

AN APPRAISAL OF RESOURCE AND LAND USE MAXIMIZATION
FOR INTEGRATED REGIONAL DEVELOPMENT IN THE
WESTERN RIFT VALLEY OF UGANDA: A CASE STUDY OF
BUSONGORA COUNTY. / 1

by

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

Signature of Author

**This thesis has been submitted for examination
with my approval as University Supervisor.**

Signature of Supervisor

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However, the ideas expressed in this thesis remain the personal responsibility of the author.

I N T R O D U C T I O N

Development to rural areas in Uganda has hitherto, and will continue to take place largely through the exploitation of local natural resources. The investment for the exploitation of the resources is both public and private. However, the prime concern for the exploitation of the resources has been largely Economic Development, that is growth and change. The government has been a kind of a monopolistic agent guiding most of the economic development. All in all, the economic development of the rural areas does not occur as a kind of a self-directed movement initiated by the local population but through an increasing degree of governmental intervention.

First, the attainment of increased economic development as a goal solely operates on the objective of Economic Efficiency, that is the desire to maximize profits and benefits. Therefore, either through direct involvement by the government in the exploitation of the resources or through taxation of the private developers, the general public at large is expected to benefit from the government's economic development practices. In this capacity of the prime mover of economic development, the government realizes that the effective implementation of its economic goals, economic development must be planned. Hence, since independence, national economic development and national economic planning have been essential concerns for the government of Uganda.

Hitherto, national economic planning has concerned itself with nothing more than sectoral developments in rural areas (Infra and Supra-structures have been organized just as an accompaniment to the

primary exploitation of the rural resources). Projects are installed in rural areas for the exploitation of the natural resources and are geared to maximizing benefits to the government, the public at large, though in some cases without much regard for the local villagers in the propinginty.

It is the contention of this study that there are certain areas in Uganda where the concentration of the resource exploitation projects for economic purposes have generated 'enough' physical problems in the functional zone and the escalation of such problems warrants a necessity for comprehensive integrated development planning. It is on that understanding that a study of the exploitation of various resources in Busongora County and the physical problems generated by the particular projects has been undertaken. Busongora County is part of the Rift Valley resource region. Economic planning, however, is done according to the administrative Units of the area - Western Province and the various districts of the province. On that basis the rift valley is here identified as a Super-imposed region.

At this stage the specific format of the survey can be outlined:-

- (i) PROBLEM: In the proceeding chapters the study will concern itself with how the following question can be tackled:

"When a certain resourcefully endowed area has been subjected to a continued period of sectoral developments and such activities result into particularistic physical or spatial problems, how can the functional performance of such an area be maintained and enhanced?"

(ii) ASSUMPTIONS: The study assumes that the following conditions shall prevail:-

1. The present exploitation of resources in the Rift Valley and Lence Busongora County by both the government sectors and private organizations and individuals shall continue undrastically disturbed.
2. The maximization of economic benefits shall continue to be the prime motive of each enterprise involved in the exploitation of the resources.
3. That the government shall continue to be the chief hauler of economic development in rural areas.
4. That soon regional planning shall be the third major developmental dimension to national economic planning and national economic development.
5. That regional planners and economic planners shall cooperate to develop comprehensive integrated programmes of action.
6. That a clear legal physical planning framework shall be adhered to for effective regional planning.
7. That the degree of adherence to the planning idea by the planning boards and councils shall be uniform.
8. That the conservation policy for wildlife and hence the management of Park environment shall be adhered to.

9. That environmental quality shall be qualified and defined properly as part of regional planning procedure.
10. That the government shall have enough finance to support regional planning programmes.
11. That any regional planning efforts in the Western Province cannot afford to overlook the influence of the Rift Valley as a single resource zone.
12. That there shall be concerted efforts by concerned Sectors to improve other social hindrances like illiteracy, diseases, population pressure and provide necessary social amenities for the development of the population.

(iii) LIMITATIONS: The attempts of the study and the implementation of the findings and recommendations is limited by the following factors:-

1. Limited involvement of the regional planning Programme.
2. Under-estimation of the magnitude of the physical problems.
3. Research - (i) Limited research work by other disciplines.
(ii) Too much involvement into "Pure" research.
(iii) Limited cooperation or clear line of action between those involved in research and those involved in the application of the findings.
(iv) The ability of the concerned field officers to apply the findings of the research workers.

4. Adverse attitudes of the various developers in the area.
5. Limited financial resources.
6. Limited vital data at county level.
7. Inability of the local residents to understand or appreciate planning efforts and intentions.
8. The ability of local planning Programme in accordance with the legal framework.
9. Inability to prove temporary when physical planning action is necessary.

(iv) HYPOTHESIS: From the above problem a hypothesis has been derived around which the study shall try to revolve: -

"The exploitation of local natural resources for the maximization of Profits and benefits has been taken as a desired end that will continue to operate in Busongora and the Western Rift Valley of Uganda. The full maximization of the benefits is today complicated and retarded by problems whose dimensions reach farther than the span of a single resource exploiting enterprise. This problem shall be solved when all the resource exploitation activities in the area will be made to operate within the confines of an integrated development Programme.

Right now a Regional Planning Programme is under formulation in the Department of Town and Country Planning of the Ministry of

Provincial Administrations in Uganda. It is hoped that this study will go a long way to help in the formulation of the Development Plan for Ruwenzori District in particular and the Western Province at large. In addition there are a number of other areas over the country where the study can give an insight into the prevailing physical problems.

(v) METHODOLOGY: At the regional level planning is concerned with:-

- (i) Assessment of resources for optimum utilization.
- (ii) Transport and communication network that is necessary to move people, goods and services intra-regionally and inter-regionally.
- (iii) Urban development and rural settlements in terms of regional population distribution pattern.
- (iv) Infrastructure development.

This study is basically concerned with the first analysis - that of assessment of resources for optimum utilization. The overriding objective is to assess the potential resources of the Rift Valley and Busongora County as a case study, show the extent of their development and utilization and demonstrate how a comprehensive integrated planning programme can help to secure the Maximum Practical degree of the economy. Busongora County has been used as a manageable small administrative unit for the study. This is in line with national economic planning which bases its planning on administrative areas. The major regional planning unit is the

Western Province. It has been assumed that a Regional Development Plan for the Province shall be made in the near future. However, an understanding of resource occurrence and development cannot be complete without understanding of the Rift Valley resource region context to which the county forms part.

An assessment of resources alone cannot form a development plan for any area. Hence the study should not be construed as a development plan but as a partial fulfilment towards a development plan for Ruwenzori District and the Western Province. The assessment of other factors can be added to it to form a complete whole that is necessary for a development plan. Hence the assessment of other infra and supra development in the area of study has only been dealt with generally for just to improve the understanding of the text.

Landuse has been added to the resource assessment not as a major component of the study but because it is a vital language through which physical planning expresses itself.

The First Chapter is a background study which attempts to demonstrate that comprehensive integrated development planning based on various sectoral developments which are scattered in the rural areas of Uganda as local natural resources exploiting activities for optimization of economic gains is possible. A number of sectoral developments but not all have been sighted as examples.

The second chapter argues the case of Busongora county in the regional context of the Rift Valley resource region and the Western Province administrative and economic planning region. The

Rift Valley is a super-imposed region on the western side of the Western Province of Uganda. In this chapter the physical conditions of the Rift Valley are presented and the various natural resources. It is an analysis of the Rift Valley environment.

The third chapter turns to Busongora country as a case study. First the potential resources are analysed to present the resource base of the county. Five resources are dealt with - wildlife, minerals, Fisheries, Agriculture and forestry and the human population. Secondly the extent of the development of the resources and their utilization in the county and national context is analysed.

The third section looks at the quantum of problems generated by the enterprises which exploit these resources according to the areas where they are based. The areas are delimited as resource exploitation bases and form a resource exploitation activity pattern.

The fourth chapter concerns itself with findings in the first instance then goals and objectives to achieve them and a strategy for implementation. The last section is a general conclusion to the work done.

The material for this study was called by both field work and a library study. The time and financial resources were not adequate for an extensive field work survey. A questionnaire interview was conducted in the settlements within the national park. The total population of the settlements in the national Park was 7853 by

1969 Population Census. The total that was interviewed was 200 people. This makes a sample percentage of 2.5%. The results of the survey are contained in the last section of Chapter III. Other field work in form of verbal interviews and visits to sites for first hand assessment of present conditions.

- (vi) DEFINITIONS: For the sake of clear understanding, a few definitions should be made at the outset. This is a definition of terms which appear in the working of the topic for the study.
- (a) Resource Appraisal: to appraise a resource is to determine and evaluate its usefulness to a community that utilize it or is intended to utilize it at a given material time.
- (b) Maximization: Maximization in this case is in terms of utilization. To talk of maximization is to talk of a trend upwards towards the most desired conditions. In this case maximization is understood as an inherent desire of the economic exploitation of resources for economic efficiency.
- (c) A region: a region is an area of land or a zone possessing characteristics which make it a readily identifiable entity. In East Africa by virtue of more size areas have been adopted as suitable units for some particular purpose of business and administration. It is also an area which is homogeneous in respect of some particular set of associated conditions whether of the land or the people. A region could be natural or artificial.

- (d) Development: a process whereby a series of shared expectations in a society institutes a move to achieve the expectations and extend them to the members of the society.
- (e) Integrated regional development: concerns itself with relationships of the spectrum of related communities on a regional basis. From the villages to the towns in a region there is a relationship which needs a plan. The plan, therefore, is concerned with coordinating the growth of various areas to form an integral part of a balanced region.
- (vii) RELATED RESEARCHES: In Uganda, the Third Five Year Development Plan Sub-Committee on Regional Planning and Analysis in its study, of "Assessment of Regional Aspects of Planned Development", did extensive study of resources of Uganda. Its findings and recommendations are contained in various reports in the Ministry of Planning and Economic Development, Entebbe. Though these studies widely deal with the resources of the country, they lack the physical content.
- Research on the agriculture practiced on Rwenzori Mountains was carried out by J.D. Parsons and is contained in the Memoirs of the Research Division of the Ministry of Agriculture, Series 3 - The Systems of Agriculture Practical in Uganda; Number 4 - Montane

Systems - 1960. There is not much planning information in it and the research is now old. Parsons wrote another article, "Agricultural Systems" in J.D. Jameson Agriculture in Uganda London, Oxford University Press, 1970 pp. 127 - 138.

D.N. Zala did A Study of Bukangama Copper Ore bodies, Kilembe Mine, Uganda for his M.Sc. Thesis for submission to the University of Nairobi (1972 July). The study is too scientific for planning purposes. Aspects of historical mining in the country can be obtained from, A.L. Job, "Mining in Uganda" Uganda Journal Vol. 31 No. 1 1967.

J. M. Boyd has comments on Management and Research in the National Parks of Uganda in his book: "Travels in the Middle East and East Africa": Enquiries into (1) The Establishment of National Parks in the Heshemite Kingdom of Jordan (2) Management and Research in the National Parks, Game Reserves and Cattle Ranches in Uganda, Kenya and Tanzania". Edinburgh: Nature Conservancy 1965. Nuffield Travelling Fellowship.

P.B.M. Ouma did a research on "The Evolution of the Tourist Trade in East Africa". East African Literature Bureau Nairobi, 1970.

E.L. Edroma, Chief Research Officer of the Uganda Institute of Ecology at Mweya has done extensive research on Ecological Problems in Ruwenzori National Park. His work on Copper Pollution in Ruwenzori National Park is contained in the "Journal of Applied Ecology", Volume II, 1974. Another Paper appears in the Proceedings

of the Workshop organized by the United Nations African Institute for Economic Development and Planning on "Environment and Rural Development in East Africa", at Nairobi during 14th to 30th November.

A Landuse Study for all counties of Uganda has been carried out by B. W. Langlands and appears in "A Preliminary Review of Landuse in Uganda" Occasional Paper No. 43, Department of Geography, Makerere University, 1971. Professor Langlands in his Bibliography notes for his forthcoming book, "Uganda in Maps", has an extensive coverage of Literature on Geographical aspects of Uganda.

In Kenya, "Development of Lamu", a progress report of the Working Party, Ministry of Finance and Planning is very much related on conservation aspects. The "Rift Valley Province Development Plan." Department of Physical Planning of Ministry of Lands and Settlement, Nairobi, is also of some relevance.

In Tanzania, the "Lindi Region Integrated Development Plan", for the Year 1975/76 to 1979/80 is of some relevance.

C H A P T E R I

BACKGROUND STUDY:

1 National Economic Planning and the Development of Natural Resources:

The origin of all wealth in a country is ultimately its resources. And Planning the evaluation of resources is a pre-condition for development planning. Before the development intent of any given area can be worked out into a plan, the pre-requisital must is to assess the potential natural resources. Consequently, the capital inputs as the generators of the anticipated development can be appraised.

The role to formulate development plans or policies in Uganda falls under the shoulders of the District Planning Committees. The District Planning Committees originated from the colonial era District Teams which were established in every district of Uganda. The colonial era District Teams were not very much concerned with projected planned schemes for the development of the districts. Their main concern was with maintenance and care to preserve the interest of the colonial government in the whole country. The District Teams were the custodians of the development that took place in the districts as the incidental outcome of the colonial authorities. Primary interest to collect raw materials and preserve their colonies as markets for manufactured goods from the metropolitan country.

The present day District Planning Committees are supported on the basis of efforts to grapple with the exercise of comprehensive planning which is concerned with the description of the state of affairs, a projection into the future and the establishment of inter-relationships. At the national level it was deemed that comprehensive planning can be successfully achieved through decentralization of the planning machinery. Decentralization is the result of the desire to have a high degree of intimacy with local conditions of the various

parts of the country. The idea is that the local people have a better understanding of their environment. Thus the aim has been to involve the officials of the various ministries residing in the districts and the people of the districts into planning. The district has received a wider attention as a small unit of decentralized planning.

The field officers who comprise the District Planning Committees are concerned with preparing projects or schemes that they deem necessary for the development of the districts in which they serve. The recommendations of the District Planning Committees are submitted to the Regional Planning Office and from the Regional Planning Office to the National Planning Office. The district Projects are finally approved or disapproved at the national level. The whole planning efforts of the District Planning Committees can be summarized as Rural Planning operating through the development of uncoordinated sectoral Projects carried out by the various Ministries. Hence national economic planning has tended to develop natural resources through separate efforts of concerned ministries but through committees of planners.

1.2 Lack of Integrated Planned Action:

The kind of rural Planning and Development that we witness in Uganda to-day is circumstantial and not borne of the intent for integrated rural and regional development. The financial resources for sectoral developments are allotted relative to the expected national gains as is dictated by the existing space economy and economic profitability of the available natural resource or resources. For a resource far deep in the periphery to attract public investment it must be of exceptional economic profitability like a mineral or exceptionally unique like game (wildlife). Resources widely extensive like arable land demand less and less attention relative to their degree of peripherality. This induces planning decay relative to peripherality. There is the danger of an officer residing far from the centre turning

some projects year after year with less attention paid to them.

Integrated action to develop rural natural resources as belonging to a single organization which is the government is still lacking. It has already been mentioned that national economic planning as hitherto only resulted into sectoral developments. Decentralization of the planning machinery implemented through District Planning Committees has not yet achieved comprehensive rural planning. The prime force to rural development has continued to be the availability of nationally economically profitable natural resources. National economic planning has been dictated upon by the objective of economic efficiency. And as long as economic planning shall remain the only planning efforts in the rural areas of Uganda there shall not be comprehensive integrated programmes. What is necessary is coordinated efforts to solve both economic and physical problems in the space economy. This can be attained when there are Regional Integrated Development Programmes and these can only be initiated through Regional Planning.

3. The Inadequacy of Sectorial Planning as is Exemplified through the Agricultural Sector.

Development is a critical issue of developing countries and mainly because of the rapidity with which we are to cope up with the problem. The rapidity breeds pressure, little room for thought, experimentation, strategy formulation and implementation. As we grope for solutions to our problems we sometimes find ourselves confronted by serious shortcomings - shortcomings of things we may have taken for granted from the beginning.

Sectoral initiatives are supposed to induce development by injecting leading innovative forces into the existing traditional structures. The traditional structure is supposed to adopt aspects of modernization from the introduced projects and thus achieve a faster pace upwards. Thus today we find various projects springing up to deal

with the problem of increased development for rural areas in Uganda. Some of these projects intended for modernization have been in the agricultural sector.

One of the major problems still facing Uganda today is how to improve the standard of farming which is still retarded by the need for each individual farmer to produce the bulk of the food requirements of the family. There are desires to improve on the rural peasant farmers' standards of farming so that they can generate more income for themselves. The desire to improve the standards of farming has resulted into agricultural projects being injected into the rural areas but unfortunately without comprehensive planning. It seems that improved standards as an end are geared to as a blessing that will come automatically once the projects are started. Yet without proper planning, much effort may be wasted without scarcely anything achieved.

The case for agricultural modernization becomes more critical when we consider the people who are involved at the grass roots; the peasants. In many developing countries agricultural production seems to be a prerogative of the peasants, as it were. And improvement of the standards of farming to incorporate modern technologies and modern standards of organization certainly involves a change of life for the peasants. The speed at which the modern standards are introduced may yield strenuous results. For most peasants, subsistence agriculture is not merely an occupation or a source of income but a way of life. The process of agricultural production is intimately bound up with the way of life of many producers and with the organization of rural communities. Any change in the methods of production means a change in the peasants' way of life. This necessitates the use of systematic planning applying the tools of integrated modern, technical, physical, economic, social, educational and political inputs. The peasant farmer must be taught to expect, comprehend and accept changes. Yet the necessity of rapid

little transformation of the economy gives us^A time for detailed comprehensive plans with the result that most of our projects for development of the rural areas are mere injections of innovations into the rural areas though with high hopes for success.

One of the methods conceived in Uganda to improve the standards of farming was to organize group farming. Group farms started seriously in 1963 in the then Northern Region but were soon extended to the Western Region too. Group farms were started basically because of three reasons:-

- (1) As experimental solutions to ameliorate current rural development problems.
- (2) As agronomic measures to accelerate development in particular sections of the country.
- (3) As pilot programmes to introduce the long range emphasis needed to complement existing programmes.

One can see that the goals are quite noble. Infact group farms were supposed to result into new forms of rural settlements utilizing modern technology for farming and loans from Uganda Credit and Savings Bank. The organization is run through the primary marketing cooperatives. Agreements are signed between the cooperative concerned and the Director of Agriculture. The Agreements lay down what the Department of Agriculture is to provide to the members and what the members should do in return.

To the peasant farmer the object of the group farm is purely an exercise into innovations. New principles and constraints are introduced to him. There is the use of a special set of bylaws, the receiving of loans, use of planned land divided into plots and marked out into strips for tractor usage, management and administrative personnel and continued meetings to explain what the scheme is all about and how to proceed. These are completely new things from the

government's organizations intentions which are superimposed above the peasants' traditional knowledge pattern of agriculture. The officials are greatly concerned with seeing that the by-laws are followed and that the loans are secure. Basically the officials' concern is not very much to educate the farmer to adopt to the introduced conditions. For the peasants, their worries are about their being able to produce much to earn them adequate income than they have earned before. Their major concern lies in the scheme being able to generate greater incomes. Thus there lies the dichotomy between the two groups' expectations with no one to mitigate its vigour.

At this point we shall go farther and introduce one isolated example of a group farm to illustrate what a wide scope of planning that was necessary but was left incomplete. This is the Waiga Group farm in the Western Region of Uganda. Waiga is a river in North Bunyoro situated in Bujenje county, in the north. Waiga Group farm was started in 1965 in a riverine area about eight miles from the nearest existing settlements. Waiga Group farm is today a rural piecemeal planning that is on a downward trend. The failure of the Waiga Group farm came about because alot of social, economic and physical aspects were either left unconsidered or taken for granted from the beginning. Below are enlisted the various problems why the Waiga group farm failed:-

1.3.1 Inability to use previous experience:

Waiga group farm was not the beginning of group farms in Uganda. Much could already have been learnt from the Northern Region to avoid unnecessary mistakes. Even in Bunyoro itself group farms had already started in some other parts of the district. Thus group farms were continuing to spread in Uganda without utilization of the practical knowledge of the farms that had started earlier on. The Waiga group farm was projected on the same theoretical conceptions that were perceived from the time of inception with no application of experiences elsewhere.

3.2 Varied Socio-economic Conditions:

The group farm was started among the Bagungu people who live on the Lake Mobutu flats (formerly Lake Albert). The people are largely fishermen. Agriculture as a means of earning income is given low considerations. Tilling of the soil is mainly left to the women and mainly for the sake of producing food. The Lake is the desired object for income earning, especially among vigilant youngmen. However, together with fishing, the greatly desired occupation, some production of cotton, the only cash crop in the area, is carried on. Oldmen who cannot manage the intensive labour that fishing demands stick to cotton production. Besides, fishing needs a lot of investment initially. Some young men who have not accumulated enough capital for "take-off" in the fishing industry will stick to cotton growing too. Some rich fishermen may also substantiate their income by producing cotton using hired labour. The women are the only life-long cotton growers.

Thus according to the traditional economy of the area, the group farm being an agricultural project, its viability depended on how well it compared with fishing, as an income generating venture. Luckily enough, the produces of the initial years were tremendously good though very many problems were encountered. Had it not been because of the short sighted planning, the group farm may have gained a strong stand. Some of the problems would have been looked into from the beginning.

1.3.3 Distance to the Group Farm:

The Group farm was started eight miles away from the nearest settlements. At the beginning, the distance may not have seemed a problem because the first people to be involved were men who were using bicycles to travel to the site. The use of bicycles in Bugungu is very prevalent because of the flatness; and this sometimes gives people an illusion on objective distances. I am sure if this scheme was to be in other parts of Bunyoro where the landscape is hilly and where there is

much thick vegetation, eight miles distance would have been resented by many from the beginning.

As time went by and tending to crops necessitated more labour, the question of distance became more crucial and realistic. The worst time was reached when the picking period started. A big number of people were needed for the work. The Waiga Group farm was not meant for settlement as other schemes in Bunyoro. It was modelled on the Northern Region type where people were to commute to the farm. The Bagungu people are partly cattle keepers too and do not settle on the land they till. The area near homes is left to animals to graze. Gardens are usually located two to three miles away from homes. Therefore, settlement on the scheme would have met with a lot of resistance. Besides the scheme was started in a non-cattle grazing area because of tsetse infestation. Thus, the factor of cattle keeping did not render people "loose" enough to shift their homes; to the extent that some people were to commute even from as far as ten miles away to do the work on the group farm. Transportation proved to be a very big menace. A few people would manage to get on the bus to Hoima or Masindi town. But people going longer distances were usually preferred to those who merely wanted to go to the group farm. Many were usually left behind, which would be after their spending some of the morning time waiting for the buses. Some would go on bicycles, but these were few too because of the limited carrying capacity of the bicycle. Those who felt physically fit enough would go on foot. Therefore, it became pertinently clear that settlement, at least of a temporary nature, had to be put up on the farm. Shacks were hurriedly erected to shelter people.

1.3.4 Storage of the Cotton:

Not only the housing of people was at stake. Even the cotton produce itself could not be carried home for storage. Stores had to be constructed on the site. These were some of the problems which could

have been considered from the beginning. At least shelter of a camping nature should have been anticipated. After all the Bagungu are used to living in fishing camps; then why not agricultural camps? One would have expected the case to have been clear from the beginning, but it seems it never occurred so to both the farmers and the officials. Infact the question of storage became so pertinent that even cotton buying stores had to be constructed on the site.

1.3.5 Provision of daily amenities:

Once the people had decided to stay on the site, obviously the problem of provision of amenities for daily living set in.

The people had to eat and drink to maintain their lives. Water, regardless of its health hazards, could easily be got from Waiga river near which the scheme had been started, but food was nowhere in the vicinity. It had to be obtained from the usual gardens back at home. The daily food of the Bagungu is cassava and fish. Cassava is mainly made into a thick porridge. Before the cassava reaches a final eating stage, alot goes into it - uprooting, peeling, drying and pounding. Since the cassava was situated for this would involve travelling and therefore diverting from work on the farm on part of women. The fish too had to be fetched from fishing camps which were far from the farm. Thus the provision of food which became eminent as more people began to settle on the farm because of increased demand for labour, proved distractive to the very much needed manpower. Since the Waiga group farm did not start off as a settlement scheme, the food had to continue coming from far because the time when the people went to settle on the farm was during dry season when planting of some of food crops could not happen.

