of a population that lives within walking distance and as such are not located at nodes of the road pattern.

30. As an overall distribution the Province has:

- 1 Urban Centre for 165,000 population;
- 1 Rural Centre for 40,000 population;
- 1 Market Centre for 24,000 population;
- 1 Local Centre for 10,000 population.

Infrastructure

31. The study indicated that a considerable number of social services and other infrastructural developments are located outside the service centres with no relation to an overall spatial pattern, for example, 35 per cent of the Dispensaries and 40 per cent of the secondary schools are located at random in rural areas, creating a tremendous scatteration of services.

32. Great disparity was evident in the level of services provided to the people between the various Districts. In hospital beds for example, the number of persons per hospital bed ranged from 530 to 2,500, between Districts.

33. Educational facilities were found to be more widely distributed than any other service. Primary Schools are almost universally provided in all the service centres or within their easy access. Secondary Schools are also found in over half of the service centres studied and on an average a Secondary School is available to the people within a distance of 5 miles. The problem however is that, over 45 per cent of the schools had only three forms or less and a great percentage of these have only one form. This type of uneconomic and inconvenient dispersal was evident also in the other services which as you know does not in any way contribute to an ordered pattern of development.

34. It was calculated that the existing infrastructure will need to be almost doubled by 1980 to even maintain the present standard of public services, and by year 2000 there will be need for fourteen new infrastructural units for every four today, and this as I said is only to maintain the present standards.

Future growth pattern

35. As an end result of the study, an attempt was made to draw a long range development plan showing a proposed growth pattern and nodes of future urban development. It can be seen that emphasis has been placed in developing the rural sector of the Province, by providing a higher level of service centres and concentrating development in certain desirable areas.

36. Nairobi itself which exerts a great influence on the Province will grow into a crescent form to join in with Thika on the East and Limuru on the West creating a large metropolitan complex - tied in with a rapid transit system and a multi-lane limited access highway. The complex is conceived as a linear city interspersed with neighbourhood centres or residential cells and open spaces for aesthetic and recreational purposes.

37. The Rural Centres are proposed as suitable sites for the establishment of rural industries and to encourage such development it is proposed that governmental investment in infrastructural improvements such as all weather roads, communication service and agricultural co-operatives should be focused on them. They may well develop as minor centres of urban population within the rural areas to counteract the pull exerted by such large towns as Nairobi and Thika.

38. To achieve this end ad hoc development must be curtailed and directed towards the new growth centres so as to create nodes of urbanization within the rural areas as a positive step to the development of those areas.

39. The problems revealed are of course not unique of Kenya, they are problems that inevitably arise in a rapidly growing agricultural society, where per capita income is low, where land resources are limited and social services are still inadequate and few.

40. The study delineates a physical development plan and other infrastructural needs for the Province as a framework within which all development agencies, government and others, may carry out their policies for development in a manner which will produce a co-ordinated logical development pattern throughout the Province.

41. Its main contents may be summarized as:

- (1) A study and analysis of population growth, distribution, density and movement related to agricultural and urban pattern and distribution;
- (2) Evidence of an uneconomic, socially inappropriate and random distribution of existing social services;
- (3) A new and a more rational distribution of towns of different sizes, functions and level of importance so as to create a more balanced Rural/Urban relationship;
- (4) Proposals for preventing both the over scattering and over concentration of social and economic development and to facilitate the creation of nodes of economic activity;
- (5) The principles of a long term growth pattern of towns and a primary road network which is effective and economic.

42. The next major step is of course the implementation of the proposals set out in the study. The situation in which sometimes very excellent and practical studies remain as mere paper work is all too familiar to the planners. Considerable progress in setting up the machinery for implementing physical plans has been made in Kenya. The necessity for close integration of economic and physical planning and the co-ordination of planning and development of the operating Ministries is accepted; the machinery is being devised, and indeed in many respects it is beginning to operate, to bring this about from Local level through Districts and Provinces to the National level.

43. Because of the widely diverging circumstances facing different countries it is not possible to lay down a blue print for these processes and the necessary machinery, but the main principles may be summarized as follows:

- (a) Participation by the people at Local level;
- (b) Translation of needs of the people into proposals at District levels;
- (c) Co-ordination of District proposals into final Provincial Development proposals;
- (d) Analysis and Synthesis at Ministerial and National level;
- (e) Formulation of the Comprehensive Development Plan - Capital Improvements Programme;
- (f) Approval of the Development Plan by the Cabinet;
- (g) Implementation of Development Plans by the individual operating Ministries directly or through Provincial/District Development Committees.

