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M.A. THESIS

**THE ROLE OF GEOGRAPHIC FACTORS IN DEVELOPMENT
INITIATIVES: LAKE VICTORIA REGION OF UGANDA**

By
Peter Butera Bazimya

Presented to:

The Department of Geography,
Faculty of Arts, the University of Ottawa,
in partial fulfillment of the Thesis requirement
for the degree of Master of Arts in Geography

University of Ottawa
Ottawa, Ontario
Ottawa, Ontario, April 1993



Peter Butera Bazimya, Ottawa, Canada, 1993



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Finally, I acknowledge my indebtedness to all those people and organizations who have in numerous reports, papers, and conferences provided the basis for this thesis.

ABSTRACT

This research study investigates the role of geographic factors in development initiatives in the Lake Victoria Region of Uganda. The empirical component of the study is based on two informational activities. First, almost 300 development initiatives identified through an extensive review of public documents are evaluated by means of on-site investigations and consultations with research contacts. Second, and in order to document the perceptions or opinions of those for whom development initiatives are (purportedly) undertaken, responses to interviews with community elders are part of the thesis data base. The central findings of the research are that the failure of development initiatives to date can be traced in part to lack of regard for geographic factors in development programs and projects. The study concludes with suggestions on how to better incorporate geographic factors into the design and implementation of development policies, principles and practices that are required to attain sustainable development in the Lake Victoria Region of Uganda.

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CHAPTER ONE

1.0 INTRODUCTION

At independence (1962), Uganda was the envy of the neighbours, with one of the strongest and most promising economies in Sub-Saharan Africa (Uganda: Policy Framework Paper, 1989/90-1991/92). Favoured with a good climate and fertile soils, the agricultural sector was so self-sufficient that it served national needs and also generated some foreign exchange. The industrial sector, though small, supplied the economy with basic inputs and consumer goods, and contributed to a favourable foreign exchange balance through exports of textiles and copper. Uganda's transport system was regarded as one of the best on the continent and included access to an efficient network of road, railway, port and airline facilities. With an established medical network and infrastructure, the level of health services provision was among the highest in Africa. School enrolment was still low, but the country had (by African standards) developed a reputation for quality of education at all levels. The early years after independence demonstrated the country's "economic potential". Real Gross Domestic Product (GDP) grew by 5.8% from 1968 to 1970, with per capita GDP increasing at least 3% per year (World Bank, Report No. 8179-UG, 1990).

However, the decade and a half of political unrest that started in 1971 radically reversed, and virtually erased, the earlier economic and social progress. Skilled professionals fled the country, public and private sectors grew bloated with abandoned or confiscated industries, and

professional standards within the public service eroded. The breakup of the East African Community (Uganda, Kenya and Tanzania) in 1977 precipitated further economic decline, since the Community had provided a thriving market for Uganda's few industrial exports and a reliable access route to foreign trade. Further damage was caused by the 1978/79 and 1981/86 internal civil wars.

In the 1970s and for a large part of the 1980s, Uganda had come to symbolize the developing world's disasters and disorders in their direst forms: tyranny; widespread infringements on human rights; famine; AIDS; malaria; cholera; typhoid; corruption; black-marketeering; economic collapse; tribalism; civil wars; and institutional collapse of the state due to a massive breakdown of government services. It appears that in slightly more than a decade Uganda suffered most if not all the current afflictions of the developing world (O'Connor, 1988).

From the point of view of results, outcomes, or effects of those negative initiatives or impositions, they were obvious and easily discernible. As has been observed, in social terms those years were obviously appalling for Ugandans (O'Connor, 1988). From a research or remedial action perspective, however, those years are a source of difficulty and confusion for outside scholars and analysts of the country's development because of the seemingly large number of causes of the country's troubles. Which of them are of fundamental importance? Which are of secondary significance? And which may appear significant but were only of marginal influence?

At one time the answers to these questions seemed clear: that is, they appeared to owe their origin to Idi Amin, the former President of Uganda from 1971-1979. It was because of Idi Amin, according to popular wisdom, that there had been genocide, rampant inflation and widespread economic inefficiency, not to mention political decay throughout the country (O'Connor, 1988).