1.3.6 Duties at home:

The maintenance of the homes and food producing plots farther away were other distractive factors. The food gardens needed care.

Much labour was needed at the cotton farm ending up into many people of a household involved transferring to the group farm. Only the children and in most cases one adult could be left to look after the homes. In comparison with those who were not involved in the farming, the homes of the group farmers began to deteriorate. The household heads or men who usually maintained the houses were away. Security of the homes when most people were away was of concern too. This created a situation whereby the people could not live contented on the farms they were working. They were always worried of what might be taking place back at home, especially the adults. Working on the group farm brought division among household members with some people living on the farm while others stayed at home. Child labour which is usually beneficial in picking cotton could not be utilized because the majority of the children went to school. If the group farm was not far the children would have worked on Saturdays as is usually the case. But distance was a retarding factor. The children had to be at school five days a week. On Sunday they were to report for church service. If they went to the farm on Saturday they would spend most of the time in travelling to and from the farm. In which case they would not be of much valuable service. Therefore, the best was to simply leave them at home.

1.3.7 Facilities for daily shopping:

Man does not require food and water only for living. Some more problems were to present themselves. Daily shopping became another requirement in the area. Shopping became more required as time went by and more people settled on the farm. Some people who had reaped substantial income during the first year harvests put up some small shops to remedy the situation and enhance their incomes too.

1.3.8 Long term considerations:

Settling in the area was made more permanent by members of the Alur tribe who migrated to the place to settle as outgrower farmers (usually associated with tea and sugar estates in East Africa). Many more Bagungu followed too and settled in the neighbourhood of the group farm because the first year harvests had proved that the area was a very good land for cotton growing. The word of the success of the area spread and people hurriedly went to open up plots in the area in hope of big incomes in the future. This was a time when cotton as a cash crop was given a boosted acknowledgement in Bugungu. It gained recognition never seen before. Besides, the Lake today is becoming increasingly negative in its returns. People have to find a resort to and this may have been an occasion to make Waiga Group farm a real teeming rural agricultural Project generated of the desire to create conducive planned rural development. The area which ^{is} today settled by the Bagungu is suffering a deterioration in soil fertility. And since the farm was started in virgin riverine fertile soils better than those of the present settlements perhaps some people would have shifted for ever to settle on a better agricultural land. The failure of the group farm curtailed such developments which would have taken place. Planning for future development is sometimes an exercise which necessitates broad imaginative multifarious thinking. One project can be utilized to encompass many other ends.

1.3.9 Unplanned Settling:

The rash to the Waiga riverine group farm saw not only group farming but also group settlement. Because it was a wild virgin area most of the houses were built in one place resulting into a conglomerated settlement rarely seen in rural areas. The area chosen for settlement was soon to be surrounded by cotton plots offering little room for expansion. The result was a very congested settlement which may be

termed as a rural slum. The congested aspect was typical of what one sees in rural slums. Life in the settlement was hectic too. At first some people liked it because it seemed a source of excitement in a rural dull life of the countryside. It turned out to be one of the major alcohol consuming areas in Bugungu. The local brew is generally prepared by women. Thus women, especially single women, quickly moved in to tap the new market. Many more people moved in just for the sake of merry making. Some people would stay under the guise of helping their relatives. Some crimes and misconducts were committed too. Nevertheless, they were at a minimal. People still adhered to rural standards of sticking to proper social conduct. The majority of the people knew each other by face and would be worried of what the neighbours would say if they were to misbehave. The maintenance of good social order can be appreciated by the fact that within the settlement there were no law enforcing officials. The people were still responsible to the chiefs back at home quite a distance away. The major snag of the area was the physical conditions. People were congested together haphazardly without good physical spacing. The Department of agriculture by-laws were only for the cotton plots but not for the settled area since settlement was not initially designed for. There were no latrine facilities. The area around the settlement was awfully dotted by human dung - a very sickening sight indeed. At night people would even deposit dung in the neighbouring plots which was a menace to the owners. Garbage in form of house refuse and cotton litter started to accumulate in open spaces within the neighbourhood. The garbage and rain would make a very awful sight.

1.4.0 Further Comments:

Thus without even questioning the fundamental nature of the group farm as an ingredient of proper rural development, we find that very many problems were related to it once the project was started.

An ingredient of development like a rural project has aspects economic, social and physical related to it. In case of the Waiga group farm the Department of Agriculture was to assist in planning for some of the aspects economical. It also had an attempt on physical ones like the layout of the plots and the location of the entire farm. However, the physical planning of the area was too limited to be of extensive benefit. A lot of social aspects were left unhandled. When you come to think about it you realise that coordinate efforts of various departments to handle aspects social, economic and physical was necessary. The project needed taking into consideration comprehensively many aspects the planning of the area in connection to aspects related to settlements in Bugungu, the social aspects of the people, the general ecological conditions of the area, the economic understanding and aspirations of the people and the future implications of the farm on general development. This is what is called area-based comprehensive planning.

Furthermore, one of our mistakes in agricultural modernization and other aspects of rural development is the desire to want to simply substitute the traditional pattern of agriculture by a pattern based on technological and operative features which have little in regard to the ecological setting. And in this ecological setting the biggest stress should be man - the peasant farmer for whom the development is intended. The transformation of agriculture is not due to technology alone. Pecuniary capital investment should advance in combination with a revolution in the institutional structure and profound economic and social changes. Otherwise, the advancement of agricultural modernization though it will not be totally hopeless, will be difficult enough. Many of our rural projects for development may remain not more than mere dotted injections into rural areas. A lot could have been achieved by the Waiga Group farm if broad imaginative planning had been applied exhaustatively, right from the beginning.

1.5 The need for Integrated Planned Action:

Rural planning through sectoral developments and separate plans for urban centres are hardly a solution for economic development though some economic growth may be achieved. The various dimensions of development have to be unified into integrated planning and implementation efforts. We need integration of the economic sectoral planning and physical planning programmes to achieve unified implementation. We have to realize and stress the interconnectedness of the issues we are dealing with. Most of the problems, if not all, of poverty, economic progress, population growth, uncontrolled urbanization, rural stagnation, mass unemployment, mass migration to cities and threat to natural environment for which we are daily groping for solutions are highly interconnected. For us of the developing world, they form a very menacing vicious circle.

1.6 Sectoral Projects as the basis for Comprehensive Integrated Planning:

Knowing that natural resources as the basis for development and economic growth are never ubiquitous in kind and intensity sectoral projects can be used as starting points for comprehensive planning with intent to achieve spread of modernization through diffusion of innovations. Sectoral projects should be planned to become integrative factors of their environment with the projects being treated as a series of elementary innovations which will become organized into innovative clusters and finally into large scale systems of innovation. This is the bottom-up grass root planning that begins from the beginning. Infact, it is tautology to say that rural planning should begin from the beginning, except to emphasize the fact. We have in the countryside scattered investments that can form the nuclei for comprehensive planning..

1.6.1 Service Centres:

These are in the form of local administrative centres (county and sub-county headquarters), schools, trading centres and rural hospitals. These can be the starting points for comprehensive semi-urban areas capable of being the basis for providing the amenities of town in the villages. The service centres should be transformed into stimulants of rural developments rather than isolated islands of modern life.

1.6.2 Agricultural Estates:

Two examples will be quoted here to pinpoint the empirical realities of the argument.

(a) Bugambe Tea Estate: This estate is to be found in South Bunyoro District of the Western Province, west of Hoima town. The estate was located purely on the basis of suitable environmental conditions and expected economic gains from tea sales. The area where it was situated was relatively remote in the sense that it was least inhabited, and, therefore, with poor communication connections. There was only an earth truck leading to the area at the time the project was begun. The bridges were unreliable. The project was entirely a government investment. A big area was cleared for tea growing and when the tea was nearly mature a factory was put up. Labour was needed for picking the tea and for work in the factory. News for employment opportunities at the estate began to spread and people soon flocked to the area. To begin with, a few went, but the whole venture became so romanticised that a great many people shifted to the area.

Not enough housing facilities were available to the labourers at least the low income earners. They soon constructed their own to which not a few have today turned as their permanent or semi-permanent homes. Businessmen too were soon aware of a new market to be tapped. They rushed to the area to put up shops, restaurants and bars. Food

marketing became increasingly geared to the area. And today one of the best pop-music band in Bunyoro has its base in Bugambe. Farmers were also soon to realize an opportunity for new investments and improvement. They hurried to the vicinity to open up land for tea growing. Thus today the estate has many outgrowers around it.

Bugambe has turned out to be an important rural-urban-industrial growth in Bunyoro in sectoral development thought. However, most of the improvements have been geared to the economic efficiency motive only. There is lack of comprehensive integrated multi-disciplinary planning to accomodate both economic and social practical problems. The estate gives an opportunity for a number of nationals to fulfil their economic motives. However, for the estate to become a significant full-fledged factor of development it should also play a role in the development of human settlement habitat. There should be planning to accomodate a number of social requirements like housing, water, education, roads, other transportation facilities and health facilities.

(b) Kinvara Sugar Estate: The second example is from North Bunyoro District, twelve miles from Masindi town. The estate was started recently as a project for more sugar production in Uganda. Kinyara was recognized from the early days as an area conducive for sugar growing. Most of the sugar is today mature for harvest and a factory has been put up.

However, barely than four years old, the scheme has already begun to show desirable signs of rural development in terms of urban development and job provision. A good number of people are employed on the estate to attend to the sugar cane production. Employment started off with a group of people who were to work on construction of houses. These were soon followed by tractor drivers to open up the area. Then more people were drawn to work on the building of the factory. When the factory goes into production some more people will

be needed to cut and load the sugar cane and some to man the trucks carrying sugar cane to the factory. Today quite a good number of migrants are living in Kinyara and a settlement, which is emerging into a promising urban centre has started by the roadside. Very many residential houses dotted around have come up. Shops have been erected and many more are under construction. Infact for anybody in Bunyoro in search of locating a retail trade enterprise, it is one of the most promising lucrative choices to utilize.

It can be seen that various multi-dimensional types of developments come to conglomerate around the estates or some other sectoral projects. Hence the projects as stimulants of economic developments in the areas they are situated. However, these projects lack comprehensive planning to accomodate more than economic aspirations. The projects are infact basically for piecemeal solving of one or two economic desires. This study advocates that once such projects have started there should be developed plans to deal with both economic and social practical problems of the projects. In that way the projects shall play a conducive role in the development of their environments or the country side.

5.3 Resettlement Schemes:

For more than two decades resettlement schemes have been undertaken in Uganda. Resettlements have been of two types:-

(a) Individual holding Schemes:-

- 1949 - Settling landless people in South Busoga.
- 1954 - Settling landless people from Kigezi to other parts of Kigezi and Ankole.
- 1955-61 - Settling people in areas cleared of tsetse flies in Mengo, Bunyoro, Lango and Acholi.
- 1961 - Settling youth at Kabalye in Bunyoro.

1959-66 - Settlement of refugees at Koboko, Bombo, Kiburara, Nakepiripirit, Onigo, Nakivali, Kyangwali and Oruchinga.

(b) Scheduled Production Schemes:-

1960 - Mubuku Irrigation Scheme.

1964 - Settlement of school leavers at Nyakashasha.

1964 - Ranching Schemes.

These various schemes in rural areas can be used as the basis for comprehensive rural development planning. Since these schemes are used to open up virgin areas, a lot of planning can go into them as the projects proceed. Resettlement schemes should be utilized to bring benefits to much larger areas than themselves. They can be made to act as stimulants to a diffusion of innovative processes in their surroundings.

The major snag is that most of these schemes have been set at quite long distances from already established settlements. One could argue that these distances may be necessary to avoid antagonisms that may crop up between the already established members in the areas who consider the places as theirs by a birth of right and the newcomers as intruders. However, are resettlers to be condemned to isolation as if they were dangerous commodities. A reasonable distance can be negotiated between the old members and those concerned with planning the new settlements. Judging by the long list of people wishing to join some of these schemes like Mubuku, it can be seen that some old schemes have already demonstrated desirable results and resettlement schemes may be welcomed rather than repelled.

Most of the schemes especially the individual holding schemes have been started to solve a prevailing urgent problem with no protracted intentions. The emergent problems are solved as they arise with time. In fact in initial stages the settlers have met with

hardships, especially as authorities have not thought seriously on providing certain social amenities. Most of the amenities came years after. Planning does not go very much far than deciding the locations. So that resettlements, especially individual holding schemes have spread nothing more than schemes that merely spread a traditional agrarian system over new land.

1.6.4 Peri-Urban Development:

On the urban side there is also a mode of recent development that needs consideration for comprehensive integrated planning. When for us in East Africa urban centres were started, they were not very much for our enjoyment. The Africans for most part were meant to keep off towns unless as performers of services necessary for the colonial masters. Today urbanization is becoming so involved into our way of life. Let alone the big urban centres, there is a new phenomena emerging around these centres - that of Peri-urban developments. Peri-urbans seem to be an emergent interesting phenomena that can be utilized in planning to combine the urban and traditional sectors of development.

Peri-urbans are not around our big cities only. They are slowly beginning to show around our regional or provincial headquarters. Around these centres can be found villages which are neither entirely rural nor entirely urban. Some people have shifted to such areas and are finding it possible to live without working the soil or being employed in factories but by rendering certain services to the urban workers who live in the areas. Infact very many elites and the rich drive to these areas in the evenings for socialization. In these areas is the opportunity to mix freely with the people unlike it is in the city centres where life is very formal and sophisticated for the average man. Hence one wonders, is the authentic African town just beginning to emerge? And if so why should we not develop compre-

hensive plans for the development of such authentic African developments.

1.7 Physical Planning as part of Comprehensive Integrated Planning:

Above some recapitulated accounts have been attempted to indicate various types of developments than can serve as starting points for comprehensive integrated planning and development. What is rarely understood and stressed is that physical planning should be part of comprehensive integrated planning programmes, especially in rural areas. However, meagre the attempts may be today, we cannot afford to avoid the integration of economic and physical planning. Planning can be greatly improved through a better coordination of government activities. The government as a countrywide monolithic decision maker and entrepreneur, acts through various ministries and departments. Each ministry is charged with specific responsibilities. What is advocated here is not integration of ministries but coordination and cooperation.

Since the 1960s, town planning which is the core line of physical planning, has undergone change or revolution. Town planning has advanced from emphasis on the shape of physical space, environmental design and graphic presentation and has added ideas of economic truths and consequences. Physical planners have become more concerned with the functional bases of the urban environment as is exemplified by studies in transportation planning, economic base, planning for housing, and cost-benefit analysis. This has gone further to widen the scope of physical planning making it draw from various disciplines. For rural development too not much can be achieved without understanding the authro-socio-economic elements that lie behind. For most part, physical planning concerns itself with the detailed mundane factors of the economy.

In terms of systems theory we have to realize we are dealing with very broad spectra. We are dealing with open systems, with growing field of knowledge influenced by aspects historical, present

and future in the whole evolution of human development. Once we begin to talk about comprehensive integrated planning, we are talking about a complex contingent of knowledge for which obvious pathways may not be easily visible until after an evolution of consistent research over time. We shall find ourselves concerned with various aspects like regional analysis, urban sociology, decision theory, data processing, resource management and environmental conservation.

1.8 History of Regional Planning in Uganda:

The history of regional and rural planning in Uganda clearly indicates that regional planning can be subjected to a process of thinking and re-thinking. Whatever regions that emerge and are utilized for planning depends on the strategy that is developed at the particular period. Efforts towards regional planning in Uganda can be traced back to 1963 to the coming of the first United Nations Planning Mission. The Mission was specifically charged with the duty of preparing a Master Plan for the then Mengo Municipality. Their concern was with a metropolitan region, therefore. The first mission recommended farther studies for the Kampala-Mengo area; the responsibility which was taken on by the Second United Nations Mission of 1964 - 1965. Adopting the "homogenous factors" approach the Mission defined its planning regions on these considerations:-

- (1) The dominant sphere of influence of Kampala city.
- (2) Significant Physical features.
- (3) Climatic and soil conditions.
- (4) Population density.
- (5) Convenient administrative boundaries.

Then the mission proceeded to make a series of studies from which they made a number of recommendations. Some of the recommendations have been pursued in the Kampala Master Plan.

Such work as had been started over the Kampala-Mengo Planning

Metropolitan region was to be continued successively over Uganda as is evidenced from the terms of reference for the Third United Nations Mission of 1967. These were:-

- (a) To produce a physical plan for Jinja Region.
- (b) To produce a physical plan for the Mbale/Tororo Region.
- (c) To help in the implementation of the physical plan for the Kampala-Mengo Region.

The work of the third mission on the Kampala-Mengo area and Jinja area is contained in two reports:-

- (a) Report on the Present Land uses and Master Plan programme for Kampala. January 1966.
- (b) Report on Present Land uses and A First outline Master Plan for Jinja and Njeru.

The United Nations Missions were in Uganda to initiate regional planning based on metropolitan regions. This type of planning if continued would be at variance with the existing national economic planning. The national economic planning in Uganda has the administrative organizational structure as its spatial mode of reference. This type of planning would have continued and amplified discrepancies between economic and physical planning which would be very absurd in the present limelight of continued urge of cooperation between the two types of planning.

Today regional planning has been instituted as part of the Town and Country Planning in Uganda. A country-wide overview as a basis on which regional planning is to proceed has been prepared. The present approach tries to integrate physical planning with the national economic planning process. Like National economic planning regional planning is to proceed through the existing government machinery.

The topmost concern of the Ugandan society at the time of independence was how to govern itself and preserve its independence. It was soon realized that the national independence had to be guaranteed by increased economic development. Thus rapid economic development became the second major concern. However, to achieve a high rate of economic growth, economic development had to be planned. Hence national economic planning was the third concern. We can today say that we have reached a point where regional planning is going to be the fourth concern.

For national economic planning, industrialization, urbanization, agriculture and rural development have been and will continue to be at question. For physical planning the increased mundane problems of high rates of urbanization and the search for their solutions beyond the urban frontiers, the core-periphery relationships, the integration of sectoral rural developments into comprehensive regional and district plans, the inter and intra regional relationships and peoples participation in the planning machinery are at question.