44. The role of the Town Planning Department in this process has already been elucidated in this paper and may be summarized as follows:

- (a) Preparation of Regional Physical Planning Studies for all the Provinces;
- (b) Providing the physical planning services to Provincial and District Planning Teams;
- (c) Providing the physical planning services to all the operating Ministries;
- (d) Preparation of additional detailed physical planning studies within the framework of the National Development Plan.

45. I would like to conclude on a legitimate note of optimism. Problems may be many but solutions are at hand and there is a tremendous enthusiasm both on the part of the Government and the public for planning and improvement, and the Government is fully committed to raising the standard of living of the people by a concerted and planned effort on the part of all concerned with planning.

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APPENDIX

METHODOLOGY

1. The Regional Planning Studies in Kenya are based to a great extent on the Central Place theory, but very much adapted to the local conditions here in Kenya. Certain definitions and assumptions relating to the study therefore have to be made.
2. Identification of the Region - The region is taken with its present Provincial boundaries for ease of data collection and for administrative purposes, but for all the other purposes the boundaries remained flexible to accommodate all that area encompassed by the Service Areas of the Service Centres lying on the periphery of the Province.
3. Definitions:
 - (a) A region is defined as a self contained entity delineated by a Service Centre and its area of influence.
 - (b) A Service Centre (Central Place) is defined as an agglomeration of a certain number of central place functions located at a centre or within its three mile radius.
 - (c) Central Place Functions are those functions performed by a service centre for their own consuming population as well as for their immediate hinterland.
 - (d) A Service Area is an area served by a Service Centre.
4. An inventory of all the services that have a Central Place function in Central Province was first prepared. Data was collected for five categories of Central Place functions namely, (1) Administration and Protection; (2) Social Services; (3) Communication and Transportation; (4) Commerce and (5) Industry and Power; and each category was subdivided to give 21 specific sub-services. Each of the sub-services were assigned points depending on their degree of centrality or the quality and variety of service they rendered (quantity was not accounted). Three points were allotted for a high level service, e.g. Hospital; two points for a medium level service, e.g. Health Centre; and one point for a low level service, e.g. Dispensary.
5. Assumptions:
 - (a) All the higher level Central Place Functions perform the services of the lower level functions within one sub-service category.
 - (b) No pre-assumption is made relegating any service centre to any definite grade prior to actual identification and study of all the centres.

- (c) The higher the order of central function the greater is its centrality and the wider its sphere of influence.
- (d) Just because a particular level of service in one category has the same number of points as a certain level in another category the two are not commensurate and cannot therefore be equated.
- (e) The points system is only used to distinguish the level of the various sub-services within a service category e.g. Provincial Commissioner related to District Commissioner and in turn to District Officer, depending on their respective functions within the Administrative Service category.

6. The number of points accumulated 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. (Although data was collected for Industry and Power, these points were not counted in determining the level of a centre, as such development does not necessarily contribute towards the centrality of a centre nor towards the service it provides to its hinterland. Also, where a category of service was duplicated in a centre, only one set of points was allotted representing the highest level of any single facility in that category.

7. The maximum number of points a centre could obtain was 51 points, and 8 points in a combination of at least four varieties of services was taken as the minimum necessary for a group of services to qualify as a centre since any smaller concentration would not create a significant centre of gravity within the surrounding area. Thus a place with dispensary (1 point), a primary school (2 points), one bus per day (1 point), a small shopping centre (2 points) and a barter market (2 points) would just qualify as a service centre.

8. More than 250 concentrations of service were studied, of which 134 qualified as service centres by the above method. Those qualifying were then ranked according to their total accumulated points and plotted on a graph (see Graph) to show the number of service centres at each level and to determine their hierarchical grouping.

9. Four groupings of centres each corresponding with a different level of infrastructural development and service function were distinguishable in the Graph. These groupings were however slightly modified in the final grading of the centres since it was found on inspection that their functional grouping did not correspond exactly with the grouping by level of service as determined from the Graph.