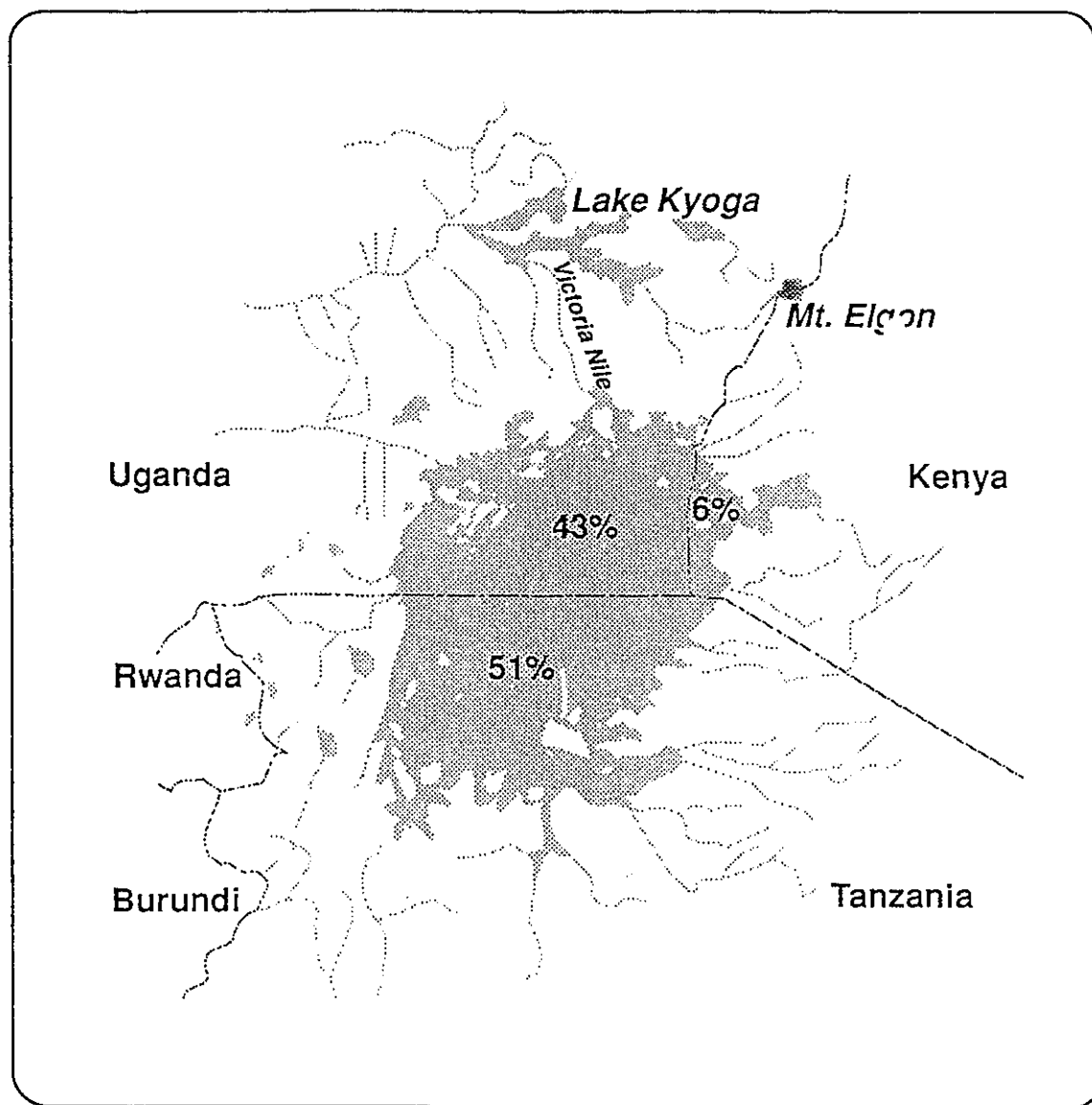
As history shows, however, Idi Amin was driven from power (in 1979) that is, fourteen years ago. Nonetheless, today, agriculture remains subsistent and low-yielding, industry is uncompetitive, institutions are fragile, regional disparity and underdevelopment are endemic, living standards have hit "rock bottom", and the "once impressive social infrastructure lies devastated" (U.N. Commission for Africa, 1987).

To compound the problems, the population is fast increasing at 3.2% per year (Wheeler and Kostbade, 1990, p. 478; Provisional Census Results, 1991), foreign debt (\$4.0 billion) threatens further economic decline, old and long-doubted development practices remain in use, rural-urban migration is high, and environmental degradation is everywhere visible.

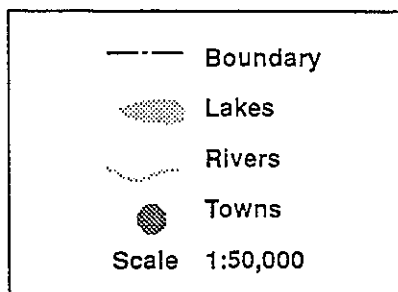
In brief, for Uganda, indications are that the substantial number of implemented development initiatives (projects/programs) have not yielded satisfactory results, and that the need for a policy re-orientation is more than urgent, it is critical. This research seeks to contribute to that re-orientation by examining the development record in the Lake Victoria Region of Uganda for the period 1965-1991, and by assessing the initiatives projected up to the year 2000. The study area, the Lake Victoria Region of Uganda, which is part of the Lake Victoria Basin that also includes portions which "belong" to Kenya and Tanzania, is shown in Map 1.