RIFT VALLEY IN UGANDA



LEGEND

- ~~~~~ ASWA RIVER
- ▒ RIFT VALLEY
- ↪ MAJOR WARPING
- DIRECTION OF TILT
- ⊥ DIRECTION OF RELATIVE DOWNWARP

CHAPTER II

THE REGIONAL CONTEXT:

The shape that the geographic space of Uganda is today can be said to be a result of historical accident, political expediency and administrative convenience. Political expediency and administrative convenience have continued to affect internal changes in the country. At the time of independence Uganda was divided into fifteen districts. The districts were later on increased to eighteen by creating the districts of Sesei, Madi and East and West Mengo out of the districts of Bugisu, West Nile and Mengo respectively. These eighteen districts were organized into the four regions of Northern, Eastern, Buganda and Western. In 1972 a more drastic turn took place. Out of the four regions, ten regions (now called Provinces) were curbed. And the number of districts more than doubled to become 38 new ones; which means that each of the old administrative units was divided into at least two districts. New forms of administrative units known as Sub-districts also came into existence. Sub-counties number about eleven. Some big counties became districts or sub-districts and some big sub-counties became sub-districts.

Most statistical information in the country is kept according to the administrative units. Prior to the 1972 administrative changes one could properly say that the country had remained as the most stable unit giving least alterations in terms of statistical data available. Today many counties have continued to retain their stability but some big ones like Kilaka (divided into two) Bugahya in Bunyoro (divided into two) and Burahya in Toro (Ntoroko part became part of a new district - Siemliki) were affected by the recent administrative reforms. So that the least affected units today are the sub-counties. With the increase in number of the administrative units recently the sub-county may be the most important unit for storage of data at the

RIFT VALLEY

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North Bunyoro








South Bunyoro

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Toro

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REGIONAL
CONTEXT

-  RIFT VALLEY BOUNDARY
-  INTERNATIONAL BOUNDARY
-  PROVINCIAL BOUNDARY
-  DISTRICT BOUNDARY
-  RUWENZORI MOUNTAINS
-  BUSONGORA COUNTY
-  SUB-DISTRICT BOUNDARY

SCALE 1:1,500,000

district level while the county together with the sub-districts, where they exist, will be vital for the regional level. The county, however, may attain the supremacy because of its size which makes it less numerous districts and county over making it more suitable for both comprehensive economic planning which is more generalized and regional physical planning which concerns itself with detailed mundane problems.

The increase of administrative units in 1972 meant an increase of the ministerial field officers. So that in terms of rural and regional planning there will be an extensive coverage of the country. Some places which may have been lacking coverage because of size will have to be brought into the picture. However, it must be said that for increased economic development the administrative machinery needs to be seconded with increased capital investments and planning involvement if a large magnitude has to be attained. In terms of physical planning, the lack of officers to implement planning procedures extensively will continue to be a hindrance.

Busongora county in Western Uganda is one of the two counties which constitute Ruwenzori district. The district is a recent creation for it was part of Toro district before 1972. The whole of Toro district was divided into three districts of Toro, Semliki and Ruwenzori. Since the early 1960's the Bakonjo together with Bamba had started a secessionist movement against the Batooro. The Bakonjo and Bamba are more akin to each other and speak similar dialects which are least understood by the Batooro though they are all Bantu.

In 1894 Uganda became a Protectorate of Her Majesty Queen Victoria of Britain's Government. Prior to this, Uganda consisted of a number of kingdoms and territories which were neither united under one rule nor had properly defined boundaries. A series of agreements with the kingdoms - Buganda in 1900, Toro 1900, Ankole 1901, and Bunyoro 1933 - followed. The British gave these kingdoms autonomous

rights to govern themselves under the Protectorate. The Toro Kingdom included Bamba, Bakonjo and Batooro people. The ruling clan belonged to the Batooro people and so it can be said that the Kingdom belonged to the Batooro, and the Bamba and Bakonjo existed in it though they were not seriously to be taken as subordinates prior to coming of the British. The Bakonjo and Bamba on one side and the Batooro on the other had established a certain degree of co-existence but had not begun to consider themselves as a single people.

When the British arrived they made matters worse. The Batooro continued to get certain elements of modernization from the British while the Bakonjo and Bamba lacked or lagged behind. This created a rift between the Batooro as the modernised ones and the Bamba and Bakonjo who were lagging behind.

"One thing that is clear is that all this was, under the shadow of the twofold principle of divide and rule" and "get rich quick" done not only to confuse the natives that they were indeed alien to each other but also for the furtherance of the colonial exploitative programmes. Indeed it is fair to suppose that the British did not come to Uganda purposely to ensure social equity (balanced regional growth), but rather "economic efficiency" (over all national economic growth). It was in pursuit of the goal of "economic efficiency" that the British proceeded to concentrate her development efforts in the most promising areas (----- the favoured areas or the core) of Buganda and (though to a less extent) Busoga, Toro, Bunyoro and Ankole for maximum returns on

investment, and virtually neglected the rest of the country.(1)

In Toro that less-extent-than-in-Buganda investment benefited the Batooro largely. The problems of social antagonism that followed have continued to menace the central government up to now. One British reporter who had spent a long time among the Bakonjo and was called upon to negotiate for peace with the leaders of the Ruwenzururu Movement (the secessionist movement) had this to say:-

"Let me make my attitude clear from the start: I have been for peace, but I have also been for the Bakonjo. They are a people industrious, humble, and intelligent, strong in character and strong in limb; and throughout the history of modern Uganda they have been constantly undervalued. I have never blamed the Batooro for their domination of the Bakonjo, nor for their scorn of them. The British allowed the first to develop and the second followed from that - a natural enough attitude by a peasant people towards their less elegant and less schooled neighbours. Nevertheless, it was a situation that did not deserve to last." (2)

Therefore, one can summarize the formation of the Ruwenzori and Semliki districts as a result of historical conditions of economic efficiency and social dis-integration of the colonial era days and the search for political expediency and administrative convenience of the independence era governments. What success the exercise has

achieved on the independence governments' objectives is yet largely for history to judge though close intimacy with local conditions in the area shows that there is some degree of non-conformity.

According to present day regional grouping the districts of Ruwenzori and Semliki are in the Western Province together with the districts of North Bunyoro, South Bunyoro and Toro. The formation of the two districts can be said to have introduced new dimensions of planning and development consideration. The areas of Ruwenzori and Semliki have to be given different consideration than existed prior to 1972 for now they are of district status. In Ruwenzori, Busongora and Bukonjo counties have to receive increased consideration in terms of development for they are today two counties forming a district and not some of the many counties in the previous Toro district. The Semliki district too, the counties of Bwamba and Ntoroko have to receive increased consideration as two counties that constitute a district. The same can be said of Buliisa sub-district in North Bunyoro that today it has attained a profound foundation for developmental consideration for it has to be considered as a sub-district in the national context and no longer as a mere sub-county. This profound foundation for development in the national context can be considered to have been attained by all the Zaire-Frontier marginal areas of the Western Province. Thus, in terms of regional Planning for the present day Western Province of Uganda, the Zaire Frontier marginal areas have to be given a new magnitude.

It was pointed out in chapter one that the development of the various parts of the country is highly a function of the resources both material and human that exist in those areas; especially for the peripheral areas. It is the nationally profitable resources that will ensure the development of the peripheral areas

by attracting investment from the core region together with the results of the local investors. So that in terms of economic development and physical planning resource occurrence is a prime factor which may not need over-emphasizing.

The Zaire-Frontier, Western Province, marginal areas are found in the Rift Valley. It is the occurrence and exploitation of resources in the Rift Valley that will be and is the prime condition for the development of the planning and administrative units in the Valley.

However, once one begins to think in terms of the Rift Valley he is introducing a new dimension in the regional planning consideration. The Rift Valley transcends district boundaries and exists in more than one district even extending beyond the Western Province demarcations. Nevertheless, it is for the Western Province that the Rift Valley has largest considerations. The type of region that behaves as the Rift Valley in Western Uganda is known as a super-imposed region. Therefore, planning for the regional development of Busongora county must involve itself with the Rift Valley as a super-imposed region of the Western Province. The Rift Valley in Western Uganda clearly exists in the following administrative units:-

- | | | |
|---------------------------|---|-----------------------|
| 1. North Kinkizi County |) | North Kigezi |
| |) | |
| 2. North Rujumbura County |) | Districts. |
| 3. North and West of | | |
| Bunyaruguru County |) | West Ankole District. |
| 4. Busongora County |) | Ruwenzori |
| |) | |
| 5. Bukonjo County |) | District. |
| 6. West Bunyangabo County |) | Toro District. |
| 7. Bwamba County |) | Semliki District |

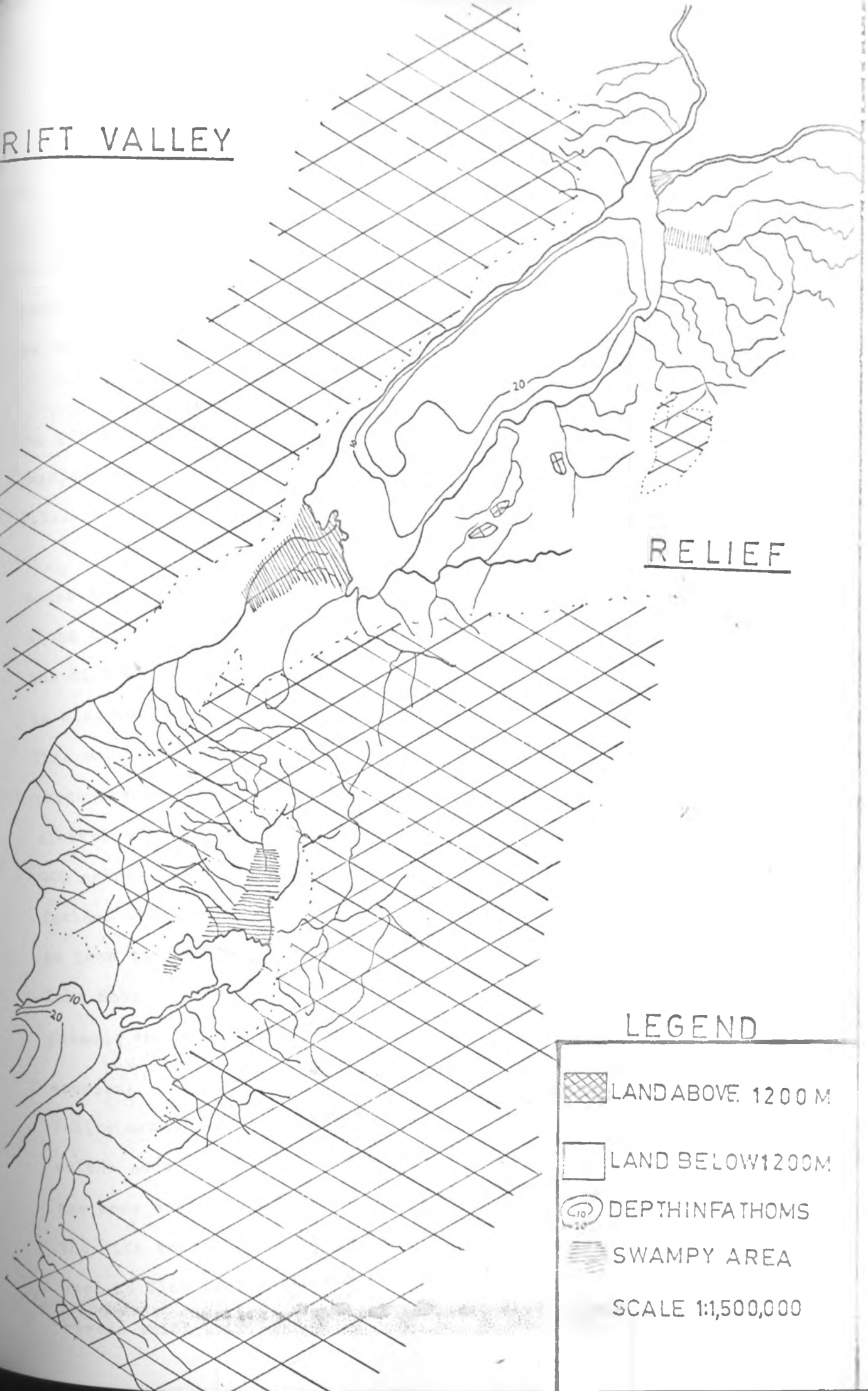
- 8. Ntoroko County) Semliki District
- 9. West Buyaga County)
- 10. West South Bugahya)
County) South Bunyoro
- 11. West North Bugahya) District.
County)
- 12. Bugungu Sub-district) North Bunyoro District
- 13. Jonam County) S. Nile District
- 14. Nwoya and to a certain extent Kilak
Counties - West Acholi District.
- 15. North Western Kibanda County - North Bunyoro District.

2.1 THE RIFT VALLEY ENVIRONMENT:





The Rift Valley in Uganda is part of the Great East African Rift Valley. In Uganda it stretches from Kigezi to Lake Mobutu at the head of which it joins the Nile River Valley and runs northwards towards Sudan. On the Eastern side it is defined by an escarpment which is more distinctive in Bunyoro than in the Southern parts. There are two major depressions - (1) That of Lake Mobutu flats and (2) that of Lake Amin and Lake George. The Lake Mobutu depression just over 600 metres above sea level is more pronounced than the Lake Amin - Lake George depression at 900 metres above sea level. The general width of the valley is about 48 to 56 kilometres. The Uganda-Zaire border partitions the valley between the two countries. Therefore, in Uganda the Rift Valley is delimited by the above mentioned faulted scarp with a North-East to South-West alignment in the East and the Uganda-Zaire Frontier in the West. This makes the valley a marginal Western corridor especially in the Western Province where it has a greater influence. In the Western Province the valley would

RIFT VALLEY

RELIEF



LEGEND

-  LAND ABOVE 1200 M
-  LAND BELOW 1200 M
-  DEPTH IN FATHOMS
-  SWAMPY AREA
- SCALE 1:1,500,000

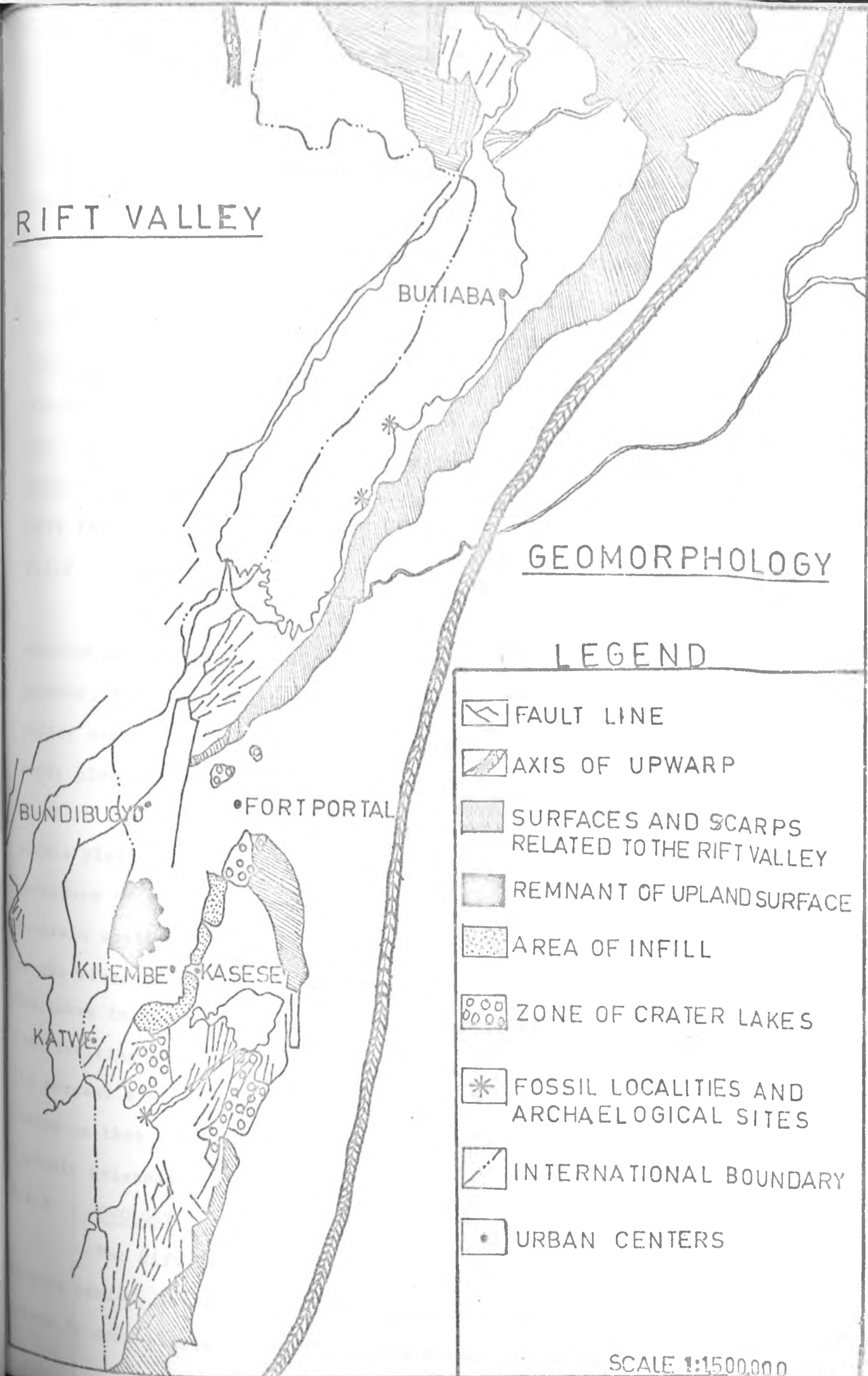
have been a continuous trough save for the Ruwenzori Massif raising to 4,800 metres above sea level which separates the two depressions of Lake Mobutu and Lake Amin and Lake George. In terms of spatial planning, it should be mentioned here that the regional elevation of the valley is less in the north than in the South.

The Rift Valley, which is the only one of its type, has its own peculiar environment which can be identified both in terms of physical and social aspects, either objectively or subjectively.

2.1.1 RELIEF:

The Ruwenzori mountain as part of the Rift Valley system makes heights vary greatly. If we are to consider the valley levels alone the differences would be of about 300 metres only. However, the highest peak on the mountain, the summit of mount Stanley, which is also the highest point in the country rise to nearly 5,100 metres. This makes a height difference of nearly 4,500 metres. The lowest parts are the Lake Mobutu flats which are at about 600 metres. The elevation of the Lake Amin - Lake George depression averages around 900 metres above sea level. Lake Mobutu sinks to more than 20 fathoms while Lake Amin goes to more than 40 fathoms and Lake George to less than 10 fathoms. In addition to the three major lakes of Lake Mobutu, Amin and George, there are crater lakes resulting from gaseous explosion and tarns on Lake Ruwenzori resulting from glacial erosion. Crater lakes are mainly in the Southern part of the Rift Valley around Lake Amin and Lake George. In addition, there are some on the escarpment area, where those of the Bunyaruguru escarpment are more scenic and destructive. The upwarping and faulting along the rift transverse, made a diversion of rivers which previously used to flow from eastwards towards Zaire reverse resulting into short rivers which flow into the valley lakes from the traverse. Thus we










RIFT VALLEY



BUTIABA

GEOMORPHOLOGY

LEGEND

-  FAULT LINE
-  AXIS OF UPWARP
-  SURFACES AND SCARPS RELATED TO THE RIFT VALLEY
-  REMNANT OF UPLAND SURFACE
-  AREA OF INFILL
-  ZONE OF CRATER LAKES
-  FOSSIL LOCALITIES AND ARCHAEOLOGICAL SITES
-  INTERNATIONAL BOUNDARY
-  URBAN CENTERS

BUNDIBUGYO

FORT PORTAL

KILEMBE

KASESE

KATWE

SCALE 1:1500,000

have in Uganda single rivers flowing into opposite directions like river Kafu which flows to the east while its Western Section known as Nkusi flows westwards; River Kalonga flowing eastwards and westwards into Lake George and river Ruizi with the Birira which is the western section flowing to the west and the Ruizi itself flowing to the east. The major river of the Rift Valley is River Semliki which flows from Lake Amin to Lake Mobutu. A section of the Nile known as the Mobutu-Nile is also of some consideration although the Nile is such a gigantic and lengthy river that it cannot be considered as a Rift Valley river.

2.1.2 GEOMORPHOLOGY:

The beginnings of the Western Rift Valley are said to have started during the early Oligocene Period about years ago. However, the major faulting resulting into the present pronounced valley started during the middle pleistocene period. During the early pleistocene the Rift Valley was a relatively shallow feature in which lay intermittently dessicated swampy lakes. During the middle pleistocene period, the trough floor dropped further down, shoulders of the rift warped up and the elevation of the Ruwenzori mountain continued further up. This was the period of the reversal of the rivers of Kafu, Katonga and Ruizi by the rift transverse. The lakes in the north and in the Amin-George depression contracted. Grid faulting and volcanics of the Rift Valley have continued up to the present time. Occasional earthquakes in Western Uganda always remind us that the Rift Valley has not yet reached a period of tectonic quiescence.

2.1.3 GEOLOGY:

The Rift Valley as it formed, especially during the pleistocene period, it was filled with sediments which are more than 18 metres in some places. The Rift Valley trough is dominated by

cainozoic rocks composed of sediments, alluvium black soils, moraines and volcanic rocks. The Western Rift Valley sediments are divided into several series which include Kaiso, Semliki and Kisegi beds. The Ruwenzori mountain range is composed of precambrian rocks of two types which include the Buganda-Toro system formations and granitized, less metamorphosed formations. The Buganda-Toro system includes the Bwamba pass series which is made of grits, sandstone, slates and phyllites and the Kilembe series. The wholly granitized, less metamorphosed formations which cover most of the mountain slopes are made of undifferentiated greisses.

2.1.4 HYDROLOGY:

Excluding the Mobutu-Nile catchment area which this thesis advocates should be put under different regional deliniation consideration, the Western Rift Valley belongs to two catchment areas of Western Uganda. These are the Lake Mobutu catchment area and the Lake Amin catchment area. The Lake Mobutu catchment area dominates the northern depression while the Lake Amin catchment area dominates the southern side.

2.1.5 CLIMATE:











Mainly from a rainfall point of view, Uganda can be divided into five major climatic zones of Lake Victoria zone, the Karamaja zone, the Western Uganda zone, the Acholi-Kyoga zone and the Ankole- Southern Uganda zone. The Rift Valley is part of the Western Uganda zone along the Uganda-Zaire frontier. The Rift Valley is a hot section with intense dry seasons and rainfall between 875mm and 1000mm falling on 80 to 100 days. The seasons may be generalized as follows:-

<u>SEASON</u>	<u>PERIOD</u>	<u>MONTHS</u>
1. WET	MARCH TO MAY	3
2. DRY	JUNE TO JULY	2
3. WET	AUGUST TO OCTOBER	3

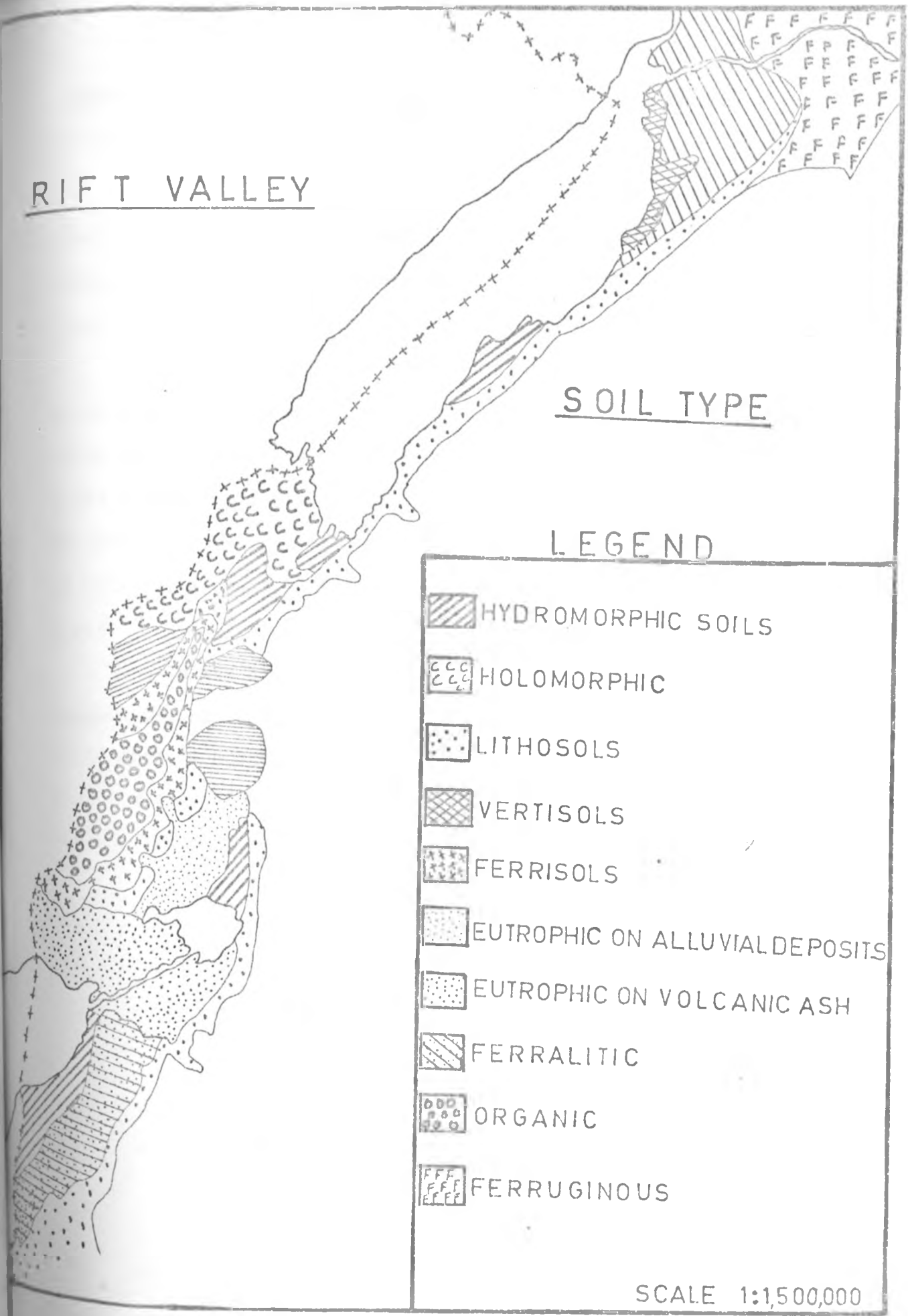
RIFT VALLEY

SOIL TYPE

LEGEND

-  HYDROMORPHIC SOILS
-  HOLOMORPHIC
-  LITHOSOLS
-  VERTISOLS
-  FERRISOLS
-  EUTROPHIC ON ALLUVIAL DEPOSITS
-  EUTROPHIC ON VOLCANIC ASH
-  FERRALITIC
-  ORGANIC
-  FERRUGINOUS

SCALE 1:1,500,000



<u>SEASON</u>	<u>PERIOD</u>	<u>MONTHS</u>
4. DRY	NOVEMBER TO FEBRUARY	4

The Lake Mobutu flats at around metres above sea level is the lowest and hottest part of Uganda. The Lake Amin-Lake George area at 900 metres above sea level is just a bit different. Temperatures in the Rift Valley can rise up to 32° to 35° centigrade.

The heights of the Ruwenzori mountain ameliorate the climate raising the annual rainfall to an average of about 60 inches (1500 mm). The higher portions of the mountain constantly experience a wet season while highest parts are constantly enveloped in a cloud of mist and the apex is covered in snow. Annual average rainfall at Kilembe is about 57 inches (1425 millimetres).













2.1.6 SOILS:

In the Rift Valley trough are found ferrallitic soils, vertisoils, hydromorphic soils, halomorphic soils and eutrophic soils while organic non-hydromorphic soils and ferrisoils are to be found on the slopes of Mount Ruwenzori. These are the areas where the various types of soils are to be found:-

1. On the shores of Lake Mobutu stretching from South of Butiaba (Waki river) to Victoria Nile -
Topographic vertisols .
2. Outside the vertisols stretching to the foot of the escarpment up to Victoria Nile as far as the Kabalega falls - loose sandy sediments - ferrallitic soils with a red dominant colour.
3. On the escarpment and south-east of Ruwenzori mountain - weakly developed lithosols
4. River Semliki flats (or South of Lake Mobutu)
- Halomorphic soils.

RIFT VALLEY

VEGETATION TYPES LEGEND

-
-  GRASS SAVANNAS
 -  DRY THICKETS
 -  PALM SAVANNAS
 -  DRY COMBRETUM SAVANNAS
 -  DRY ACCACIA SAVANNAS
 -  FOREST/SAVANNA MOSAICS
 -  MEDIUM ALTITUDE MOIST SEMI-DECIDUOUS FORESTS
 -  MOIST THICKETS
 -  MOIST COMBRETUM SAVANNAS
 -  HIGH ALTITUDE FOREST
 -  HIGH ALTITUDE MOORLAND/HEATH
 -  PERMANENT SWAMP

SCALE 1:150 000

5. Kaiso, Ntoroko, Middle Wasa River area, North Shores of Lake George and South of Lake Amin - Hydromorphic soils.
6. Mubuku - Kasese area - ferralitic soils on sandy sediments with a dominant yellowish colour.
7. Between the foot of Ruwenzori mountain, Lake Amin, Lake George and South of Kazinga Channel - Eutrophic soils on volcanic ash.
8. The lower Ruwenzori slopes including the Kilembe area - Humic ferrisols of high altitudes.
9. Higher up on Ruwenzori - organic non-hydromorphic soils of mountains.
10. Bundibugyo area - mainly sandy clay ferralitic loams.

2.1.7 VEGETATION:

The Rift Valley is a dry savanna area. Both the Lake Mobutu flats and Lake Amin and Lake George flats are covered by several types of savanna vegetation with grass savanna vegetation being the most dominant. The Ruwenzori has three major types of vegetation - High altitude moorland and heath at the top; High altitude forest on the middle slopes and forest/savanna mosaics on the lower slopes. The locations of the various types of vegetations is as follows:-

1. Stretching from Waki River south of Butiaba to the escarpment and then northwards to near Victoria Nile - Dry thickets.
The same type of vegetation is found again around the Tonya-Kaido area.
2. Around the Waiga and Waisoke river estuaries - Dry Accacia savanna.
Again on the south-eastern footslopes of Ruwenzori.

3. (i) Outside the dry thickets of area one and stretching northwards and eastwards -
(ii) Stretching through the south Bunyoro District Rift Valley Section to Ntoroko area -
(iii) Kasese - Lake George and Lake Amin - Kazinga Channel area -
(iv) South of Lake Amin to Ishasha stretching southwards and eastwards - grass savannas.
4. The Semliki river areas south of Lake Mobutu - Palm savannas.
5. On the Escarpment especially in Bunyoro - dry combretum savannas.
6. Swampy areas on the Southern shores of Lake Mobutu where the Semliki makes the Uganda-Zaire border, west of the palm savannas, north of Lake George and south east of Lake Amin - Permanent swampy vegetation.
7. Between River Semliki and the Bundibugyo - Fort Portal road and between the Ishasha-Katuguru road and Katunguru-Bushenyi road - Medium altitude moist semi-deciduous forests.
8. Towards the Peak of Mt. Ruwenzori - high altitude moorland and heath.
9. Medium slopes of Mt. Ruwenzori - high altitude forests.
10. Lower slopes of Ruwenzori - forest and savannas mosaics.

FORESTS:

The only forest areas of some mention are the Semliki forest and the Ruwenzori slope forests. However, the

Ruwenzori forests cannot be put to any commercial use, their role only being protective.

GRASSES:

The two major grasses of the Rift Valley are Themeda triandra and Hyperrrhenia SPP. Themeda triandra dorminates the Lake Mobutu flats when Hyperrrhenia SPP dorminates the Lake Amin-Lake George flats. The Ruwenzori slopes are covered by Pennisetum Purpureum.

2.2 NATURAL RESOURCES:

2.2.1 Wildlife:

The Rift Valley is greatly endowed by a diversity of faunal speciation which is typical to the arid grassland of the savanna. The Lake Mobutu flats and Lake Amin - Lake George flats are the two major game habitats of Uganda. On the northern parts of Lake Mobutu where the Kabalega National Park and the Bugungu - Bukumi controlled hunting area are, the dorminant animals are: Elephant, buffalo, Hippopotamus, Kob, Waterbuck, Lion, warthog, rhinoceras, leopard, oribi, jackson's hertebeast.

South of Lake Mobutu in the Semliki, Toro Game Reserve area the major animals are: Jackson's Hertebeast, Lion, elephant, kob, warthog and buffalo.

In the Lake Amin, Lake George Kazinga Channel area, the dorminant animals are: elephant, buffalo, waterbuck, kob, hippopotamus, lion, warthog.

On the Ruwenzori slopes the following animals are to be found; chimpanzee, chewotain, pigmy antelope, red forest duikar, elephant and buffalo.

The wild resources are managed by the Uganda National Parks and the Game Department of the Ministry of Animal Resources.

In the Rift Valley the wildlife is protected and controlled in two National Parks (Kabalega and Ruwenzori), Bugungu-Sukumi controlled hunting area, Tonya-Kaiso Game Reserve, Toro-Semliki Game Reserve, Kyambura Game Reserve and other adjacent protection areas where the animals can migrate. The National Parks and the Game Department undertakes the following responsibilities:-

- (1) To manage and study the fauna and flora communities in order to achieve a balance in the various ecosystems,
- (2) to arouse the awareness of Ugandans to the importance of wildlife conservation for recreational, economic, scientific and cultural purposes,
- (3) to completely protect some endangered species of mammals and birds in specified areas,
- (4) to control hunting to ensure that there is no over-exploitation of any species,
- (5) to protect the public from animals which destroy life or crops,
- (6) to enhance the contribution of wildlife to national economic development.

2.2.2 Fisheries:

For the Rift Valley, there are four major fishing sources - Lake Mubutu, Lake Amin, Lake George and the River Nile. The four places are not only significant for the rift but they even play a big role and share more than half of the fishing grounds of the whole country.

Infact fishing is a major economic activity for most of the human groups settled in the Rift Valley. Most fishing is individual

business, though there is a company organization known as "The Uganda Fish Marketing Company Limited" on Lake George.

In addition to the Lakes and Nile fishing, there is also fishing on some other small rivers. Trouts are stocked in the streams of Mt. Ruwenzori.

The fishing responsibilities in Uganda and, therefore, in the Rift Valley also, fall under the Department of Fisheries. The responsibilities of the Department in the Rift Valley can be summarised as follows:-

- (1) The improvement of fish landing and marketing facilities.
- (2) The expansion of the programme of introduction of new fish species in lakes.
- (3) Quality control including the study of pollution and the effect of pesticides on fish.

2.2.3 Minerals:

The known mineral resources in Uganda is not large.

Therefore, even the Rift Valley does not have much to offer (at the moment). As it is for the country, we can also say that the full mineral potential of the Rift Valley is not yet known. Nevertheless, the most significant mineral exploitation, that of copper, is found on Mt. Ruwenzori in the Rift Valley. Copper is the third foreign exchange earner of Uganda following coffee and cotton. The production is maintained at 16,000 to 17,000 tons, which is determined by the smelter capacity at Jinja. Together with the blister copper, pyrite is extracted. A plant to extract cobalt and sulphur from the pyrite is proposed. The pyrite is stock-piled at Kasese.

Next to the copper area there is the quarrying of lime between Kasese town and Muhokya Trading centre. There are two quarries in operation today. The lime is sent to Kampala for farther processing.

The salt industry has been of major standing in Toro and Bunyoro. In Toro the salt has been worked at Katwe and in Bunyoro at Kibiro. The salt business is mainly individual, but the native government of Toro used to control the Katwe salt industry much more than the native government of Bunyoro controlled salt production at Kibiro. In the record year of 1955 the salt industry earned £50,000 for the native government.

There is production of cement at Hima which started in the recent years.

Sand on the Lake shores is another mineral which can be put to farther use in the future. At the present it is used in the building industry.

There is also quarrying of rocks and murrum to be used in building of roads.

2.2.4 Arable Land:

The Rift Valley has a hot climate with intense dry seasons. The soils are mainly derived from sediments. Both the climate which determines the moisture content and the nature of the soil go a long way to determine the productivity of an area. The climate of the Rift Valley because of its high temperatures is not very conducive to favourable arable production. Thus most of the Rift Valley because of sandy soils and poor climate is not good arable land. However, the Ruwenzori mountain because of its heights has ameliorating effects on the temperature and the soils too are favourable for good agricultural productions. Thus the Ruwenzori slopes are the most favourable areas for arable purposes. In the Lake Amin-Lake George areas the volcanic soils are also good for agriculture though the climate may not be up to very appreciable type. The lake Mobutu flats are the worst in terms of arable land for the lake Amin-Lake George depression because of its elevation is not as badly off.

2.2.5. Water Resources:

The climate of the Rift Valley Per se is uncondusive for preservation of moisture for the evaporation rate is very high because of high temperatures. However, there exists in the area a good occurrence of water bodies. There are three fresh water lakes - Mobutu, Amin and George in the area. There are such big rivers as the Nile and Semliki. From the north the significant rivers are:-

Lake Mobutu - Rivers Nile, Waiga, Waisoke, Souso, Waki, Wambabya, Nkusi, Muzizi, Dura or Wasa and Semliki.

Lake Amin & Lake George - Rivers Semliki (again), Mubuku, Nyamwambe, Nyamugasami, Lubilia, Kazinga Channel, Nyamweru, Nchwera, Chiruruma and Ishasha.

The management of water resources is shared between the Water Department for surface water and the Geological Survey Department for ground water, however, both of which fall under the same Ministry of Mineral and Water Resources. For areas where there is high stress, the Department of Geological Survey has provided boreholes. Thus most of the rural population draws most of its water from available surface water sources, and some from boreholes. Only the towns of Kilembe and Kasese have piped water in the area. Mubuku resettlement scheme utilizes the waters of River Mubuku for irrigation. There is no other area where water is used substantially for irrigation. Although a number of swamps exist, swamp reclamation is not an activity of the Rift Valley. Except for the hydro-electric scheme which had been proposed at Kabalega falls, the only utilization of water for power purposes is at Mubuku. The small hydro-electric station provides part of the power requirements of Kilembe mines.

2.2.6 Forestry:

Forest resources in the Rift Valley are very limited. The only major forests are those of Semliki forest which is an extension of the Ituri forest of the Zaire basin and the forests of Mount Ruwenzori slopes. Non of the two forests are of commercial value to the Government. In rural areas the availability of firewood for fuel makes the absence of clusters of trees from the Rift Valley critical especially when one has to consider the National Park regulation of not collecting firewood from National Parks and Game Reserve areas.

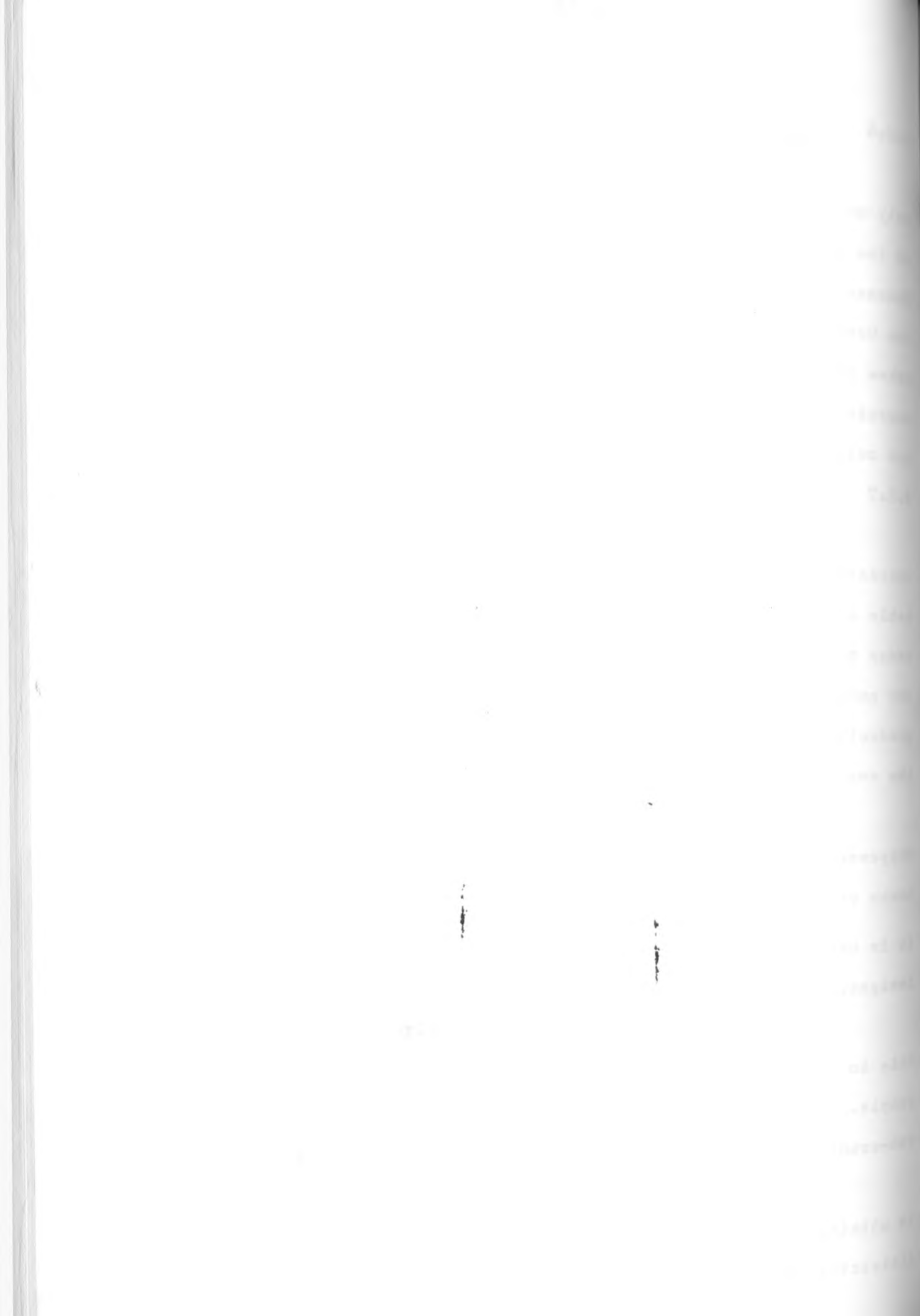
2.2.7 Human Beings as a Resource:

The human population is a resource and has similar characteristics to other resources. It grows, is renewable, substitutable and is structural in composition. It uses other resources in order to survive. Human beings are essential in terms of manpower - the number of able bodied people who can be utilized for economic production. Therefore, the people who constitute the work force are the most important.

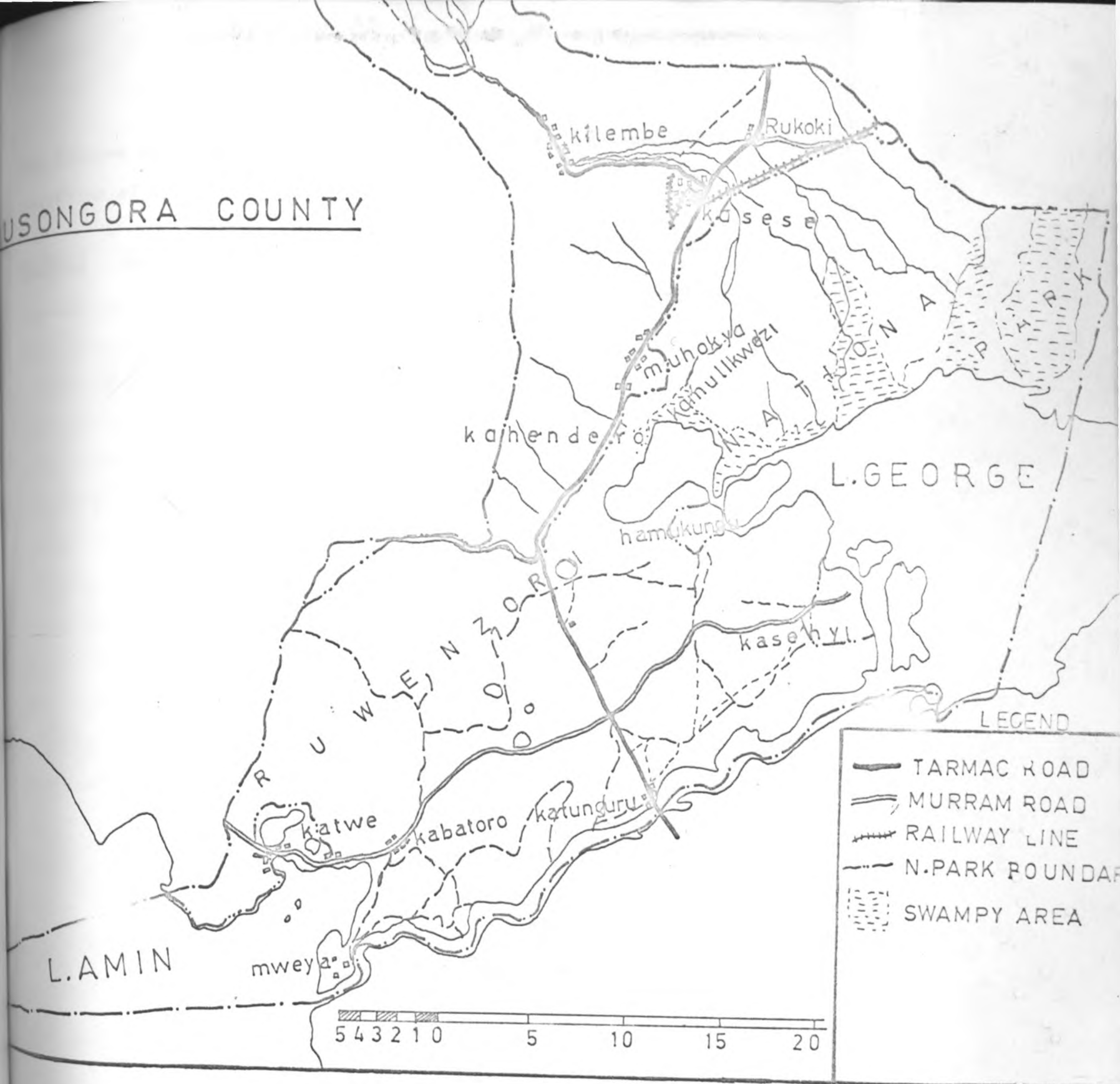
There is a close relationship between population number and manpower, though the two are not synonymous. Data for analysis of the human resource at the local levels as sub-counties is a bit sketchy. It is hoped that the district figures quoted below will give some insight.

The total population of the Rift Valley from the Victoria Nile to the Kigezi border in the south is estimated to be 260,327 people. This has been arrived at by adding population numbers at sub-county levels.

Other demographic data at sub-county level is very difficult to obtain. The figures quoted below are those of Bunyoro and Toro districts, prior to the administrative reorganization of 1971 .



USONGORA COUNTY



- LEGEND
- TARMAC ROAD
 - MURRAM ROAD
 - RAILWAY LINE
 - N.PARK PONDAGE
 - SWAMPY AREA



The figures are quoted from B.W. Langlands Book - "The Demographic Condition of Uganda as a Developing Country".

TABLE I DEMOGRAPHIC CHARACTERISTICS OF WESTERN PROVINCE: 1959.

	BUNYORO	TORO
Population Density 1959	27	73
%age Annual Natural Increase 1948-1959	0.7	1.8
Crude Birth Rate	32	41
General Fertility Rate	144	194
Death Rate	25	23
Infant Mortality	180	170
Population under 16 years	35.4	45.8
%age of Adult males to Adult females	42.3	-0.6
%age of Employees by District of Birth 1965	3.8	5.5
Actual Annual %age increase	1.4	2.7
%age of Population - Male	51.2	49.9

SOURCE: B.W. Langlands: "The Demographic Condition of Uganda as a Developing Country".

Occasional Paper No. Makerere University -
DEPARTMENT OF GEOGRAPHY.

BUSONGORA COUNTY:

Busongora County had a total population of 40,596 people by 1969 census-- of the total 31,687 was a rural population and 8,909 an urban population. The population was distributed in localities as follows:-

TABLE II 1969 BUSONGORA POPULATION BY SETTLEMENT AND SEX

SETTLEMENT	MALES	FEMALES	TOTAL
KATWE	2,960	2,036	4,996
KASENYI	609	313	922
HAMUKUNGU	640	360	1,000
KATUNGURU	398	322	730
MUHOKYA TRADING CENTRE	538	297	961
REST OF MUHOKYA	1,697	952	2,649
KASESE	4,135	3,078	7,213
RUKOKI	2,514	2,256	4,769
KILEMBE	10,355	6,797	17,152
TOWN			1,696
PARISH			16,456
KAHENDERO	122	82	204

SOURCE: Report on the Population Census 1969. Volume I. The population of Administrative areas. Statistics Division Ministry of Planning and Economic Development Nov. 1971.

3.1 LAND USE:

The major land use activity of the Rift Valley is nature conservation with the main one being the conservation of wildlife. In north Bunyoro this takes place in the Kabalega National Park and Bugungu - Bukumi Game Reserve. Kabalega National Park is 4,033 square kilometres. In Semliki District the animals are conserved in the Toro and Semliki Game Reserves. In the Lake Amin-Lake George area there is Ruwenzori National Park which is 1,987 square kilometres. There are other small animal conservation areas like Tonya, Kaiso, Buukuku,

Kazinga and Kyambura.

The second activity of conservation is forest reserves. These areas are the Semliki forest reserve and Ruwenzori slopes, forest reserves. On Mount Ruwenzori all area above 7000Ft (2000metres) is prohibited from settlement and therefore meant for conservation purposes.

The second major land use activity is agriculture including livestock. This can be divided into two types. (1) Grazing with scattered cultivation to be found on Lake Mobutu flats especially in the Bugungu and Butuku areas. (2) Mixed agriculture with both annual and perennial crops and grazing. This is to be found on the Ruwenzori slopes in the counties of Bukonjo, Busongora and Bwamba.

The area can also be sub-divided into rural and urban land use types. The only major urban centres in the Rift Valley are Kasese and Kilembe both of which have an urban area of less than 5 square kilometres each. In addition there are other small trading centres like Katwe, Kabatoro, Katunguru, Muhokya, Bundibugyo, Ntoroko, Butiaba (which was once a big centre in Bunyoro), Buliisa and Wanseko. The rest of the area is rural land use or unused.

ECOLOGICAL CONDITIONS:

An exercise to determine the ecological conditions of Uganda was undertaken by the United Nations Mission to Uganda to prepare the groundwork for a regional planning exercise. The work divided Uganda into five ecological zones.

- Zone 1 - Soil fertility high.
Rainfall generally more than 1200 millimetres per annum.
- Zone 2 - Soil fertility medium to fair.
Rainfall generally more than 1200 millimetres per annum.
- Zone 3 - Soil fertility fair to low.

Rainfall generally less than 1200 millimetres per annum.

Zone 4 - Soil fertility low to negligible.

Rainfall generally less than 1100 millimetres per annum.

Zone 5 - Soil fertility negligible to Nil.

Rainfall less than 800 millimetres per annum.

In addition, the areas of Mount Masaba and Mount Ruwenzori were considered to be of their own particularistic ecological conditions.

The Rift Valley falls into four various ecological types according to the above analysis. Ruwenzori District falls into the Zone 2 type of ecological condition. Ruwenzori Mountain has its own mountain ecological type. The Semliki river Park south of Lake Mobutu falls into the zone 4 type. Rest of the Rift Valley floor in Semliki District and on the other Lake Mobutu flats falls into zone 3 of fair to low soil fertility and rainfall of less than 1200 millimetres.

CHAPTER III

BUSONGORA COUNTY AS A CASE STUDY:

RESOURCE BASE:

Definition:

A resource can generally be defined as anything that is derivable for the use of man from any part of the universe. However, political regions imposed on society as arbitrary areas with hard and fast boundaries induces man to put an ultimate claim on the resources that are contained within his area boundaries. Trade and related organizations often make it possible for man to use resources outside their political areas. A resource base of a given area includes all the things physical and biological that may be put to use by man for his improvement and maintenance. These may be said to include:-

- | | |
|---|------------------------|
| (i) Land surface | (viii) Rocks |
| (ii) Soils | (ix) Water |
| (iii) Air | (x) Arable agriculture |
| (iv) Vegetation | (xi) Animal husbandry |
| (v) Wild animals | (xii) Human beings. |
| (vi) Insects and their invaders animals | |
| (vii) Fish | |

Below the resources of Busongora county are analysed in a more specialized form:-

RANGELAND:

Rangeland is usually land which is unsuitable for cropping or intensive forestry and where management for stock raising is a better alternative. Land is usually of marginal agricultural potential. Most of the Western Rift Valley in Uganda is rangeland with rainfall between 750 to 1000 millimetres and soils which are not regarded as sufficiently productive for intensive arable agriculture.

RESOURCE BASE

BUSONGORA
COUNTY

COPPER

IRRIGATION
SCHEME

LEMON
LIME

ELEPHANT

DEFASSA WATERBUCK

ELEPHANT

L. GEORGE

FISH

KOB SALT

HIPPO

SALT

LION SALT

HIPPO

KEY

KOB

SALT

HIPPO

BUFFALO

HIPPO

KAZINGA CHANNEL

LAND ABOVE 2000
METERS

ARABLE LAND

RANGELAND

FISHING
VILLAGE

SALT

5 4 3 2 1 0

5

10

15

20

KILOMETERS

HIPPO
LAMIN
SH

The Rift Valley depression is the rangeland of Busongora county. However the area is today not used for stock raising. In the 19th century the area was used for cattle grazing. A number of depredations led to the disappearance of the cattle in Busongora. First there were the depredations of Omukama (King) Kabalega Cwa of Bunyoro Kitara Kingdom and his warriors, the "Barasura". Some of the cattle were used to pay homage, others killed and some deserted by people fleeing to the mountains away from the hostility. This was coupled and seriously subsequented by the depredations of sleeping sickness. The colonial government responded by evacuating the entire population of the area. With the absence of human numbers the wild animals moved in in increasing numbers to colonize the area. Thus today the rangeland is used economically for game conservation. Not the entire of Busongora rangeland extent is used for game conservation. The game is controlled in the National Park, specifically excised.

4-3 RUWENZORI NATIONAL PARK SECTION IN BUSONGORA COUNTY:

5-4 Vegetation:

The vegetation of the National Park is savanna woodland. The only considerable forest area is the Kihebule local forest reserve west of Katwe in the Nyamugasani-Kayanja area. Here are found dense scrubs of capparis tomentosa, Euphorbia candelabrum, Turraea robusta and Serunga virosa with some trees of croton sacrostachyus, Serunga virosa, Acacia kirkii and Acacia Siebirianna. Another woodland is to be found north east of Katwe-Kebatoro in the crater area. There are eight craters surrounded by woods of olea chrysophylla, cordia ovelis and Euphorbia candelabrum with scattered trees of Acacia gerrardii. In the northwest of River Kamuli Kwezi is found acacia gerardii scrub and patches of acacia sieberiana woodland are found in the lower part. Another woodland is on Allika island in

Lake George. Elsewhere there are scattered thicket clumps.

The most commonest grasses are Themeda triandra, cymbopogon afronandus and imperata cylindrica. The aquatic type are hingo willows which are being invaded by pistia stratiotes and cyperus papyrus.

Most of the crater area is covered by Themeda triandra or cymbopogon afronandus/imperata cylindrica grass. Flanking the Kazinga channel is sporobolus pyramidalis grassland with many capparis tomentosa.

North of this is Themeda and imperata grassland. The Kasenyi-Hamukungu area is mainly covered by Hyparrhenia filipendula and Heteropogon contortus. The Kamulikwezi river area is extensively swampy especially along the lake shore with open patches of sporobolus rangei. West of Kyondo and Dura are tall grasses with imperata cylindrica. Much of the rest of the Kyondo Dura area is cyperus papyrus wet swampy area. Below the escarpment there is a narrow strip of Hyparrhenia and Themeda.

SOILS:

Generally most part of the Busongora Park area is covered by eutrophic soils on either volcanic ash or alluvial deposits. The area between Lake Amin and Lake George is covered by eutrophic on volcanic ash. The area north of Lake George is covered by eutrophic on alluvial deposits on the western side and hydromorphic soil in the swampy east. These soils have their own local naming. The crater area locally has Kyamotoma cretena soils with some Nyakatonzi series. The Mweya-Katunguru area has the local soils of Nyakatonzi series extending towards Chambura series in the south. The Hamukungu-Kasenyi area has soils of Nyakatonzi series but much richer in clay than other areas and are sticky and temporarily flooded in the wet weather. The Kamulikwezi river area has soils of the Kasese series or Sebwe series which are fine textured and sedimentary in origin. In the Kyondo-Dura

area are found Swembwe series sandy clay loams in the west, Subandi series loams in the east and papyrus peat in the central part.

6 Rainfall:

The Lake Amin, Lake George, Rift Valley depression have rainfall of the order of 875 millimetres to 1000 millimetres falling on 80 to 100 days annually. This rainfall varies locally. The crater area and Mweya Katunguru section has rainfall ranging from low to moderate. The crater area has very moderate rainfall. The Hamukungu-Kasenyi section is the driest part of the entire Ruwenzori National Park. Rainfall in the Kyondo Dura area is moderately high. The nature of the local climate may be described as sub-humid to semi-arid. Moisture indices range from -10 to -30.

7 Topography:

Generally the Rift Valley depression of Busongora may be described as a flat plain. However, there are local variations. The crater area north east of Katwe-Kabatoro is a hilly area with about 80 craters about 1000 years old. There are steep slopes and cliffs around some crater rims. Land rises to 1344 metres at Kyamutuma which is the highest point in the park. The Mweya Katunguru area is greatly dissected with ridges in the south and a broad plain, sloping gently up to the crater foothills in the north. The Hamukungu-Kasenyi area is a levelled area generally with gently undulating ridges and valleys. The strip along the northwest edge of Kamulikwezi river slopes gently. The lower part of the river area is an almost level silty plain with traces of many old river courses. Topography in the Kyondo Dura area varies quite a lot.

8 Wildlife:

This section is mainly concerned with the large mammals as information on flora can be found above and information on other fauna

is lacking. The wild animals in Busongora county cannot be said to be living in the National Park area only but also do migrate out to some unoccupied areas like parts of Ruwenzori mountain. The Lake Amin, Kazinga channel, Lake George area is known as being rich in game. Large herds of elephants and buffalo are to be found throughout the Park. On the Kazinga channel are to be found very large concentrations of hippopotamus. The major animals found in Busongora county include elephants, defassa, waterbucks, buffalo, hippopotamus, kob and the lion. For distribution see map. The type of African found in Busongora is of the *Loxodonta Africana Africana* species. Total population of elephants in Uganda is estimated at 30,000. The range of elephants has been reduced considerably in the last fifty years. It is difficult to give figures for the county as the animal is very migratory. The abnormally large concentrations of elephants in the Park in the recent years necessitated shooting both in interest of crop and forest protection and in order to keep the numbers down to a level which the areas concerned can safely support. The buffalo species is *syncerus caffer acquintialis*. The buffalo can often be seen in herds of up to 100 heads. The buffalo is able to live in any habitat where water can be available. The kob is often in herds ranging from 20 to several hundreds. Topi in Ruwenzori National Park are estimated at 5,000.

Human Population:

The people in the National Park rangeland zone are found in fishing villages. The fishing villages were left as traditional grounds for the exploitation of fisheries resources. When the National Park regulations were introduced three fishing villages of Katwe, Kahendero and Hamukungu were excised as legal fishing grounds. In addition to those, there are today the Kahendero and Katunguru

settlements which are regarded as illegal. By the 1969 census Katwe had a population of 4996 people, Kasenyi 922 people, Namulungu 1000 people, Katunguru 730 people and Kahendero 204 people. In addition there is the settlement of Iweya with a safari lodge for tourist accommodation, Game Department employees and their dependants and the workers of the Uganda Institute of Ecology. The major tribes of these people are Bakonjo, Banyankore, Banyoro, Baganda, Bakiga, Etoro. Some people are from Zaire and Kenya, Tanzania and Ruanda. Dura river area is today being settled by small enclaves of Ruanda migrants.

5.2.0 Cultivation:

Cultivation is not allowed by national park regulations. However, for some time there was some illegal cultivation in the Katwe area. Today there has been some agreements to allot small acres in the crater vicinity for some cultivation. The average size of the plots is one hectare, but the range is from 1 to 2 hectares.

5.2.1 Grazing of animals:

Large concentrations of the hippopotamus and the elephants population leading to overgrazing has been a subject of some investigations for sometime. The Uganda Institute of Ecology formerly Muffield Unit of Tropical Animal Ecology was started to study the habitats of the hippo and the elephants. Some cropping of the elephant and the hippo has been going on for some time in the park. The areas are affected by grazing as below. The Kamulikwezi area is generally overgrazed with heavy overgrazing near the

lake. Grazing in the Kasenyi-Mamulungu area is moderate to heavy becoming excessive near Lake George where there are large numbers of hippopotamuses. Grazing in the crater area is generally light. The Katwe zone is generally heavily grazed especially near the lake where there is high hippopotamus population. Isolated hippo populations in the Kyondo-Dura area cause rather heavy grazing though in most other parts grazing is rather light.

5.2.3 Fires:

Burning of grass during the dry season has been a traditional activity in Busongora county. Usually the Game Department authorities are opposed to burning, especially the fierce fires of the late dry season. However, there is no clear understanding of the gains or defects of grass burning in totality. In first instance the present vegetational cover of the national parks as we know it today has been very much a result of the fires. Properly managed fires in the rangeland area should be necessary. Grazing animals should benefit from burning of grass as in most cases it has been observed that this improves the vegetational cover. It is late dry season fierce fires which can be destructive to the animals and the trees, especially. The Busongora rangeland is affected by fires to the following extent. Fires are frequent in the crater area and efforts have been made to check them with fire-breaks. The fires have been most destructive to the acacia, community of the craters. Fires in the Katwe-Kabatoro area

are regular as they are in the Iweya-Katunguru zone though very rare in the sporobohos grassland near the Kazinga channel. The north-western part of the Kamulikwezi area is frequently affected by fires. Fires are less common in the wet swampy areas of Kyondo-Dura.

5.2.4 Fisheries:

Given that the total surface area of Lake Amin is estimated to be 400 square kilometres and that of Lake George is estimated to be 152 square kilometres together with Kazinga channel should make a total surface area of about 600 square kilometres. This should make an estimated catchment area of about 500 square kilometres. From the above it is estimated that the total catchment area for Busongora county alone should be at least 200 square kilometres. The total catchment potential is not known since the available figures kept are mainly those of catches in the area. The types of fish, most common in the Kazinga-Amin-George catchment area is tilapia nilotica locally known "ngege Tufmac." Other species are Bagrus, Clarias, Prosopherus, Barbus and Marmyrus.

5.2.5 Minerals:

The most economically viable known mineral of the national park rangeland area is salt. There are about 95 craters in the Busongora national park area. At least seven of these are known to contain salt. Five are in the crater area, including the historical Lake Katwe crater and two are in the Kasenyi-Hamulungu area. The Lake Katwe water contains a considerable amount of sodium. The salt has been historically worked by the local population for a long time. Lemon

lime and sand are also available.

6.1 Arable Land