10. These four functional levels of service centres were classified in descending order of hierarchical importance - URBAN CENTRES, RURAL CENTRES, and LOCAL CENTRES. Those centres that accumulated 38 - 51 points were graded as Urban Centres; those with 20 - 37 points as Rural Centres; with 13 - 19 points as Market Centres; and with 8 - 12 points as Local Centres. Of the 134 centres qualifying, 7 ranked as Urban Centres, 22 as Rural Centres, 27 as Market Centres and 78 as Local Centres. Nyeri accumulated the highest number of points; 46 out of a maximum of 51 points.

11. All the qualifying centres were plotted on a map (see map) to show their location and spatial distribution. Several preliminary maps were then drawn showing the service areas of each centre on the basis of topography, road pattern, the postal box location of primary schools and, in a few cases, local survey. The service areas of Rural Centres (shown on Map) are a composite of those obtained using these various factors.

12. Maps were also drawn showing the location of all the health services (Hospitals, Health Centres, Dispensaries). This map was superimposed on the population distribution map to reveal those populated areas lacking health facilities. A detailed study was carried out of Hospital services to relate the number of beds in each hospital to the number of persons living within accessible distance, taking into consideration the topography of the area, the bus service and road pattern. Areas that were deficient or under-served compared with the Provincial Average of 1 bed per 735 persons were demarcated.

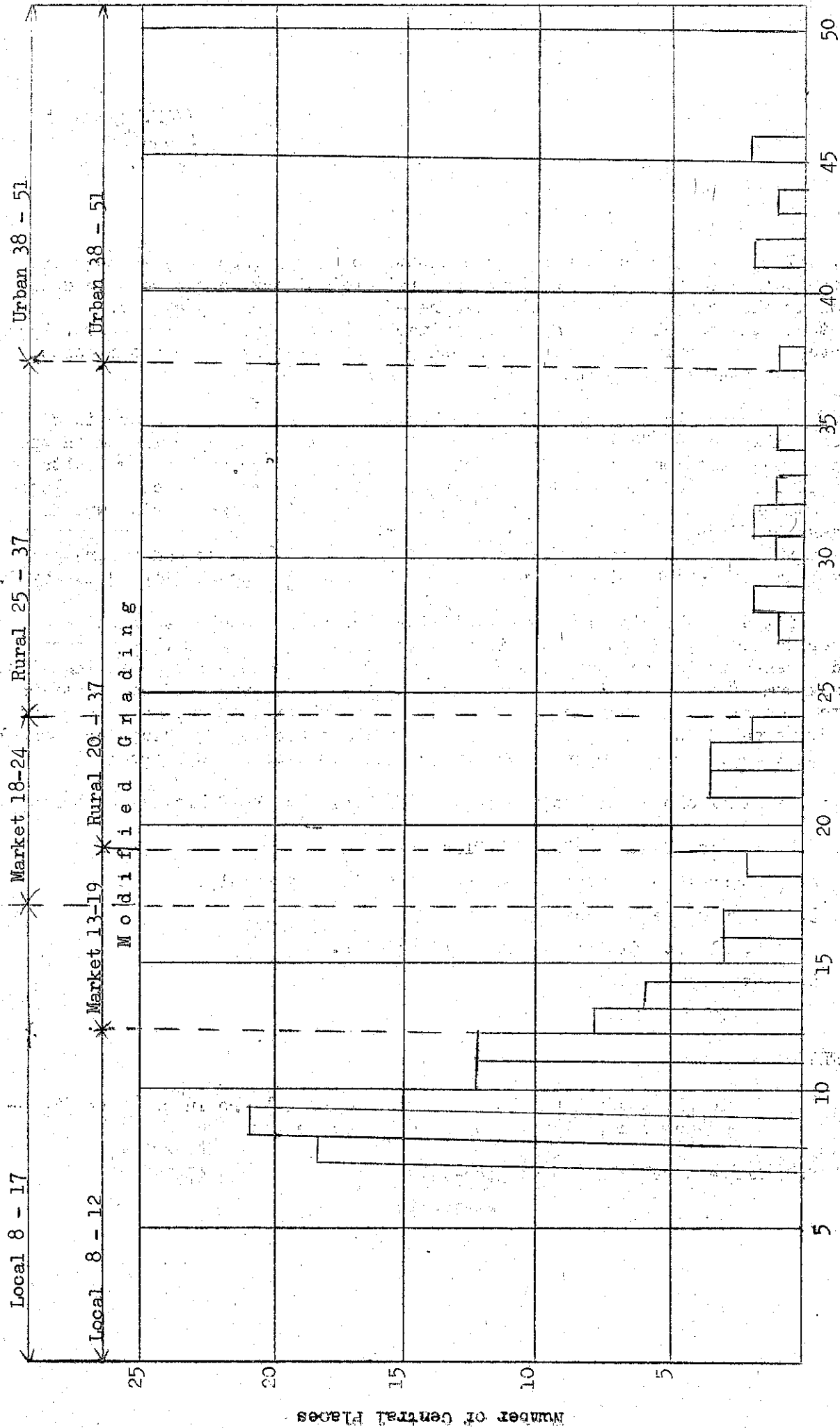
13. Similarly the distribution of all the Secondary Schools was plotted and superimposed on the population distribution map. The total number of forms and classrooms in each school were then related to the population living within a maximum radius of 8 miles, taking topography, bus service and road pattern into account. Deficient areas were however not plotted on the map since the study revealed that the problem is not that there are too few secondary schools but that there are too many secondary schools with too few classrooms.