The Lake Victoria Basin

Map 1



Legend



1.1 THESIS CONTEXT AND RATIONALE

In economic terms, development refers to the capacity of an economy (local/regional/national) to generate and sustain an annual increase in the Gross National Product or GNP (Knox and Agnew, 1987, pp. 72-82). However, even when such growth has occurred, problems of poverty, inequality, unemployment, illiteracy and ill-health have persisted, leading to increased calls for "a new order" in which redistribution of benefits across a society accompanies socio-economic growth. In geography, and in this thesis, "development is seen as a more complex spatial phenomenon than can be addressed by mere economic growth" (ibid, p. 78).

Hence, the needed new order involves an increase in the availability and distribution of basic, life-sustaining commodities (needs): more education facilities, health services, affordable housing, transport networks, food, security, etc., in order to increase the material welfare, self-esteem and expansion of socio-economic choice to individuals and regions. This calls for a new policy paradigm and a more equitable and effective development orientation, with an increased emphasis on the human and geographical factors underlying the selection and delivery of development programs/projects.

The broad objectives of this research, therefore, are: 1) to examine the significance of spatial location, distribution, and structure to the success/failure of development initiatives (projects/programs); and, 2) on the basis of a literature search and empirical evidence, in the field findings, to propose a new or different development policy orientation wherein explicit, due regard is shown for the contribution(s) which geographic factors make to the success/failure of development programs/projects.

1.2 RESEARCH OBJECTIVES

This research is concerned primarily with examining development initiatives (projects/programs) in terms of where they are, why they are where they are, and the associated spatial implications of development decisions. The main research objectives are summarized as follows:

1. To identify, analyze and synthesize the locational rationale, and the spatial and non-spatial aspects, of development initiatives implemented in the Lake Victoria Region of Uganda (Map 2), from 1965 and projected up to the year 2000;
2. To identify the areas most likely to experience the impacts (success/failure) of development initiatives in the next decade;
3. To assess, on the basis of the acquired data and data findings, the spatial and non-spatial effects development initiatives have had and could have on the environment of the Lake Victoria Region of Uganda; and,
4. Based on the research findings, propose a policy framework that better enables inclusion of geographic considerations in initiatives to enhance or mitigate development impacts on the Lake Victoria Region's ecosystem.

1.3 RESEARCH DESIGN

An initial, fact-finding task is to establish the extent and degree to which development initiatives have resulted in better shelter, improved municipal services, increased employment opportunities, improved transport networks, more educational facilities and health services, etc., or their converses, for the people in both the rural and the urban areas within the Region.

A related, follow-on task is to then assess whether the initiatives respected the goal of "sustainable development" which has been referred to as:

"... the use of environmental resources in a manner that will not jeopardize the needs of future generations, and development that is compatible with cultural values" (The Brundtland Commission Report, 1987, p. 43).

It is particularly appropriate that a sustainable development context shape the research design because of expressed concerns that exploitative development could endanger the Lake Victoria Region's irreplaceable environmental support system (Ogoso Opolot, 1991; Ongalia Ekomedot, 1991; Ozanne, 1989; Mulinde-Musake, 1990). Moreover, and for reasons elaborated below, development as part of sustainable development is not taken to mean building infrastructure or merely expanding GNP. Rather, development is taken to mean:

"... creating jobs, improving the living standards of the many rather than the few, and helping to break the cycle of poverty by utilizing the knowledge and experience resident within individual communities. Development entails enabling talented women and men to enrich their skills, strengthen their professional networks, share common experiences and expand their abilities to contribute to the future of their regions and countries - improving without being transformed" (Mazrui, 1988, p. 337).