The rest of the county except the land above 2000 metres is here considered as arable land though it includes the Rukoki, Kasese, Muhokya flat areas which for most part qualify as rangeland. These parts are included as arable land because the action of stock raising or game conservation on them and they are for most part used for agriculture and rural and urban settlement. The importance of arable land depends on the soil productivity of that area which in turn is a function of the climate, vegetation and the geomorphological nature of the place. Soil productivity is the ability of a soil to support an economically or food significant continuous crop growth.

6.1.1 Soil:

The soil types of the arable area are mainly eutrophic and ferrisols. Eutrophic soils on alluvial deposits are to be found on the Kasese Rukoki areas. Ferrisols of humic high altitude type are found between 1500 metres and 2400 metres mainly. They include the Kilembe ridges. Eutrophics are soils of calcium, relatively young with the top horizon rich in organic matter and in the Busongora arable section are developed on alluvium. Ferrisols are soils on a stage towards becoming ferralitic but are rather more fertile and have a better reserve of bases. The Kasese Rukoki soils are grey sand with clay and are suitable for growing cotton. The Eutrophics of 1500 metres to 2400 metres are brown gritty clay loams and sandy clay loams.

suited for growing arabica coffee. The Kasese-Rukoki soils are known locally as the Kasese series and the eutrophic as the Mulinda series. The Kasese series are ranked to be of high to medium productivity while the Mulinda series are ranked to be of medium to low productivity.

In addition to the two major types there are podsollic soils west of Muhokya between the foothill and the road between Katunguru and Kasese and north of Rukoki river between Kilembe and Kasese.

6.1.2 Vegetation:

The vegetation of the arable land of Busongora can be divided into three sections. In the east on the flat areas of Kasese-Rukoki are to be found grass savanna of themeda and in the west in the Kilembe area are found cambrehun savanna associated with hyparrhenia spp. In between the two there is dry acacia savanna with themeda.

6.1.3 Climate:

Rainfall is lower on the rift valley floor in the Kasese muhokya area where it averages 1125 millimetres. On the mountain slopes at about 1300 metres the rainfall is quite sufficient averaging about 1500 millimetres. For the rift valley floor the Ruwenzori mountains form a barrier against air and cloud movements causing low precipitation. Mean annual minimum temperatures range from about 10°C at 2400 metres to about 15°C at near Lake George in the Kasese area. Mean annual maximum temperatures at the same places average from about 21°C to about 25°C.

6.1.4 Agriculture:

Cultivation on the mountain slopes has been carried

on for a long time. It is only until recently that the Bakonjo dwellers of the slopes, have begun to descend to the rift valley floor to grow cotton. The rift valley floor with deficient rains is not very productive for plantain growing which the Bakonjo have preferred on the mountain slopes. However, cassava can thrive. On the mountain slopes the crops grown include finger millet, plantains, sorghum, potatoe, cassava, beans, groundnuts and maize. Arabica Coffee is grown as a cash crop. On the rift valley floor the government has organized mechanized agriculture at Mabul utilizing an irrigation scheme. The crops grown at Mabul include, onions, maize, groundnuts, beans, cotton lucerne, plantain and rice. The Bakonjo are known today to be exerting a high demand on their mountain slope resources as is evidenced by the long list of the waiting to join the resettlement scheme.

Livestock does not play an important role of the economy. On the mountain goats, sheep and pigs in small numbers are kept. At Mabul there are some cattle.

6.1.5 Human Population:

Settlement on the arable zone is both urban and rural. Urban settlement is in the service centres of Kasere and Filembe. There is also the small trading centre of Muhokya. Rural settlement is mainly on the mountain slopes with just scattered homesteads on the rift floor.

Ntombi has an estimated urban population of 1596.
 This estimate considers only people who may be residing
 in town. However, most of the population of Kyenjuki and
 Katiri, the two parishes which the town forms part are
 affiliated to the mining industry of Ntombi. The total
 population of the two parishes is 17,152. The population
 of Ntombi town is not given separately in census counts.
 Kasere has a total population of 7,213 people. Mubokya
 trading centre has a total population of 961 people. If
 we are to consider 50 Per cent (3,576) population of the
 Kyenjuki, Katiri parishes to be urban to the total urban
 population in the area then totals to be 15,739 people
 excluding the trading centre of Mubokya. The total rural
 population is estimated to be 15,994 from the 1969
 population figures. This figure includes the trading
 centre of Mubokya. The total population on the arable
 area is 31,733. Of these, 11,860 are aged 0 to 14 years,
 here considered dependant children. 142 are aged above
 65 years and here considered dependant elders. This gives
 a total of 11,860 people as dependants. It leaves a total
 working population of both males and females of 13,731
 people. The working population figure does not take into
 consideration the physically disabled.

TABLE: POPULATION (ILLUSTRATION FROM 1969 CENSUS FIGURES)

TYPE	POPULATION
TOTAL URBAN POPULATION	15,789
TOTAL RURAL POPULATION	15,994
TOTAL DEPENDENT POPULATION	11,360
TOTAL WORKING POPULATION	13,781
TOTAL AREA POPULATION	31,783

FIGURE 1: TRENDS SINCE 1969 POPULATION CENSUS
FIGURE .

6.1.6 Minerals:

There are two minerals economically exploited today in the arable area zone. These are copper and lemon lime. The copper is mined at Kilembe. The Kilembe ore lies within the stratification of metamorphosed rocks known as the Kilembe series and occurs within the older precambrian gneisses which cover the larger part of Uganda. The series has been followed for a considerable distance, westwards into Zaire. In Uganda, although showings of the copper have been found at many places, it is only at Kilembe that the copper has been found in economically exploitable quantities. The ore layer varies in thickness from 13 to 22 metres in places down to a narrow band of minerals only 2.5 or 5 centimetres thick. The copper reserves at Kilembe were estimated to be exhausted by 1976. However, recent survey have showed another extent which is estimated to last eight to nine years.

The potential extent of ice on time is not known. It is quarried at two places near Ruhohya where it has been spotted from surface observations.

7.1 LAND ABOVE 2000 METRES:

The land above 2000 metres is considered as being too high for economic utilization. All such land in Uganda is designated as forest reserve. All such land is, therefore, protected from vegetation destruction in order to preserve the flow of water in rivers and to protect the river sides from erosion. However, the Busongora land above 7000 metres has no economically exploitable forest resource potential and its only use is in protection for water conservation. In the rivers trout can be stocked for angling. The land may also be used for sheep rearing if found acceptable. In as far as mountaineers are interested in such high altitudes the place may also be considered as part of tourist attractions especially since it is found on the famous mountains of the moon. The soils between 2400 metres and 3,000 metres on Ruwenzori mountain are locally known as Kyensabo series which are of peaty loam over dark-brown sandy clay loam. Soils above 3000 metres are of Bajuku complex which constitute of peat over rock or moraine. The vegetation of the area is high altitude, moist montane forest of Harenia-Davsonia and Ericaceae-Stepha. The land above 2000 metres is constantly covered in clouds with frequent frost. Mean annual temperature is below 12^o centigrade.

8.1 LAND USE ESTIMATES FOR BUSONGORA COUNTY.

Professor Langlands of Makerere University has done land use estimates for counties of Uganda and gives these figures for Busongora county:-

Area of Game Conservation	327 sq. Kilometres.
Area above 2000 metres	83 sq. Kilometres.
Area assumed cultivated	83 sq. Kilometres.
Area urban use	6 sq. Kilometres.
Area of open water	279 sq. Kilometres.
Area of Permanent Swamp	24 sq. Kilometres.
Total County Land area	1191 sq. Kilometres.

9.1 RESOURCE DEVELOPMENT AND UTILIZATION IN BUSONGORA COUNTY.

Uganda can be divided into squares for example 100 square kilometres. The distribution of economic activities would vary from square to square and different patterns would emerge. It is such differences in the spread of economic activities over the Country's Spatial Structure that is the basic concern of theories and practices of regional planning and development.

Instead of such even squares as 100 square Kilometres squares we concern ourselves with more convenient area units that have developed through man's history of Spatial organisation. Such units can be administrative, functional or otherwise. In this case a county, and that of Busongora has been taken as a convenient small unit

for analysis of the spread or location of economic activities and their inclusion in comprehensive regional planning and development.

The variation of the economic activities is a function of the distribution of economic investments both public and private over time. It is the location and concentration of public and private investment that is the nature of the spatial structure of a given economy. The areal distribution of the investment is very much influenced by the availability of natural resources, among others. Before the exploitation of the resources themselves take place, the prime consideration is the benefits that will accrue to the people for whom the investment is intended. Therefore, one prime motive in the exploitation of resources is Maximization of benefits or profits either for the public or private individuals.

The exploitation of the resources takes place over the land which supports them, and therefore, has an effect over the earth surface. Various of man's activities leave their mark on the earth's surface. It is these "marks" and their variations that in planning we are accustomed to recognizing as landuses. The landuses emanate from the distribution and concentration of man's economic activities.

The purpose of physical planning is to derive the most convenient spatial structure including aesthetic considerations for the best patterning of man's economic activities; that is to say for man to derive the maximum benefits from the structure. Over the country, economic

planning is mainly concerned with the selection of the resources that shall be exploited and how. Physical planning tries to see to that wherever the economic activities take place, the areal units they operate on and interactions between them should be of the best convenience.

Henceforth, this thesis shall be concerned with the distribution of the exploitation of resources in Busongora county, the resultant landuses, and how best the spatial structure that has developed can be organized to allow for the maximum benefits to accrue to both public and private investors. The thesis, therefore, is henceforth concerned with development of resources, landuse and integrated regional development in Busongora county as part of an areal system of the rift valley.

9.1.1 Wildlife conservation and management

The conservation and management of wildlife takes place in clearly defined boundaries. Therefore, the activity of wildlife conservation takes place in Busongora county in a definite landuse zone. This is the Ruwenzori National Park, which though extends farther south than the county itself. The National Park is 69.4 per cent of the total land area of Busongora county. The portion of Ruwenzori National Park which is in Busongora county is 827 square kilometres. The National Park has a total land area of 1987 square kilometres. Therefore, Busongora county has 41.62 per cent of the share of Ruwenzori National Park.

Queen Elizabeth National Park which is today Ruwenzori National Park was first declared as Toro Game

reserve on 12th August 1909. This was followed by the second declaration of the Lake George Game reserve on 10th September 1925. The two game reserves were the precursors to the present Ruwenzori National Park.

Up to the first decade of this century, the areas which today comprise Ruwenzori National Park were relatively densely populated. However, for a time the people of the area had suffered from the depredations of 'Omukama' (King) Kabalega Gwa of Busongora Mitara Kingdom- and his warriors the 'Barokora'. This was coupled and seriously subsequented by the depredations of sleeping sickness. The entire human population was evacuated by the colonial government, therefore. Following the operation evacuation the Game reserves were declared. When the Game reserves were declared the interest of game became paramount. No cultivation was allowed and no permanent settlers were to move into the areas of game. However, traditional grounds for less conflicting uses like grazing or fishing, is still allowed in game reserves. Thus the fishing villages of Lake George, Kazinga Channel and Lake Amin and the Salt settlement of Iatwe happened to resist efforts for total evacuation. Thus there are today in Ruwenzori National Park and in Busongora county too fishing villages which are within the zone of the National Park but are maintained under license for families who resided in the area before the introduction of the regulations of the present day national park. The two activities of game conservation and fishing pose problems of landuse conflicts.

The wildlife resources in Busongora county like other parts of Uganda are managed by the Uganda National Parks Trust and the Game Department of the Ministry of animal resources. The Trust is responsible for all current operations in the Park and provision of Capital facilities except lodges, major airfields and the main roads transversing the Park. The Trust finances its activities partly from the park entrance fees and partly from charges for sight seeing tours on its launches and vehicle hire services. In addition it receives annual subscriptions from the government for both recurrent and development expenditures. The Game Department is responsible for the protection and control of the game. The Uganda Hotels limited, a subsidiary of the Uganda Development Corporation is responsible for promotion of hotels and lodges. There are two hotels in Busongora county—Hotel Margherita on the Kasese Kilembe road and Kweya Safari Lodge at Kweya. In the Park, there is the Uganda Institute of Ecology which studies wildlife habitat, health and related problems. In addition the government has proposed a habitat Management Unit to Implement the findings of the institute of Ecology.

9.1.2 WILDLIFE RESOURCE UTILIZATION

The wildlife is conserved and managed on the basis that the people of Uganda and hence those of Busongora too will derive recreational economic, Scientific, and cultural gains from it. Hitherto it is outstanding. the economic benefits that have been more Economic benefits are largely from tourism.

Tourism benefits the economy through the expenditure incurred by visitors within the country. The money spent by tourists provides a source of income to those employed in hotels, restaurants and other enterprises offering services to tourists. On such basis, therefore, tourism contributes to Uganda's Gross Domestic Product. The maximisation of benefits from tourism will be attained from further investments and promotion of the tourist industry. The promotion of tourism is, however, a difficult and expensive task. The task in the country is entrusted to the Uganda Tourist Board which was created in 1969 by an Act of Parliament to coordinate the development and promotion of tourism which was being handled by a variety of agencies. The benefits accruing to the country from tourism can be summarized as follows:-

- (1) Earning of Foreign Currency.
- (2) Stimulation of General National Growth.
- (3) Redistribution of regional economic activities.
- (4) Redistribution of regional economic activities.
- (5) Redistribution of the country's Purchasing Power.
- (6) Increase the Productivity of Marginal land.
- (7) Enhances international understanding.
- (8) Tourists may recognize opportunities for investment in the country.

Scientific benefits are expected in the form of research. At present the Uganda Institutes of Ecology is involved in research in Rwenzori National Park. Other researches like botanical, Zoological and pre-history

Table III (A) Visitors to Ruwenzori National Park.

Year	1966	1967	1968	1969	1970	1971	1972
Adults	6967	9303	10777	13503	15667	21233	20271
Children	2325	2339	3566	5410	5306	7194	6091
Total	9292	11700	14343	18913	20973	28427	26362

Table III (B) Visitors to all National Parks in Uganda.

Year	1966	1967	1968	1969	1970	1971	1972
Adults	27234	33428	37396	54171	63306	67734	63517
Children	7847	8966	11788	16935	19178	17639	73625
Total	35171	42394	49184	71106	82484	85373	73625

are also possible.

The role of National Parks in attracting local people for recreational purposes is still very limited. This may be due to limited finances, familiarity with the local environment, limited knowledge about national parks and the African way of life.

By increased visitors to local areas, one may expect diffusion of modernization effects into local cultures, though at a small scale. However, it remains to be said here that direct cultural benefits from conservation of wildlife are minimal. The entertainment of tourists by local people by traditional dances is to be doubted whether it is a concerted effort to benefit or improve culture. Nevertheless, in national park areas there may be preserved some historic things which are part of the history of the local peoples' development. Such are like the Lugard Fort near Lake George and the fossil site at Iwoye.

9.1.3 Development of fisheries resources.

The major fishing grounds for Busongora county like any other counties in the area are Lake Amin, Lake George, and Kasimba Channel. Uganda has a total water surface area of 35,340 square kilometres. Though not all the water surface area is important for fishing potential, at least most than 60% of the area must be of consideration. The Lake Amin water surface area in Uganda is estimated to about 400 square kilometres and that of Lake George about 152 square kilometres. Together they make 552 square kilometres. That figure excludes Kasimba Channel which is part of the "Fishing Pool of the area".

The traditional methods for catching fish included hooks, spears, basket traps and similar devices and fish poison. Gill nets were imported in Uganda in 1910 for use on Lake Victoria but soon spread to other parts of the country. Thus like in the whole country, gill netting is now the most common method of catching fish in Busongora county. Present day methods include beach seining, basket trapping and long-lining in addition to gill netting.

The Department of fisheries of the Ministry of Agriculture and Animal Resources encourages the use of Powered Canoes. It runs a subsidy Scheme for the benefit of fishermen to get powered canoes. Some boats are, therefore, Power Propelled though the majority are hand propelled.

Instructions for boat-building are given at

Kichwamba Technical College near Fort Portal. There is a yard where boats can be purchased, at Katwe.

There are four recognized fishing Villages in Busongora county and these are:-

- (1) Katwe- on Lake Anin
- (2) Kasenyi- on Lake George
- (3) Hamukungu- On Lake George
- (4) Kahendero- on Lake George

In addition there is Katunguru which is a settlement on both sides of Kazinga Channel. However, the Katunguru on Busongora side is not a recognized fishing settlement. Katwe, Kasenyi and Hamukungu are recognized or licensed fishing villages with defined boundaries.

The nutritive value of fish is equal or more than that of beef. Busongora as a county where livestock production is a very minor activity fish catching is very important indeed. Fish is rich in protein and has fat, mineral matter and vitamins. The vitamins in fish are 85 to 95 percent digestible. The most common fish caught in the Lake Anin - Lake George area is Tilapia known by the local name as ngere. Of the various types of tilapia, tilapia nilotica which is known in Uganda areas as Tufnac is the most common. Other types include barrus, claras, protentorus, barbus and boravrus.

Table IV: Names of various types of Fish

<u>Scientific name</u>	<u>Local name</u>	<u>Luganda</u>
Tilapia nilotica	Engege	Ngege Tufmac
Bagrus	Semutundu	SSemutundu
	or	
	Mboju	
Clarias	Ensonzi	Male
Protopherus	Emanba	Mamba
Barbus	Enlayu	Kisingja.

To give a fair comparison below is given the protein percentage of various other types of foods that can be obtained in the county:

Table V: Protein percentage of various types of Foods.

<u>Product</u>	<u>Protein %age of whole</u>
Tilapia Fillet	83
Finger millet	6-7
Sorghum	10
Maize	10
Cow peas	25
Ground nuts	27
Natchka	1 to 1.5
	0.6-1.1
Cassava	1.0

Source: Jiwani, S. "Freshwater Fisheries of East Africa.

Rural Development Research
Makerere University. Kampala,
1972.

The total catch of fish in the Lake Anin, Lake George, Kazinga channel area is given below.

Table VI: Tonnage of Landed Fish in past years.

<u>Year</u>	<u>Tonnage of Landed Fish</u>
1962	12,071
1963	12,031
1964	10,232
1965	12,577
1966	12,880
1967	12,924
1968	13,000
1969	11,826
1970	9,960

Source: 1971 Statistical Abstract. Ministry of
Planning and Economic Development.
Statistics Division, Entebbe - Government
Printer.

Fish from Lake Anin, Lake George, Kazinga channel area is sold smoked, salted, fresh and frozen or just fresh. As an attempt by government to improve fish marketing in the area it established Tufmac (The Uganda Fish manufacturing Company) a parastatal body under the Uganda Development Corporation. Tufmac is located at Kasanyi and processes approximately 16,000 fish per annum. In 1967 it processed 321 tons of frozen whole fish and salted fish; 211 tons of frozen fillets. Uganda Fish Fillets Limited, were started. Since fillet marketing requires higher capital investments, the two companies buy most of their raw materials from Tufmac factory at a pre-arranged price and weight basis. However, all the three companies operate under capacity, and Tufmac seriously under capacity. The problem is that the catch area does not warrant the establishment of three competing companies. Tufmac also suffers from lack of direction, effective control and efficient operation. Many times the company has failed to make profits to prove the worth of the tax payer to continue to support it.

In addition there are local individual fish mongers. There operate with their own small capital and mainly sell smoked fish. The Zaire market for salted fish fell during the 1960's due to currency exchanges and political upheavals. Today most of the fish is sold in Buganda areas Southern Province and Western Province, especially in urban centres. Methods of transport include bicycles, motor cycles, trucks and lorries, bus and rail.

The Department of Fisheries of the Ministry of Agriculture and Animal resources is responsible for the

development of the fisheries resources in the Lake Amin Lake George area as well as in other parts of the country.

Government help is mainly in the following form:

- a. Give subsidy on boats.
- b. Give training to fishermen.
- c. Arrange radio talks.
- d. Promote "Eat more fish" campaign.
- e. Try to catch net thieves.
- f. Collect market dues, issue canoe licences and restrict the use of small gill nets.

Angling

In addition to fishing in lakes there is angling on the streams of Mount Ruwenzori. Some streams have been stocked with trout. However, angling is much more of a sport than an economic activity and hardly an African activity.

9.1.4 Fisheries Resource Utilization

The first major benefit of the fishing activity is the provision of food. Fish is a very important source of animal protein. The country's current consumption is calculated at 14 kilograms per capita per annum. This makes it nearly twice that of beef. In Busongora county itself beef production is very low. The total number of cattle in the county is estimated to be 1,695 heads. The total human population is 40,596 people. Fish catch in the county averages about 4,000 metric tons per annum. Fish is exchanged for food and money from the fishing villages to the rest of the county.

Secondly, fishing as an economic activity is an

income earner both for the private individuals involved in it and the government. For the years 1966, 1967 and 1968 the value of fish caught in the Lakes Amin and Lake George (but excluding Kazinga channel) was given as follows:

Table VII: Value of Cured Fish

Lake	Year	Weight in Tons	Value to fishermen in pounds.
Amin	1966	5,889	152,966
George	1966	4,245	114,911
Amin and George	1967	11,230	443,905
Amin and George	1968	12,805	447,969

Source: Jiwani S., "Freshwater Fisheries of East Africa." Rural Development Research, Makerere University, Kampala, 1972.

Fishing provides income both to the private individuals who are involved in the catching and those who are involved in the fish mongering that is the marketing. Government gets its income from taxes, marketing dues and licences.