14. The final choice of growth centres was based on the following criteria:

1. Service Centres (Central Places).
2. Economic potential of the area (farming potential).
3. Transportation accessibility.
4. Population distributions and densities.
5. Topography.
6. Water Potential.

REFERENCES:

1. Regional Physical Development Study -- Central Province. Town Planning Department, Ministry of Lands & Settlement.
2. Kenya Development Plan 1966-70.



GRAPH SHOWING GROUPINGS BY LEVELS OF SERVICE CENTRES.

CENTRAL PROVINCE - KENYA

BASIC INFORMATION QUESTIONNAIRE

TOWNSHIP	SHOPPING CENTRE	BARTER MARKET
PROVINCE	DISTRICT	LOCATION

NOTES : Column 1 - Points allotted to each service depending on its centrality.

Column 2 - The maximum level of services present within each sub-service category.

GRADING : URBAN - 38 - 51
RURAL - 20 - 37
MARKET - 13 - 19
LOCAL - 8 - 12

VARIETY OF SERVICES

1. ADMINISTRATION AND PROTECTION

1. ADMINISTRATION

Provincial Commissioner
District Commissioner - County Council
District Officer

2. JUDICIAL

High Court
Resident Magistrate Court
District Courts

3. POLICE

Provincial Headquarters
Divisional Headquarters
Police Station - Police Post

4. FIRE PROTECTION & AMBULANCE SERVICE

Fire Station
Ambulance Service

II. SOCIAL SERVICES

5. HEALTH

Hospital
Health Centre
Sub-Centre Dispensary

6. EDUCATION

Secondary School - Technical College,
Teachers' College
Primary School

Points
(1)

Level
(2)

3

2

1

3

2

1

3

2

1

3

1

3

2

1

3

2

1

3

2

II. SOCIAL SERVICES (cont.)		Points (1)	Level (2)
7. LIBRARY			
Public Library		3	
Visiting Library		1	
8. SOCIAL CENTRES			
Community Hall - Social Hall		3	
III. COMMUNICATIONS AND TRANSPORTATION			
9. POST AND TELECOMMUNICATION			
Day and Night Telephone Exchange		3	
Post Office (Departmental)		2	
Sub-Post Office		1	
10. PETROL STATION			
Petrol Service Station Outlet		3	
Duka Petrol Outlet		1	
11. BUS SERVICE			
100 + Bus Trips		3	
10 - 99 " "		2	
1 - 9 " "		1	
12. RAILWAYS			
Railway Station		3	
13. AIR TRANSPORT			
International Airport		3	
Airport		2	
Airstrip		1	
IV. COMMERCE			
14. SHOPS			
Wholesale and Retail Stores		3	
Groceries and General Shops - Dukas (more than 5)		2	

IV. COMMERCE (cont.)	Points (1)	Level (2)
15. BARTER MARKETS		
Grade A market	3	
Grade B market	2	
Grade C market	1	
16. BANKS		
Full time	3	
Part time	1	
17. CATERING SERVICES		
Residential Hotel	3	
Safari Lodges	1	

V. INDUSTRY AND POWER

18. MANUFACTURING, EXTRACTIVE OR AGRICULTURAL

More than 500 employees	3
100 - 500 employees	2
10 - 100 employees	1

19. ELECTRICITY

3

20. MAIN WATER SUPPLY

3

21. SANITATION

Sewage Disposal Works	3
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Total Variety (1 - 21)

Total Level (1 - 17)

Service Centre Status

Approximate Population

KEYWORDS