Tufmac shells fish even in markets outside the country - mainly the rest of East Africa. Some fish is sold to Zaire. Therefore, the third economic benefit from fishing is that it earns foreign currency.

Letting alone the earning of income we can also say that fishing provides employment to those involved in it. Besides, the local men who are involved in the catching and marketing, there are the employees of the Department of Fisheries and the Uganda Development Corporation employees working with Tufmac.

Fishing also stimulates the general development of the area where it is based. In addition the activity itself adds to the list of tourist attractions in the area.

9.1.5 Development of Mineral Resources

Busongora county like any other part of the country suffers from the ignorance that the full extent of the mineral potential is not known. Mineral exploration in the country has been conducted by the government for many years and is still continuing.

The country's major mining activity, the exploitation of blister copper is found in Busongora country, at Kilembe. Copper is the third foreign exchange earner for the country besides coffee and cotton. Until recent moves by the government to completely take over the Kilembe mine completely, the company was owned 70 per cent by the Venture of Canada, 10 per cent by the Uganda Development Corporation and 20 per cent by the Colonial Development Corporation.

The Kilembe copper ore lies within the stratified of metamorphosed rocks known as the Kilembe series and occurs within the old Pre-cambrian gneisses which cover the larger part of Uganda. The series extends westwards for a considerable distance into Zaire.

The ore layer varies in thickness from 18 metres to 21 metres in places down to a narrow band of minerals only 2.5 centimetres or 5 centimetres thick. Nowhere, except at Kilembe has the ore been found in economically exploitable quantities. The whole of the Kilembe ore area is divided into separate mining regions such as northern deposit, eastern deposit and Bukangama deposit.

Together with the blister copper, Pyrite is extracted. The ore which is 2 per cent copper, also contains cobalt. Today is pyrite is stock piled at Kasese. A plant to extract

cobalt and sulphur from the pyrite has been proposed. The production of copper is maintained at 16,000 to 17,000 tons which is determined by the smelter capacity at Jinja.

Previously, the copper ore potential at Kilembe was estimated to have been exhausted by now. Significant new discoveries of ore have been made and reserves are now expected to last for eight to ten years at the present rate of extraction.

The second major mineral occurrence is the Lake Katwe salt deposit, presumably of volcanic origin. Local salt production at Katwe has been in operation for a long time. Previously the production used to be controlled by the Toro Native government but with the local settlers themselves carrying out the production. The government was more concerned with the marketing. Today the government of Uganda through the Uganda Development Corporation, a parastatal body is going to take over the production.

The Lake Katwe Salt Project started last year is to be the biggest chemical industry in the country. The Federal Republic of Germany through the West German Government Credit Bank lent sixteen million shillings to the government of Uganda for the Salt Project. The loan was signed for on 11th November 1974. Now the construction and installation of an ultra-modern processing and drilling plants are being done by Roko construction at Katwe. It will certainly be difficult for the local salt workers to compete with modern machines.

Lake Katwe water contains a considerable amount of sodium from which table salt can be processed. It is estimated that well over 70,000 tons of table salt

(sodium chloride) and 250,000 tons of Potassium chloride for use as a fertilizer, which will be the two main products will be produced in the first twenty years of operation. Other by-products will be discarded but their extraction may be viable at a later stage. The local people used to work the surface parts of the shallow lake, but the new machine will dig down 90 metres deep to obtain finer salts.

Infact the salt project is already changing the life of the Katwe fishing village which is to be promoted to an urban centre. Part of the fishing village has been swallowed by the project, some people displaced and over 100,000 shillings offered for compensation - Some fishermen and fishmongers have joined Roko Construction Limited. In addition to displacement, modern buildings in form of administrative blocks, stores and staff houses are to go up together with recreational places.

Another mineral resource development activity in the area is the quarrying or surface mining of lime. There are two quarries involved between Kasese and Muhokya. These are small enterprises employing 20 to 25 people each. For processing the lime is sent to Kawempe in Kampala. However, mention must be made of the limestone resources on the eastern side which are processed for cement at Hima in the next county.

Quarrying for building and road construction material must be considered as another resource development activity in the county which, however, is difficult to assess. There is no adequate record of the level of exploitation.

Table VIII: Quantity and Value leading exports

Coffee Arabica:	1968	1969	1970	1971	1972
Quantity (kilos)	23735	17559	11399	14258	24089
Value (000 shs.)	139703	97458	88325	103078	167224
Coffee Robusta:					
Quantity (kilos)	128220	163007	179846	160337	190094
Value (000 shs.)	575317	682471	926139	879222	961070
Cotton Raw:					
Quantity (kilos)	61653	52903	78117	18753	66584
Value (000 shs.)	295672	250955	350985	351898	370733
Copper Unwrought:					
Quantity (Tons)	15632	16637	16446	16807	14141
Value (000 shs.)	111490	120277	165543	137740	112785

Source: Quarterly Economic and Statistical Bulletin,
Uganda.

Mineral Resources utilization

Copper is the country's third foreign exchange earner. The export of coffee, cotton and copper from Uganda in the recent years has been as shown above (Table VIII).

It is hoped that some of the salt products from Katwe plant will be exported to other countries.

Mining offers employment both to the local villagers and the technically trained men from all over the country.

Stimulator of urban development or organiser of human settlements. The whole of Kilembe urban centre has grown at the expense of the copper mine resources. Copper mining also boosts the growth of the twin town of Kasese. After the instalment of the salt plant Katwe is to be promoted to a township status.

The extension of the railway from Kampala to Kasese was because of the copper mine. Other infrastructural items like power line have also been attracted by the copper activity.

Provision of social services like hospital at Kilembe and piped water.

9.1.6 Development of Rural Production

The rural production activities to be considered here are crop and animal farming, and forestry. Fishing is a rural production activity but has already been dealt with above.

The most major rural production activity is agriculture This takes place mainly on the Ruwenzori slopes in the areas west of Muhokya and Kasese and the places surrounding Kilembe town. 69.4% of Busongora county is National Park area occupying the southern parts norther of Lake Amin, Kazinga channel and Lake George. The north-western corner of the county is land above 2000 metres and by forestry regulations is not to be settled. That lives about $\frac{1}{4}$ of the county as area open for rural production. However, part of that too

is urban area occupied by Kasese, Kilembe and Muhokya urban centres. Professor Langlands has calculated the total cultivable area of each county in Uganda and gives that of Busongora as 89 square kilometres.

Agricultural production is influenced by two natural factors of soil and climate. Soil formation in Busongora county has been highly affected by tectonic activities that resulted into the formation of the Rift Valley and the Ruwenzori mountains. Then the Ruwenzori mountains themselves are a big climatic influence. The soils west of Lake George and north of Lake Amin are of volcanic origin and ranked to be of high productivity. Because, they are in the national park they are not useful for the agricultural production of the county. The two soils to be considered in the county are soils to be found in the Mubuku-Kasese area and ferrisols to be found on the Ruwenzori slopes.

Eutrophics are soils of calcium relatively young with the top horizon rich in organic matter and developed on alluvium in the cases of the Muhokya-Kasese-Rukoki area. Ferrisols are soils on a stage towards becoming ferralitic, but are rather more fertile and have a better reserve of bases.

Nevertheless, the climatic influences of the Ruwenzori mountains goes along to boost the agricultural production. With rainfall averages of about 60 inches () millimetres and hence a good vegetation which results into humous formation adding to the fertility of the soils the mountain slopes are good for agricultural production. The Bakonjo are the dwellers of the Ruwenzori slopes in Busongora practising a mountane system of agriculture.

As in the most areas of Uganda the major agricultural concentration is on subsistence farming. The more the time that is spent on the production of food the less the amount of cash crops. One author has commented that "the real problem still facing Uganda is how to improve the standard of farming which is still retarded by the need for each individual farmer to produce the bulk of the food requirements of the family"¹ (J.B. Jameson). The crops produced for subsistence include finger millet, sorghum, sweet potatoes, cassava, beans, groundnuts, maize, and plantains. The consumption of cassava has been on increase but finger millet is still retained as an appreciated food. The impact of modern economy has resulted in the shift away from dependence on annual grains to the adoption of plantains among the main food supplies and an increased reliance on cassava and yams. The Bakonjo are today greatly dependent on cassava, yams and beans as their food staples. Beans are the most important protein crop, the only other legume in the area being groundnuts which are, however, not extensively grown.

There are two cash crops grown in the county. Coffee is grown on the slopes of the mountain and cotton on the plains. It was not until the 1950's that the Bakonjo began to come to the plains to grow cotton. The coffee crop is sold rough hulled.

The land is opened for finger millet during the rainy period of August to November. Other crops like beans, cassava, sweet potatoes and maize follow in the second rainy period of March to May. Methods of husbandry are still low.

However, in the east of the county there is a government controlled irrigation scheme, the Mubuku Irrigation Settlement Scheme, whose practices of husbandry can be quoted here for illustration.

The Mubuku Irrigation settlement scheme was started in the early 1960's. The main purpose for setting up the project was to assess the technical feasibility of and economic returns from the development of a substantial area for irrigated agriculture and to acquire the management techniques applicable to large agricultural settlement. The scheme measures approximately 2000 hectares. Out of the 2000 hectares 838.4 hectares is allocated to farmer holdings and the balance is to be utilized for pastures, eucalyptus forest, experimentation, administration buildings and social facilities. The farmers are organized into a co-operative society through which the sell of some of their produce is organized.

Today there are 141 farmers settled on a 3.2 hectare holding each together with their families. The target is set at 242 farmers. There is quite a long list of farmers who would like to join.

During the experimentation period, the following crops were found to be suitable: onions, maize, rice, groundnuts, cotton, plantain, lucerne, and fodder maize. Other minor crops were; beans, beetroots, cabbages, cauliflower, carrot, capsium, eggplants, tomatoes, tomato and dennel. However, not all the crops are today grown.

Cropping is organized into a 3 by 3 years crop rotation system. During the first three years crops of maize, rice, groundnuts, beans, onions, cotton are grown. For the other three years lucerne, a legume, is grown for the purpose of

improving soil fertility. The six year rotation is given below:

<u>Year</u>	<u>1st Season</u>	<u>2nd Season</u>
One	Maize/rice	Cotton
Two	Groundnuts/beans	Onions
Three	Onions	Maize/rice
Four	Lucerne	Lucerne
Five	Lucerne	Lucerne
Six	Lucerne	Lucerne

On average the area allotted to each crop for each individual farm of 3.2 hectares works out as follows:-

<u>Crop</u>	<u>1st Season hectares</u>	<u>2nd Season hectares</u>
Onion	0.8	0.8
Maize	0.4	0.4
Groundnuts/maize	0.4	-
Cotton	-	0.4
Lucerne	0.6	0.6
Plantain	0.4	0.4
Rice	0.4	0.4
Miscellaneous	0.2	0.2
Total	3.2	3.2

The 0.2 quoted as miscellaneous is usually utilized for homestead and fruit/vegetable crops.

Fertilizers are used to boost production and include the following:-

1. Sulphate of ammonia.
2. Single Super phosphate.
3. NPK
4. Calcium/aluminium nitrate.

On the scheme there is a livestock section to which some produce like lucerne and fodder maize are sold. Busongora is not very much of a livestock county. May be the introduction of livestock on the scheme will spearhead livestocking in the county. The major hindrance especially for cattle rearing is tsetse flies. The county is infested by Glossina fuscipleuris and Glossina pallidepes especially in the Game park areas. The county is estimated to have a total number of 1695 heads of cattle. The Bakonjo keep some sheep and goats on the mountain slopes.

Forestry

Forestry does not rank high as a resource production activity. The area above 2000 metres in the north-west corner of the county has been declared a forest reserve. This forest zone is not of commercial economic importance. Its only significance is protective for the purposes of water conservation. The second area of forest reserve is west of lake Katwe between Nyamugasani Ranger Post and Lake Katwe town, this is known as Kihabule forest reserve. It is also too small for commercial purpose. Besides for the national park environmental conservation purposes it is not to be exploited - even by the local people for fuel purposes. There are also

isolated woods around craters in the crater area north of Lake Amin. Some other forest is an island in Lake George Akika Island - which is also controlled by park regulations. Total area under forest reserve in the county is estimated to 68.27 sq. kilometres (26.36 sq. mls.).

9.1.7 Utilization of Agricultural and Forestry Resources

The first major benefit of the rural production activity is its provision of food to the rural population. This responsibility falls on the rural adults. Some of the food is sold to the urban centres of Kilembe and Kasese and to the fishing villages. Some food crops like beans are even sold as far as Kampala where the Ruwenzori beans are particularly desired.

The biggest county population, like in all other parts of the country is dependant on rural production for its income. The cash crops of coffee and cotton in addition to other food crops which enter the commercial market earn incomes for the local villages.

Coffee and cotton from the county adds to the total nation's pool to be sold to the foreign markets for fetch foreign exchange.

Rural production provides employment both for the peasants and the educated who cannot get employment in other sectors. For the peasants infact agricultural production is away of life which goes along to preserve traditional values.

9.1.8 Other Developments in the County

Urban Development

There are two major urban centres in the county - the twin town of Kasese and Kilembe. Kasese is today the capital headquarters of Ruwenzori District. The growth of both town has been greatly boosted by the mining of the copper resources. Kasese is the rail head town of the railway that carries copper to Kampala. In 1959 when the census was carried out Kasese had only recently become a rail head and had a total population of 1564 people. Ten years after, in 1969 at the next population census it had increased to 7145. An increase of 558 people which gives it a very high intercensal growth rate. By 1969 population, Kasese is the seventeenth largest town in Uganda.

Kasese town planning area has a total of 619.2 hectares in areas. These are divided into the following land uses:-

<u>Zonation</u>	<u>Area in Hectares</u>
Roads	31.6
Railways	58.0
Residential	198.4
Industrial	104.4
Central Area	18.0
Open space	24.0
Other uses	268.0
Agricultural	484.4
Undetermined	619.2

Table IX: Area Zonation of Kasese Town.

Source: Department of Urban and Country Planning,
Kampala.

Kilembe is entirely a copper mining town which has been run almost like a privately owned town. Data on it, even for population number is not present. Kilembe is not counted separately in urban analyses. Its population is included in the two parishes of Kyenjuki and Katiri to which it forms parts. Katiri had a population of 13,495 people in 1969. Most of the people in the parish are associated with the mine. Kyenjuki had a population of 3657. That gives a total divisional population of 17,152 people of which about 2000 (1969) are estimated to live in the urban area. The planning of the town is done by the mining enterprise and kept private.

The third significant urban centre which, however, is considered a fishing village settlement is Katwe. According to 1969 population Katwe had a population of 806 people. These were people who lived in the central area of the trading centre. However, there are two adjacent parishes whose population lives concentrated next to the trading centre. These are Kyarukara with 1902 people and Rwenjubu 2,288 people. The total fishing village settlement is, therefore given as 4,996 people. By the instalment of the salt project at Katwe the town is to be raised to a township status.

The other concentrated settlement of the county is the trading centre of Muhokya with an estimated population of 961 people. In addition there are the fishing villages of Kasenyi, Katunguru and Hamukungu. Kahendero is quite a small one. Their populations are given as - Kasenyi 922, Katunguru

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The biggest landuse of the county is game conservation which has been estimated to occupy 69.4% of the total area but excluding open water. The rift valley depression is suitable rangeland for animal keeping. Obviously the areas today roamed by animals were historical grazing lands. However, the devastating raids of Kabalega couples by the tsetse fly ruined the cattle population of the area. Ruwenzori National Park to which Busongora forms part is the second largest in the country.

The area used for cultivation is relatively small when you are to consider the parts occupied by game reserve and area above 2000 metres. Area under cultivation has been estimated by Professor Langlands to be only 7% (83 square kilometres).

Cattle grazing does not rank as an activity of the county. Area under urban use is estimated to be 6 square kilometres. The landuses of the town of Kasese are given under the section that considers urban development.

Within the National Park area there are other conflicting landuses. These are areas under fishing villages. Those villages that are legal have confined areas with well defined boundaries excising them from the national park. However, illegal settlements have also continued to grow. One writer has remarked:

"By far the most serious threat to the continued existence of the Queen Elizabeth (Ruwenzori now) national park is the continued establishment of illegal fishing settlements within the national park and of the damage which these settlers inflict upon the

vegetation and the disturbance to game." (p. 81)²

Farther landuse conflicts are expected from the growth of Katwe settlement after the Salt Project has been established. The settlement is to be promoted to a township status. Various developments and increased population are expected. This may turn out to be disastrous to the national park if proper control is not exercised.

10.1 Aspects Warranting Integrated action

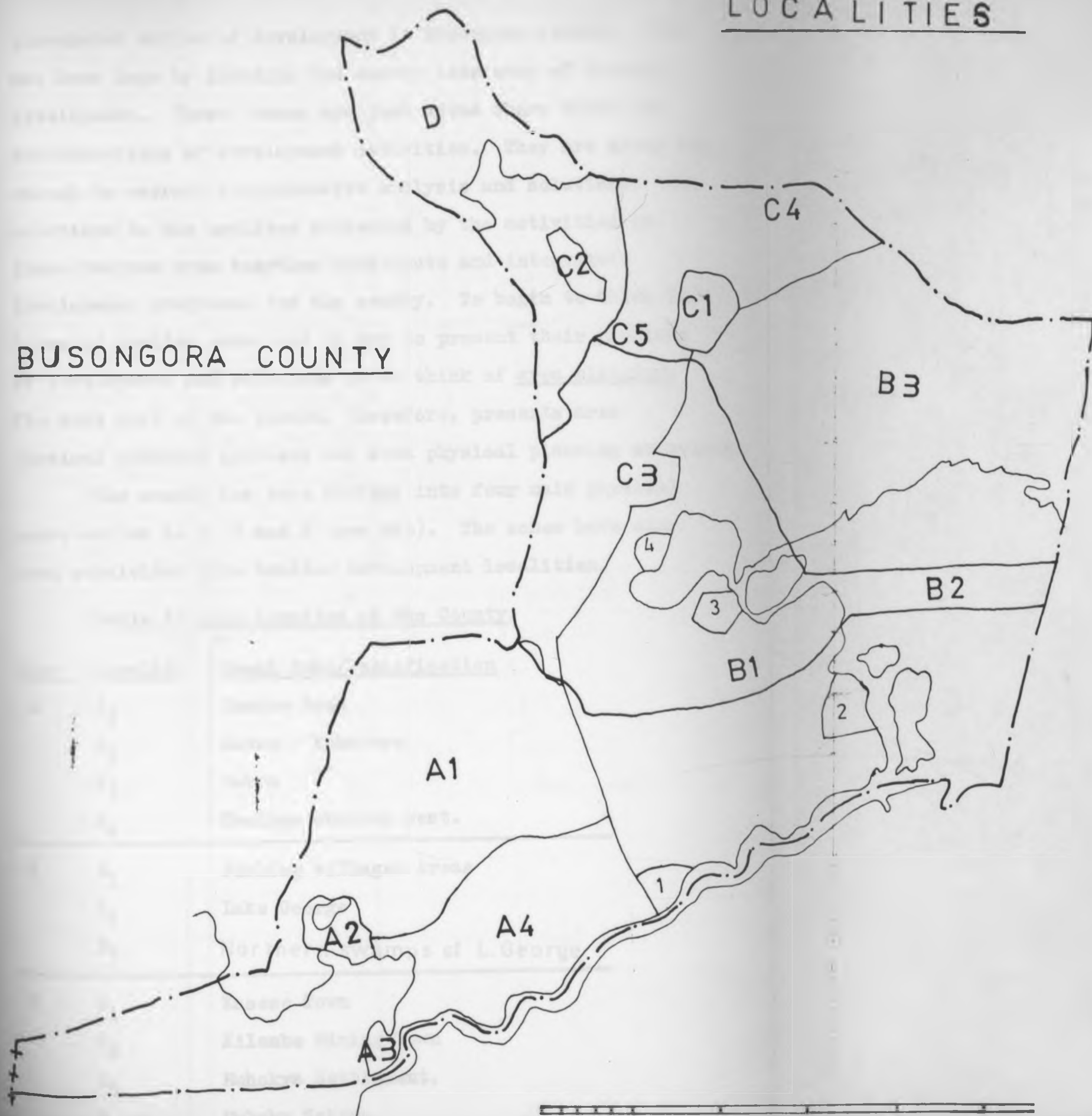
Physical planning is basically concerned with the spatial spread of developmental aspects on the earth. The location of a set of objects on a surface forms a distribution. The study of distributions, a theme which has been mainly common in geography, has been considered in economic mapping, statistical mapping and point patterns on a uniform plane. One way of describing a distribution with a number of dots is to study nearest neighbour features. A technique ^{to study nearest neighbour relations was} introduced and is known as the nearest neighbour concept. To study nearest neighbour features is to consider the behaviour of a set of phenomena on another set of phenomena. And to think in terms of effects between various phenomenon is to think comprehensively. It has been advocated previously that comprehensive planning is a resultant desire to have an integrated programme of action on a set of sectorial developments - sectorial developments which have been an outcome of economic planning.

This thesis also proceeds to examine problems emanating from sectorial development of resources which curtail the desire to maximize benefits and necessitated

RESOURCE EXPLOITATION

LOCALITIES

BUSONGORA COUNTY



LEGEND

- A1 CRATER AREA
- A2 KATWE KABATORO
- A3 MWEYA
- A4 KAZINGA NORTH
- B1 FISHING VILLAGES
 - 1 KATUNGURU
 - 2 KASENYI
 - 3 HAMUKUNGU
 - 4 KAHENDERO
- B2 L. GEORGE
- C1 KASE SE
- C2 KILEMBE
- C3 MUHOKYA
- C4 MUBUKU
- C5 REST OF C
- D LAND ABOVE 2000 METRES

5 4 3 2 1 0 5 10 15 20 KILOMETERS

integrated action of development in Busongora county. This has been done by dividing the county into zone of resource development. These zones are just areas where there are concentrations of development activities. They are areas big enough to warrant comprehensive analysis and solutions. The solutions to the problems presented by the activities in these various area together constitute and integrated development programme for the county. To begin to think in terms of smaller zones and to try to present their problems of development and solutions is to think of area planning. The next part of the thesis, therefore, presents area physical planning problems and area physical planning solutions.

The county has been divided into four main physical zones called A, B, C and D (see map). The zones have also been subdivided into smaller development localities.

Table X: Area Zonation of the County.

<u>Zone</u>	<u>Locality</u>	<u>Local Name/Specification</u>
A	A ₁	Crater Area
	A ₂	Katwe - Kabatoro
	A ₃	Mweya
	A ₄	Kazinga channel west.
B	B ₁	Fishing villages Areas
	B ₂	Lake George
	B ₃	Northern swamps of L. George
C	C ₁	Kasese Town
	C ₂	Kilembe Mining Town
	C ₃	Muhokya Settlement.
	C ₄	Mubuku Scheme

Table X: cont'd

<u>Zone</u>	<u>Locality</u>	<u>Local Name/Specification</u>
O ₅		Busongora major Settlements
D		Area above 2000 metres

N.B. The National Park covers the A and B zones.

Zone A: This is the area flanking Lake Amin on the northern side.. Its major places are the Katwe-Kabatoro settlements and the western parts of Ruwenzori Park section in Busongora county, with numerous craters.

Zone B: This zone is semi-circular of Lake George on the western and northern sides - Its major activity areas are the fishing villages of Katunguru, Kasenyi, Kahendero and Hamukungu. To the north it is mainly swampy with floods of rivers emptying in the lake.

Zone C: This is the zone of major settlement in Busongora county and thus also a zone of varied development activities. It has the urban centres of Kasese and Kilembe and the Irrigation Settlement of Mubuku. The greatest rural production also takes place in this zone.

Zone D: Zone D is the area in the county above 2000 metres and by forest reserve regulations is not allowed for settlement.

Area Problems curtailing Resource Development
and hence Maximization of benefits.

A₁ Crater Area

- i. Destruction of vegetation by fire and grazing animals.

The fire and elephants are prominent in destroying the crater forests. Other animals destroy the savanna woodland.

The destruction of the crater forest is noticeable in the stamp remains of the trees and the diminishing number of acacia on crater floors.

- ii. Shrinkage of marshes and waterholes.
- iii. Increasing amounts of imperata. As a range grass imperata is an unnutritious grass.
- iv. Bare grounds indicating erosion surfaces.

A₂ Katwe-Kabatoro

Most of this areas problems ensue from its confinement by the national park areas.

The surrounding areas suffer similar ecological problems as those of the crater area.

- i. Deteriorating vegetational cover facilitating soil erosion.
- ii. Landuse conflicts. Katwe is a fishing settlements surrounded by the national park. Misunderstandings of the boundaries excising Katwe and Kabatoro townships often arise.
- iii. Risks with wild animals. In the national Parks the interests of animals are paramount.
- iv. Over-fishing. Fishing has become an important economic activity both locally and country-over.

Fishing pressure may result in over-utilization of fishing stocks.

- v. Frontier division of the waters. Fisheries management conservation measures developed on Ugandan side can easily be diluted by lack of similar measures on Zaire side. Border conflicts over fishing rights also arise.

vi. Pollution

- a. The possible contamination of the lake waters as a result of increased use of biocides in agriculture and forestry.
- b. Surface mining of lime outside the western Ruwenzori National Park border results in emission of dust in air, banks of debris containing acid which impair the growth of vegetation.
- c. Salt factory is being constructed at Katwe. Atmospheric pollution with sulphur compounds which are deadly to plants and animals can be expected. Plants exposed to sulphur dioxide show decreased photosynthesis and increased respiration and animals feeding on such plants can also be adversely affected.
- d. Katwe is to be raised to a township status. Effluents from sewage and other subsidiary factories can be expected.
- e. Effluents from Kilembe and Kasese drain to Lake George then on to Kazinga channel and Lake Amin.

- vii. Peripherality - Katwe and Kabatoro being far west suffer from "connection" with the rest of the country.
- viii. Lack of food - these places are far from food markets of the county. Food is obtained from Bwera in Bukonjo county, 26 kilometres away.
- ix. Lack of firewood - Park regulations prohibit use of trees in the neighbourhood.
- x. Lack of treated water. The lake waters are contaminated and one may easily contract Schistosomiasis - Bilharzia.

A₃ Mweya

Mweya is a peninsula between Lake Amin and Kazinga. It is the place where tourist catering activities, the Game Department activities and Institute of Ecology are centered.

- i. The settled eastern part is cut off as animal recluse especially for the hippos from Kazinga and Lake Amin.
- ii. Noise pollution. From automobiles, aircrafts and launches. The more the tourists the more the noise.
- iii. Dangers of contamination of the channel waters by domestic refuse and sewage discard.

A₄ Kazinga Channel West

This is the western side of the Kazinga channel waters and the immediate area flanking the channel on the northern side. The area also shares in the ecological problems stated above.

Vegetation deterioration from fire and grazing especially the grazing of the channel shores by the hippos.

Increased viewing circuits. This is a problem of excessive concern for tourists. The more the vehicles in the area per day the more the disturbance to the animals. The more the trucks the more the effect on vegetation and the soil. Blowing dust from vehicle movements increases dust in the air.

iii. Noise pollution in the channel from the launches that take visitors, go for game counting and patrol for pouchers.

iv. Disturbances of game by fishermen and their boats and canoes both during the day and at night.

Fishing village settlements.

This is the area west of Lake George up to just west of the road from Mbarara to Kasese. It is the area where fishing activities are concentrated.

There are four fishing villages in all:-

- 1. Katunguru
- 2. Kasenyi
- 3. Hamukungu
- 4. Kahendero.

Kasenyi and Hamukungu are legal settlement villages with properly defined boundaries excising them from the national park. Katunguru and Kahendero are illegal settlements and have no proper demarcation boundaries. Katunguru is a settlement on both sides of Kazinga channel.

It is the Katunguru on the Bunyaruguru side that

has illegal recognition. However, settlement is today concentrating on Busongora side than Bunyaruguru side. Today the Busongora Katunguru is a sprawling settlement and a threat to park control regulations. The 1969 population of these villages was as follows.

<u>Village</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Kasenyi	609	313	922
Hamukungu	640	360	1000
Katunguru	398	332	730
Kahendero	122	82	204
Total	1,769	1,087	2,856

- i. Sprawling illegal fishing village settlement of Katunguru.
- ii. Recent up-start of an illegal fishing village at Kahendero.
- iii. Noise pollution from automobiles on the Kasese-Katunguru road and those to and from the fishing villages.
- iv. Game disturbance by food sellers from Ruwenzori slopes to the fishing villages.
- v. There are also problems which are particularistic of the fishing villages.
 - a. Standard of feeder roads.
 - b. Standard of landing sites.
 - c. Poor standards of housing.

- d. Lack of petrol pumps.
- e. Lack of chlorinated water supply.
- f. Lack of washing slabs, fish stores, smoking houses and drying platforms.
- g. Lack of public toilets.
- h. Lack of proper market places especially for foodstuffs.
- i. Limited shopping facilities.
- j. Proper disposal of fish waste and other refuse.
- k. where to educate the children - primary schools.
- l. Lack of cooking fuel.

Lake George.

Lake Geogre is in danger of pollution as a result of economic activities that surround it. The types of pollution are:-

- i. Pollution from copper spillage.
- ii. Pollution by effluents from Kilembe and Kasese urban areas.
- iii. Pollution by biocides used at Mubuku Irrigation Scheme. At the irrigation scheme sulphate of ammonia, Single super phosphate, NPK and calcium/aluminium nitrate are used as fertilizers at the scheme. Toxaphene is used for tick control.
- iv. Pollution from Dieldrin used for the control of tsetse flies.

- v. Pollution from pesticides used on the Ruwenzori slopes in agriculture and at Mubuku Scheme.
- vi. Pollution from surface quarrying of lime between Muhokya and Kasese.
- vii. Pollution from oil wastes at the rail station.
- viii. Pollution from fish wastes that are disposed at the landing places.
- ix. Pollution by refuses from fishing villages.

B₃ Northern Swamps of L. George

This area lies within the Ruwenzori National Park boundaries. It is the area that borders the major settlement zone in the north-west. It is mainly swampy and has a number of rivers running through it. During the rainy period a large extent of it is flooded. Its aquatic nature makes it prone for pollution by the pollutants carried from the agricultural areas and urban centres that flank it.

A survey conducted in Zone A and B indicated the following:-

From 1969 census results Zone A and B have a total population of 7,853 people. The total that was interviewed was 200 people. That makes a sample percentage 2.5%. The following data has been computed.

1. Average size of household in the area 6.8.

2. Of the two hundred interviewed their places of birth were:-

Katwe and Katunguru	Bwera	Ankole
126	13	24

Buganda	Kigezi	Kenya	Zaire
21	7	3	6

3. Average longest period spent in the area - 23 years.

Minimum 2 years. Maximum 80 years.

4. Average size of household plot at Katwe where there is some cultivation - 2 hectares.

92% wanted a bigger size of plot.

8% were satisfied with their sizes of plots.

5. Occupation types.

Occupation	Number involved
a. Selling salt	31
b. Chief	3
c. Fishing	84
d. Cultivating	26
e. Selling food	27
f. Brewing alcohol	6
g. Shop keeping	9
h. Crafts	3
i. Clerk	1
j. Bar owner	2
k. Driver	2

<u>Occupation</u>	<u>Number involved</u>
-------------------	------------------------

Selling water	1
Headman	1
Restaurant owner	2
Selling old clothes	2

Appreciation of National Park:-	<u>% age.</u>
121 appreciated the presence of the Park.	60.5%
45 were indifferent.	22.5%
34 Did not appreciate.	17.0%

Out of the 121 who appreciated only 5 were willing to migrate to leave the national park free of intervention.

3 to Bwera. 1 to Kasese. 1 to Ankole

8 households had people employed in either the national park or Uganda Hotels. Non had more than two people.

Source of food (place where obtained).

Katwe people get food from Bwera market, 26 kilometres away. Katunguru people get food from Bunyaruguru county, 19 to 24 kilometres away. Kasenyi people get food from Ruwenzori slopes and Bynyaruguru.

Kahendero and Hamukungu from the neighbouring mountain areas.

Type of Fuel used.

<u>Type</u>	<u>Number of people.</u>
Firewood	90
Charcoal	56
Charcoal + Kerosene	24

continued:

Type of fuel used:

Number of people.

Charcoal + firewood 30

Charcoal is obtained from West Ankole

Firewood/papyrus from around but against park regulations.

Kerosene is bought in the neighbourhoods.

Of the 200 employed only 9 had ever been attacked by animals.

C₁ Kasese

Kasese is a town at the foot of mount Ruwenzori.

In 1959 it had a population of 1564 people.

Then it had only recently established as a rail head. In 1969 it had a population of 7145 people.

An increase of 5581 people in ten years, which gives it one of the highest intercensal increase in the country. In 1959 it was the twenty fourth biggest town in Uganda. And in 1969 it had moved to become the seventeenth biggest town in Uganda. Its current problems can be assessed to be the following:

Peripherality. It is 410 kilometres to Kasese by road through Fort Portal from Kampala and 347 kilometres by rail. That puts it far from the main capital of the country. However, it also has air connections to Entebbe, then on

to any other part of the world.

- ii. Area for expansion. On the east it is bordered by Ruwenzori National Park and on the west by the Ruwenzori Mountain.
- iii. Competition from the twin mining town of Kilembe.
- iv. Exhaustion of the copper mine.
- v. Adverse attitudes of the Bakonjo due to political dissatisfaction.
- vi. Hot and dry climate.
- vii. Untarmcked roads and streets.
- viii. Modern bus and taxi parks.
- ix. Built up market place.
- x. Organised recreational or sports ground and recreational hall.

C₂ Kilembe

Kilembe has hitherto been run as a private town belonging to the mining enterprise. Though interaction to and from the town may not be difficult the existence behind a gate and the formalities at the gate go farther to make it a confined island of development. Kilembe is entirely a copper mining town. It is not counted separately in the urban analyses. Its population is included in the two parishes of Katiri (13,495 people in 1969) and Kyenjuki (3,657 people in 1969) to which it partly

exists. Its problems are largely particularistic to the mining of the copper resource.

- i. Exhaustion of the copper reserves. Today expected to exist 8 to 9 years more. Save for recent discoveries they were expected to have been exhausted this year.
- ii. Privacy attitude and concealment in the mountains.
- iii. Lack of a plant to extract cobalt and sulphur from the pyrite which is today only stock piled.
- iv. Copper pollution of the local rivers.
- v. Kilembe is also affected by the adverse attitudes of the Bakonjo due to political reasons.
- vi. Built up market place.
- vii. Congested built up area due to lack of flat surface.
- viii. Health hazards to workers.
- ix. Disfigurement of the landscape.
- x. Adequate power resources in the neighbourhood.
- xi. Competition from the twin town of Kasese.
- xii. No reliable population data.

Muhokya

Muhokya is a concentrated settlement or a trading centre about 6 kilometres from Kasese town.

Its 1969 population is estimated at 961 people 538 males and 297 females. It has a Gombolola headquarters, a police post, a church, a number

of shops and cotton stores. Its problems can be assessed as:

i. Proximity to the national park. On the eastern side the settlement is semi-circled by the national park boundary. It, therefore, has problems of conflicts with the national park authority.

ii. Sprawling development. The settlement is on both sides of the Kasese Katunguru road which has a considerable number of high speed and heavy commercial vehicles per day. Therefore, the town lacks proper physical planning.

iii. It exists on infertile soils and, therefore, lacks immediate grounds for cultivation. Food comes from the Ruwenzori slopes.

iv. The cotton stores depend on the production of a migrant population from the mountain slopes.

v. Considerable degree of alcoholism and prostitution for so small a rural settlement centre.

Mubuku Irrigation Settlement Scheme

Mubuku is a scheduled production scheme utilizing irrigation technical service upon which cash crop production on individual holdings depends. A lot of planning especially in plot layouts has been done at the scheme. However, its major problems lie in comprehensive development of the scheme into a conducive human habitat in respect to the concerned peoples

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desires and expectations. Emphasis should not be laid on production only but also the human element. Together, the environmental aspects in terms of conservation should also be considered.

Development of a human settlement which is a reflection of the people who are settled.

The scheme should not continue to be a separate entity but should aspire to be part of an over all regional development. There is lack of diffusion of innovative efforts and techniques to the surrounding rural areas.

Alot of capital investments have gone into the scheme and a considerable large number of field agricultural officers are employed in a concentrated scheme at the expense of thousands and thousands of struggling peasants outside the scheme.

Consideration of the long list of those who are attracted to join.

Regard for environment in respect to the large quantities of biocides which are used.

Busonhora major settlement Area

So far for zone C we have dealt only with the various pockets of development in the zone.

Now we shall concern ourselves with the remaining rural spread where most of the rural

production takes places. Hence the problems to be concerned with will pertain to the nature of rural settlement and production.

i. Low productivity ferralitic soils especially in the Kasese Muhokya area.

ii. High temperatures and low rainfalls on the right plains.

iii. Slope problems and inaccessibility especially for vehicles on the mountain. This renders transportation especially the movement of agricultural productions to urban markets quite a burden.

iv. High insistence on subsistence production.

v. Adverse political attitudes limiting interaction especially of field officers and other types of elites as agents of modernization. This also affects collection of essential data for analysis and assessment of the prevailing production situation.

vi. Peripherality and isolation due to the configuration of the land.

vii. Low livestock production.

viii. Low agricultural mechanical inputs.

ix. Biocides which are used in agriculture.

x. Customary practice of burning off grass and scrub leading to considerable atmospheric pollution.

- xi. Limited forest resources.
- xii. Together with the general social problems of rural under development that affects the whole country.

Zone D: This zone is land above 2000 metres. This land is regarded as being at too high an altitude for economic utilization. The land is protected from vegetation destruction according to the Uganda Forest reserve regulations. Its utilization is as a water conservation zone. It also has significance in the mountaineering activity. For economic importance it is largely a waste land which may need protection from economic interference.

- i. Threat of future human interference as population on the lower slopes increases.
- ii. Insecurity on the lower slopes may make it a resort for temporary settlement if emergency may break out.
- iii. Delicate vegetational cover.

10.1.2 Other Problems in the county

In addition to the local area resource development problems there are problems which are county wide or need broad considerations.

a. Poaching of Game

By far the greatest threat to the national park today can be said to be poaching, especially for the valuable trophy animals like the

elephant, hippo, and leopard. It is feared that since the advent of the Uganda, Economic War poaching has been at the highest increase. In the sixties and earlier on it was impossible to drive through the park either at night or during the day without finding not only elephants but several herds of elephants. Today they are a rare scene. However, there are no recent game figures to show the magnitude of this problem though the dotted carcasses and teams of vultures in the national park have their own stories to tell.

Historically, there are two forms of poaching. There is the traditional poaching whereby a group of villagers organise themselves for a hunt just to get meat for consumption. In Busongora county where livestock is low this activity may be justifiable on the local villagers for whom hunting may not only be a search of meat but was traditionally imbedded in their way of life. This kind of poaching is not very devastating and sometimes may help in the cropping of animals. The most serious kind of poaching is the commercial poaching. This kind of poaching is very selective and removes a good number of animals every hunt for modern weapons of kill are often involved. Education of the masses and enlisting support

of nearby residents and of the local administration may be the only viable long-term weapons for poaching, though not thorough for recent outbreak of commercial poaching and the results may be slow to take root for the traditional poaching.

Seismological Problems.

The western Rift valley and adjacent areas is a seismic zone and the risk is moderate to high. Busongora county part of the rift valley system is one of the high risk areas. Occasional earthquakes are often a reminder that the area has not yet reached a period of tectonic quiescence. The most recent serious earthquake was in the first half of the sixties and a number of the residents lost their lives.

Tsetse Flies control

Busongora county, especially the national park zone is prone by tsetse flies - Glossina fuscipleuris and Glossina pallidepes. There is an endeavour to control the tsetse fly by the use of the Dieldrin biocide. However, dieldrin is not without adverse effects to the environment to which it is applied.

A haze of air Pollution from Hima Cement factory

On the eastern side of the county at Hima there is a factory for the production of cement. The

factory discharges a considerable amount of dust into the air. There is need to study the dangers of this pollution which can be seen to be spreading to the game reserve areas.

Over-use of mountain resources.

The Bakonjo on the Ruwenzori slopes have placed a heavy demand on the use of the mountain slope resources. Today quite a number of them have begun to migrate to the plains as is evidenced by the cotton cultivators on the plains and the list of those awaiting to join the resettlement scheme. They also form a big group of those in the resettlement scheme.

Chapter IVFINDINGS:

Certain factors are noteworthy in the desire to work out a comprehensive plan to ensure planning for maximum utilization of resources in Busongora country. Most of these are constraints which prohibit the desired conditions for ideal solutions.

(a) Wildlife:

(1) There is inability to conform to the expectation that a national park should be a confined zone of natural aesthetic value with limited artificial developments.

(2) The legacy of Private landholdings including complete settlements which were located within the national park when boundaries were originally delimited greatly diminish the intention to isolate the national park as a controlled landscape of animal conservation.

(3) The nature of some resources like salt and fish which are found within the national park boundaries make it impossible to exploit them without basing at least some facilities at their place of occurrence which goes along to ensure the longstay of unsolved landuse conflict problems.

(4) There has been lack of concerted efforts to control the establishment of illegal settlements and their sprawling developments. The framework for effective physical planning or at least land planning does exist but it is the limited penetration of the planning idea into the concerned boards and councils that is lacking.

(5) The establishing of accommodation facilities for tourists and the basing of resident populations within the national park (at Mweya) farther adds to the problems of landuse conflicts. At Mweya there is a Uganda Hotels Limited Safari Lodge, Uganda Institute of Ecology and its workers and the Game Department workers. An area which could have been used as a sanctuary for animals especially hippopotamuses from Kazinga channel and Lake Anin and hence a viewing place is taken up by such facilities or developments.

(6) There are areas in the national park which today show signs of deteriorating rangeland due to such hazards like fire, soil erosion and overgrazing. Such areas are like the areas in the propinquity of Lake George which have been overgrazed in several parts by the hippopotamus, the crater area where fire has destroyed some of the acacia communities and the shores of Lake Anin where there has also been overgrazing.

(7) Late dry season burning produces fierce fires and may cause serious damage of both the animals and the vegetation. However, early dry season burning is desirable to maintain the value of the vegetational cover. Burning may also help to produce open green landscapes of greater attraction in which game are more easily visible to tourists than long standing bushes. There is a need for investigations to establish clearly the management values of the use of fire.

(8) Misunderstanding of the exact positions of the boundaries which excise the national park from other settlements and sometimes misunderstanding of the powers of arrest by the game rangers results into unnecessary management conflicts between the game authority and the general public which sometimes have to be resolved in court. In all places where it passes the national park boundary should be properly demarcated.

(9) There are several forms of economic development activities inside and outside the national park which have been a source of pollution. These have included such things as:-

- (a) Mineral exploitation of copper, lemon lime, salt, cement, and quarrying for road building and construction.
- (b) Fertilizers and biocides used in agriculture at Mubuku and other parts of the country outside the national park. Ecological research in the area indicates that large quantities of pesticide residues have reached the northern parts of Ruwenzori National Park.
- (c) Dieldrin used for tsetse flies control.
- (d) Automobiles, aircrafts and launches as sources of noise pollution which, however, goes on with no concern from the authorities.

(10) There is lack of clean distinction between pure and applied research to be carried out for rangeland

and game conservation management purposes. The Uganda Institute of Ecology should spend most of efforts in ecological research applicable to day to day solving of ecological problems. There is lack of clear terms of reference to spell out the responsibilities of the research workers and their obligation to hand over their findings to the management authority.

(11) Poaching, especially commercial poaching has been on increase recently. The elephant is the most trophy treasured animal and hence adversely affected by commercial poaching. Traditional poaching mainly concerns browsers whose meat is liked for human consumption. The buffalo and the Kob in this case are the ones mainly affected.

(b) FISHING:

(1) Overfishing: There is no quantum data that has been kept in the past years to show the stocks of fish, their extent of exploitation and the dangers of depletion. Only figures of landed fish have been kept by the Fisheries Department. However, fish exploitation in Lake Amin, George and Kazinga Channel have been of high concentration since the early 1960's. This area has the best fish exploitation facilities in the whole country as is exemplified by the number of processing plants located in the area. There are two fish processing plants at Kasenyi and Katunguru and another has been proposed for Katwe area.

During the survey which was conducted in the area there were found some retired fishermen. Their reason

was that fish catches had dwindled making the fishing activity less economical. This may be an indication of the advent of the overfishing problem.

(2) There is lack of landing and social facilities at the landing sites. The landing grounds suffer from lack of site organization. Infact physical organization is even necessary to take care of feeder roads.

(3) There is lack of utilization of fish waste most of which is thrown back into the water. It is not uncommon to see an extensive zone of unsavory mass around the shores adjacent to the big landings. This could easily constitute a health hazard in the near future. Five tons of fish yield are estimated to yield one ton of fish meal, a valuable feedstuff valued at about 1000 shillings per ton in East Africa.

(4) The Uganda Fish Marketing Corporation (TUFMAC) has been of real assistance to fishing development. Its efforts to improve the quality of its own salted fish made its competitors to adopt the same methods, thus strengthening the Zaire market. It pioneered the filleting, packaging and freezing process in Uganda and although its own sales efforts have been ineffective it has paved the way for the gradual shift to frozen fish in the local market. The capital investments written off so far may not, therefore, represent a waste. Even mistakes in investment, operation and management have served as an educational function which has contributed to the progress of the successor firms and the trade in the general.

(5) Water Pollution: Lake George is currently under a pollution danger which affects the aquatic plants and fish. The Lake has been reported to receive nitrates and other fertilizers drained from the surrounding farms where the fertilizers have been in regular use. Tailing dam effluents from the Kilenbe area through Bukoki river also end into the lake. The lake is known as the richest in mosses and algae in tropical Africa. The lake, therefore, is affected by eutrophication. When the mosses and algae die they sink to the bottom. When they decay they consume oxygen and release nutrients for farther plant cycle. This kind of fertilization causes a decrease in oxygen content and increase in temperature bringing about gross changes in the aquatic ^{life} of the lake. The pesticide residues can be concentrated in the fish and other lake organisms and consequently affect human beings who eat the fish.

(c) MINERALS

(1) Geological mapping and surveying has been going on in Uganda for a long time but has not yet been fully exhaustive. The full extent of mineral occurrence both in the entire country at large and Busongora county in particular is not yet known. The copper resources at Kilenbe were expected to be exhausted by 1976. However, recent discoveries were made and present reserves are estimated to last eight to nine years.

- (2) When the copper reserves shall be exhausted there shall be a need to introduce other forms of employment occupations to support the population at Kilembe which is today dependant on the exploitation of the copper mineral. This problem will affect the twin town of Kasese too and the railway which was extended purposely to carry the mineral.
- (3) Effluents from tailing dams at Kilembe are the worst source of mineral product pollution in the country. The principal pollutants from copper are solids, toxic metals and flotation reagents. River Rukoki and Lake George where it ends are the worst affected.
- (4) Ruwenzori Park authority has placed a demand that a plant for purifying exhaust gases and water cooling towers be erected as part of the salt works to protect the environment in which the animals live.
- (5) The installation of the salt factory at Katwe, however, is going to greatly increase disturbances in the national park. There is the proposed upgrading of the town settlement. There shall be increased interaction by people making control of visitors to the national park almost impossible. The number of automobiles will increase - lorries to export the salt and employee's cars.
- (6) There is need to control and study the dangers of dust pollution from Hima cement factory and lexon lime quarries.

(7) A survey to find out all the minerals in and around the national park is necessary to help in the future planning of developments in and around the national park.

(d) POPULATION REDUCTION:

(1) The non-urban population outside the national park is 16,945. The average size of family in the country is 4.8. The average size of holding is 1.25 hectares. This makes an assumed area of 57.2 square kilometres. The total land area of the country is 1191 square kilometres. When the area under game conservation (827 sq. km.), area above 2000 metres (83 sq. km.) and area under urban use are subtracted we are left with a total land area assumed free for cultivation of 275 square kilometres. This leaves us with a total land area which is reserve for farther cultivation. However, most of the uncultivated parts are those on the rift valley floor. The area utilized for cultivation is that on the mountain slopes and is estimated to be a third of the total arable zone. This means only 35.9 square kilometres is suitable reserve area for farther cultivation. However, this figure does not allow for the topographical constraints which would also reduce the reserve for cultivation.

(2) The Bakonjo are already exerting high demands on their mountain slopes and some of them have already begun moving away to come to the plains. They form a big population of the resettlement scheme and some are around Muhokya area involved in cotton growing. There is also an advent of settlement in the Dura-Kyondo area, though some in the

national park. The Bakonjo names also form a long part of the waiting list to join the resettlement scheme.

(3) Some ground modification like terracing, mechanization and other farm inputs and introduction of other crops

is necessary to boost the productivity of the mountain slopes so as to contain the growing population.

(4) Too much involvement in the subsistence farming renders little time for growing of cash crops which may be necessary to earn money to improve the methods of husbandry which are still poor.

(5) The adverse political attitudes makes it impossible at present for agricultural officers and other related government officers to go to the mountain slopes and help in the aiding of the farmers to improve their productions.

(6) When cotton growing on the rift valley floor increases or spreads, and the use of fertilizers and biocides as farm inputs goes unchecked, the dangers of pollution, especially into the national park area will be aggravated.

(7) The day to day selling of the foodstuffs in the fishing villages by the Bakonjo enhances disturbances of the game in the national park. Besides those who interact run the risk of being attacked by animals.

(8) Forestry is not a major activity of Busongera county. Kihabule local forest reserve is the only considerable forest of the county. It is used for conservation purposes of the national park. Tree planting is not a favoured activity of the Bakonjo though there are certain areas like river valley which can be utilized for afforestation.

(9) Afforestation may not be a successful programme in Busongora county. To plant trees closely on the rift valley floor would contravene the tsetse control moves to eradicate the fly. On the mountain slopes there is not enough area for tree growing. Besides forests may form refuge areas for some animals which sometime may attack the tree owners. However, some attempts with careful planning are necessary.

GOALS AND OBJECTIVES

<u>Goals</u>	<u>Objectives</u>
(1) Conserve the national park rangeland.	<p>(1) The Uganda Institute of Ecology should carry out an extensive ecological research specifically for environmental management.</p> <p>(2) The findings should be systematically handed to the Game Department for management and there should be clear terms of reference between the two.</p> <p>(3) Environmental conservation should form part of game wardens, training and other middle cadre of the National Park workers.</p> <p>(4) Insist on systematic early burning.</p>

GoalsObjectives

- | | |
|----------------------|--|
| (2) Gainful cropping | (5) Set up firebreaks in the crater area and other parts when necessary. |
| | (6) Systematically crop the hippopotamus and the elephant. |
| | (7) Control the introduction and farther expansion of undesired developments in the national park area. |
| | (1) Cropping to be preceded by scientific research. |
| | (2) Up to date counting of the animals. |
| | (3) Sell the meat of the edible cropped animals to the neighbouring population and look for farther markets. |
| | (4) Sell the trophies to the tourists. |
| | (5) Plough back the proceedings for improved cropping methods and related management. |
| | (6) Cropped animals to form material for scientific study. |

Goals	Objectives
(3) Control conflicting landuses.	<p>(1) Concentrate the sprawling growth of Katunguru by moving it to only one side of Kazinga channel.</p> <p>(2) Abolish the fishing village of Kahendero.</p> <p>(3) Abolish the deteriorating township of Kabatooro and integrate it with Katwe.</p> <p>(4) Control of growth and likely expansion of Katwe.</p> <p>(5) Stop cultivation in Katwe area.</p> <p>(6) Control the growth of population in the legal settlements of Katwe and Katunguru.</p> <p>(7) Stop farther setting up of economic developments in the national park.</p> <p>(8) Construct a singlefeeder road connecting Kasenyi; via Hamukungu for the foodsellera from the mountain slopes</p>

Goals	Objectives
(4) Control Pollution	<p>(1) Insist that plant for purifying exhaust gases and water cooling towers be erected as part of Katwe salt works.</p> <p>(2) Control copper spillage from Kilembe copper mine.</p> <p>(3) Control the use of fertilizers and biocides harmful to the environment at Lubuku Irrigation scheme and other cultivated areas.</p> <p>(4) Control dust spread from Hima cement factory.</p> <p>(5) Control the unsystematic spread of lemon line quarrying.</p> <p>(6) Macadamise Fort Portal - Kampala road to reduce automobiles from Kampala via Mbarara and the national Park to Fort Portal and Kasese for mere use of the macadamised Kampala-Mbarara-Kasese-Fort Portal road.</p>

Goals

Objectives

-
- | | |
|--|---|
| (5) Controlled growth of Muhokya Trading centre. | <p>(7) Use the railway for transportation of the salt and other products of the Katwe salt works. Hence the lorries to the railway station can pass west of the national park boundary via Muruti, Kinyamaseka and then Muhokya.</p> <p>(8) Alternatively a line be constructed from Kasese along the western end of the park boundary to Katwe.</p> <p>(9) Limit interaction of automobiles in the national park and launches on Kazinga channel.</p> <p>(10) Put up a fish meal plant to utilize fish waste.</p> <p>(11) Control the growth of mosses and algae on Lake George considered weeds through botanical and related ecological research.</p> <p>(1) Clearly demarcate the national park boundary.</p> <p>(2) All development be concentrated on the western</p> |
|--|---|

GoalsObjectives

- side of the road only to ease conflict with the national park and ease driving on the Kasese-Katunguru road.
- (6) Planned development of Kasenyi and Hanu Kungu fishing villages (1) Only one and improved feeder road to Kasenyi and HanuKungu.
- (2) Site planning for layout of the landings with improved internal road structure.
- (3) Improve standard of housing.
- (4) Construct fish stores
- (5) Provide a petrol pump.
- (6) Provide chlorinated water supply.
- (7) Put up landing pier and washing slabs.
- (8) Put up smoking houses
- (9) Provide for refuse disposal.
- (10) Put up private and public toilets.
- (11) Organized market for foodstuffs.

Goals	Objectives
(7) Comprehensive development for Mabuku Irrigation scheme.	<p>(12) Provide shopping facilities.</p> <p>(1) Take up all the land planned for the scheme</p> <p>(2) Limit expansion towards the national park boundary</p> <p>(3) Accommodate more people from the mountain slopes.</p> <p>(4) Integrate development with neighbouring villages.</p> <p>(5) Improve standards of housing.</p> <p>(6) Provide social facilities like schools, bars, religious buildings and shopping.</p> <p>(7) Seek farther markets for crop products.</p> <p>(8) Provide transport for exportation of crop products to far markets like Fort Portal, Mbarara and Kampala.</p> <p>(9) Provide transport to Kasese and Kilembe towns.</p> <p>(10) Research into environmental conservation especially in relation to national park.</p>
(8) Increased Agricultural Production on mountain slopes	(1) Solution to the Bakonjo's political grievances to provide a peaceful atmosphere for the field officers.

Goals

- (9) Planned Urban
developments

Objectives

- (1) Adherence to the Kasese development plan
- (2) Kasese should expand towards Rukoki, westwards and southwestwards to limit conflict with the national park.
- (3) Town and country planning department should take over and provide a development plan for Kilembe.
- (4) Control farther growth of Kilembe town for the mining reserves shall not be long lasting.
- (5) Provide cottage industries in Kasese.
- (6) Agricultural product processing plants like coffee curing be put up to provide employment for the Kilembe population which shall be rendered unemployed when reserves are depleted.

GoalObjectives

- (2) Less involvement into subsistence farming.
- (3) Introduction of other cash crops in addition to the only cash crop of Arabica coffee.
- (4) Terracing for farm management.
- (5) Additional methods of improved farm husbandry.
- (6) Plant trees as farm boundaries to provide for afforestation and check soil erosion.
- (7) Market for buying simple farm tools like pangas, rakes, hoes, and simple tractors.
- (8) Transportation to urban markets of Kileleshwa and Kasere.
- (9) Organized co-operative movement for sell of products and its penetration to all members of the population.
- (10) Road and rail transport of products to farther markets.

STRATEGY FOR IMPLEMENTATION:

To install a programme of integrated action in Busongora county, like shall be in all other counties of Uganda, needs a clear understanding of the agents of development, basic and valid facts, and requirements for implementation. In terms of agents of development it is always easy to talk of the private developers on one hand and the government as a public developer on the other, but often the situation is more comprehensive than this. The government cannot be viewed simply as a single developer for it works through various departments and representatives, a variety of which are to be found in Busongora county. Furthermore, economic growth and social modernization in the rural areas do not occur as a self-directed movement initiated by the local population but through an increasing degree of governmental intervention. The whole exercise of economic progress through structural transformation of the economies is a diverse enterprise propelled by a wholesale imposition of modern economic, social and political aspects from outside the traditional cultures.

Three basic premisses need to be gauged out from the outset. These are the necessity for Research, the necessity for Planning (comprehensive planning) and the necessity for Implementation.

TASKS:

(1) The task of research shall be to provide the facts

that are necessary and vital for clear formulation of the integrated programme.

(2) The task of planning shall be to integrate the findings of interdisciplinary research, relate them to practical social, political and economic factors and produce a comprehensive plan of action.

(3) The task of implementation shall be to take decisions and put into action the recommendations of the comprehensive plan of action.

THEMS:

RESEARCH: Research can be of two forms. There is research which is purely concerned with the advancement of knowledge often called pure research. There is research that is applicable to solving prevailing practical problems. For the purpose of comprehensive integrated development in Busongera, like in any other county of the country, it is applied research for solving the day to day mundane problems of the area that is necessary.

PLANNING: It is the purpose of this study to stress² that comprehensive integrated planning is now necessary in Busongera county. However, there are certain issues of procedure that need to be made clear. For long the National Park has developed as an authority of its own and has the supreme authority over its zone. Since the National Park has a clearly defined zone of influence and since the National Park extent transcends administrative units, the National Park should be encouraged to develop its own comprehensive plan. Then planning for the county

should incorporate the findings and recommendations of the National Park plan. Obviously, it is too early to begin thinking of county development plans. Comprehensive planning for Busongora county must be a section of the Western Province Development plan at large and hence part of the Ruwenzori District Development plan, for detail. Comprehensive integrated physical planning will relate to the practical economic, social and political factors of the area.

IMPLEMENTATION: The implementation of the comprehensive plan shall be first the task of the various field officers found in the area. However, the implementation of the planning can never be meaningful and complete without the full involvement of the people for whom it is intended - the local population of the area. The involvement of the local population in the planning and implementation process may not succeed at once, however, persistent efforts must be maintained to achieve the goal. Therefore, one of the major task of comprehensive planning of the area should be to conjure intimacy of the local population with the plan.

THE PLAN: As has been pointed above, there shall be two comprehensive plans to which comprehensive integrated development in Busongora county, shall subscribe. These are:-

- (1) A comprehensive Development plan for Ruwenzori National Park.
- (2) A comprehensive integrated development plan for Ruwenzori district.

A COMPREHENSIVE DEVELOPMENT PLAN FOR RUFENKOTI
NATIONAL PARK

The plan should concern itself with the following aspects:-

(1) Research

- (i) Ecological - (a) Habitat of the animals, health and related problems.
 - (b) Pollution in the park
 - (c) Conservation of the rangeland.
- (ii) Physical - Illegal settlements in the Park.
 - (a) Magnitude of the problem
 - (b) Future Expectations e.g. on population growth.
 - (c) Alternative settlements as solutions.
- (iii) Fisheries - (a) to determine the potentialities of the fisheries resources.
 - (b) To determine the effects of pollution on the fisheries resources.
 - (c) Other necessary fisheries research.
- (iv) Economic - (a) Profitable marketing of the fisheries resources
 - (b) Most conducive means of transportation of the fish and fish products outside the national park.

- (c) Future location of plants for exploitation of local resources without much interference with the national park.
- (d) Any other research deemed necessary.
- (v) Geological - to determine the full extent of the mineral resources in the national park.

(2) Planning

Findings from the above researches should be contained in a comprehensive plan of action drawn up through the guidance of physical planners together with representatives of the Board of Trustees of the Uganda National Parks, Game Department, Uganda Tourist Board, Uganda Institute of Ecology, Economic planners local administrators as concerned agents and to a certain extent the local population.

(3) Implementation

Implementation should be a day to day programme concerned with the following problems whenever and wherever necessary:-

- (i) Clear demarcation of the park boundaries.
- (ii) Conservation of natural vegetation.
 - (a) cropping of animals
 - (b) control of fires
 - (c) control of erosion

- (d) control of spread of less nutritive grasses like imperata.
- (iii) Selling of meat during cropping periods.
- (iv) Most feasible tourist circuits and other types of tourist intervention.
- (v) Powers of arrest by the rangers.
- (vi) Public access - general public and local villagers.
- (vii) Development of ranger posts and any other camps.
- (viii) Priorities of management and research projects.
- (ix) Management of daily expenditures
- (x) Day to day management of vehicles
- (xi) Publicity - through education, forums or discussions, films, posters etc.

(4) Finance:

The finance requirements for the implementation of the development programme have to be properly worked out.

- (5) Division of responsibilities - between all those that shall be concerned with the planning and implementation.

(6) Progress Reports and Revision of Plan:

To ensure sustained progress.

(B) RUWENZORI DISTRICT DEVELOPMENT PLAN:

It is not the purpose of this section to be exhaustive of all the requirements of an integrated development plan for Ruwenzori District since its

concern has been with the development of resources in Busongora county. Ruwenzori District Development Plan is here quoted as the main body to which comprehensive planning for Busongora county shall form part.

The District Development plan shall be a culmination of integrated physical and economic planning activities. Economic planning shall be propagated by exploitation of local natural resources and the solving of particularistic economic problems of the district. Physical planning shall concern itself with the spatial dimensions developed into a set of urban and rural development strategies. Thus the integrated development plan shall aspire to integrated practical social, economic and physical problems of the district. Therefore, the District Plan shall include:-

- (i) description of the occurring physical, social and economic characteristics of the district and specific proposals for future development.
- (ii) Goals and particularistic objectives to achieve them.
- (iii) Planning maps showing:-
 - (a) Landuse zonations
 - (b) Urban or service centres - existing, proposed, and functional sizes.
 - (c) Infrastructure.
- (iv) Programme for integrated development. Below is spelled out what shall be contained in the Busongora county section:-
 - (i) Urban plans - (a) Statement of development objectives and priorities.

- (b) Physical framework showing landuses.
- (c) Detailed planning programmes for the various zones.

Today the urban areas of Kileleshwa, Kasere and Katwe Kabatoro are already under the planning scheme of the Department of Town and Country Planning of the Ministry of Provincial Administrations.

(ii) Rural Development Plans:-

- (a) Rural production landuse zones. These shall show zones of agriculture, forestry and fishing.

Agriculture: Comprehensive area plans for Ruwenzori slopes, the rift valley floor in the Kasere-Muhokya area. Comprehensive area development plan for the Mubuku Irrigation settlement project.

Forestry: Control of the area above 2000 metres on Ruwenzori mountain.

- Afforestation programme

Fisheries: Area plans for the legal fishing villages.

Control of the sprawling illegal fishing villages.

- (b) Conservation - (a) Conservation of the water catchment zone of Ruwenzori.

(b) Pollution - detailed research to determine the extent of copper, agricultural biocide, industrial and sewage effluent, lemon lime quarrying and Hima cement factory pollution.

Exercise control of the pollution.

(c) A statement of general development objectives and priorities for the county.

- The county's development objectives and priorities must be linked to those of the Ruwenzori Comprehensive Development plan.

Conclusion

Regional development planning to achieve conducive spatial organisation to ensure the maximisation of economic development expectations proceeds by looking at inter-relationships of developments in a given area designated a region in planning terms. The way to proceed to achieve the regional development is usually contained in a Development Plan. It has also been expressed in this study that problems that have been depicted shall ultimately be solved through a Regional Development Plan actions for the Western Province of Uganda.

What is needed is a development plan that contains the economic, social and physical aspects and problems and aims at providing both a conducive economic and spatial structural organization. This study has concentrated on introducing physical aspects of development organization to the existing economic organization, as the objective purpose.

Economic development alone cannot ensure maximization of benefits to the full. Infact if physical problems continue unchecked for long they escalate to an extent when they adversely affect the expected economic benefits. In this study such problems which may curtail economic benefits maximization at every resource development locally locality have been analysed or depicted. Comprehensive integrated development planning has been advocated as the only means through which full maximization of resource utilization can be ensured.

APPENDIX

QUESTIONNAIRE FOR CONFLICTS WITH THE NATIONAL PARK

Name of Interviewer.....

Date of Interview

Name of Survey Area

Name of Respondant

I. Household Number

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2. Distance from the N. Park boundary
(1) 1km (2) 2km (3) 3km (4) 4km (5) 5km (6) within

--

3. Size of Household (family)
— Present in the N. Park

--	--

4. Do some of your household members live away?
I. Yes 2. No.

--

5. If Yes How many?

--	--

6. Where? (Name Areas)

7. Place of birth? (Name place)

(1) Within the N. Park. (2) Outside the N. Park

--	--

8. How long have you stayed here? (In Years)

--	--

9. Size of household plot (acres)

--	--	--

10. Is the plot enough for your needs?
I. Yes 2. No.

--	--

II. Main Source of Income
(Occupation activity).

12. Do you appreciate the presence of the N. Park?
(1) Yes (2) No.

--	--

13. If Yes, would you agree to migrate to ^{leave} ~~live~~ the National
Park free of much Intervention? (1) Yes (2) No

14. If Yes, where would you go?

Name Places

15. Is any of your household member employed by the National Park or Uganda Hotels? (1) Yes (2) No

--	--

16. If Yes, How many?

--

17. Where do you mainly obtain your food from?
(Name Places)

18. How far is the Place?

--	--

19 Type of fuel used for cooking:-

(1) Firewood (2) Charcoal (3) Oil (Kerosene)

--

20. Where do you obtain it from?

(Place & Distance)

--

21. Have you ever been attacked by any animal?

(1) Yes (2) No.

--

22. TOTAL monthly income in shillings?

(1) 0-100

(2) 10-200

(3) 201-300

(4) 401-400

(5) 501-800

(6) 800+

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