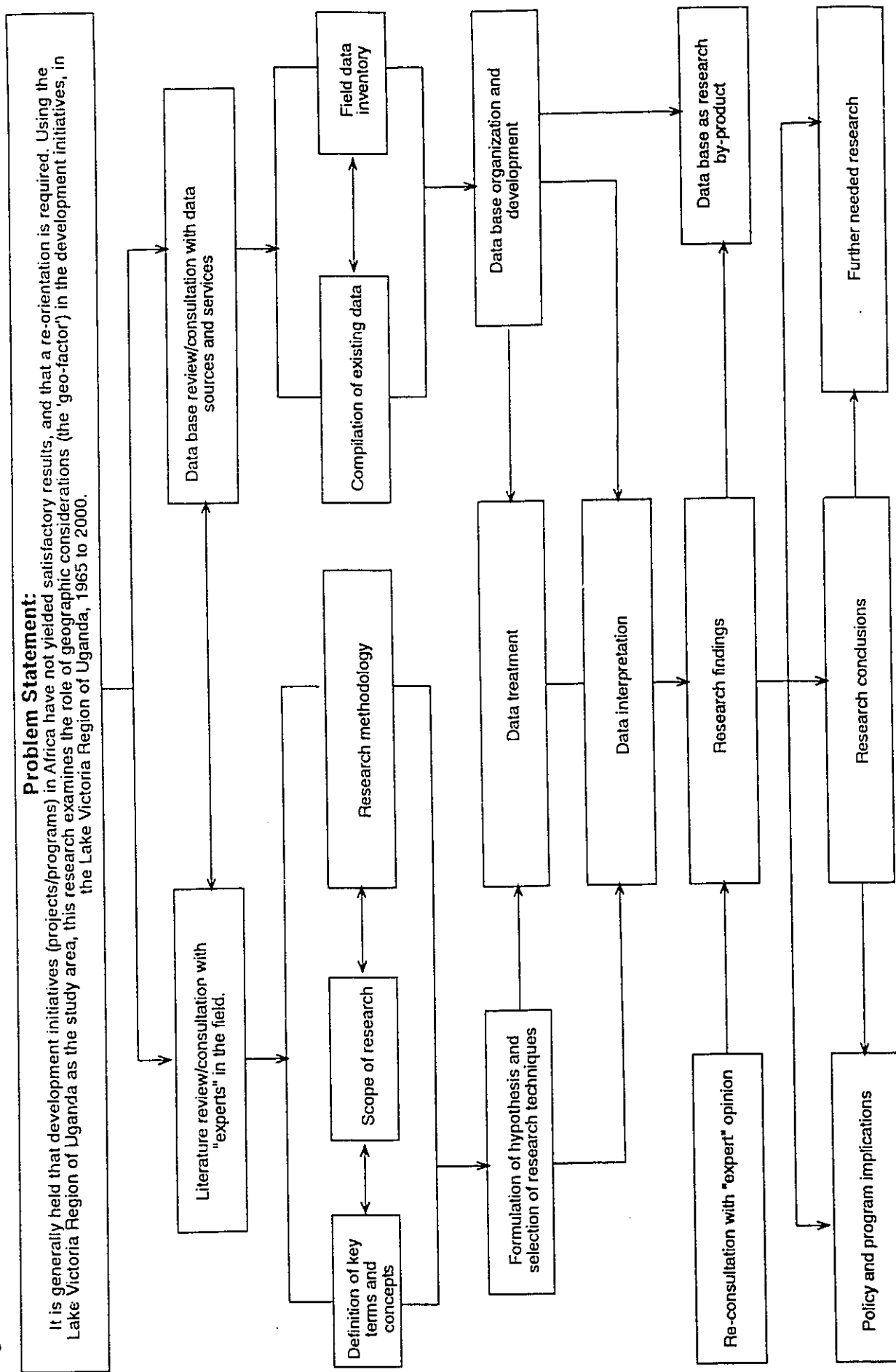
In order to illustrate the overall structure of the study, a flow chart of the Research Design is included (Figure 1) which connects the problem statement and the research activities undertaken.

1.4 RESEARCH VARIABLES

Three bodies of variables or associated sets of variables are examined:

1. The nature of development initiatives in terms of the sectors of emphasis over time;

Figure: 1



2. The location of projects/programs; and
3. The stated objectives of the development initiatives.

These variables or variable sets provide a basis for establishing dispersal/concentration/distribution patterns, and structures of development initiatives over space and time. They also provide a rationale to conduct the examination of nodal, multi-nodal, linear, and multi-linear development patterns, trends, structures and processes. Moreover, the research variables establish the main elements of emphasis -- economic, social, cultural, ecological, urbanization, industrialization, foreign exchange, etc., -- and the means for assessing the success or failure of development initiatives.

Most important for this study, however, the variables provide a basis for assessing the role of geographic considerations (the 'geo-factor') in the development initiatives implemented in the Lake Victoria Region of Uganda, from 1965 to 1991, and projected up to the year 2000. The term 'geo-factor' as used in this study has been defined by Wellar as:

"Any and all geographic considerations - laws, theories, concepts, methods, techniques, knowledge, information, data, etc. " (Wellar, 1990, p. 253)

Illustrative geographic considerations pertinent to the present research include spatial proximity, concentration, dispersal and distribution of phenomena over time; heartland/hinterland relationships; systems of urban places and central places; centrifugal/centripetal forces; transportation networks; growth poles and market areas; and, most importantly, urbanization processes in combination with methods and techniques of spatial analysis. These kinds of concepts and associated variables are key elements in geographical studies of the frameworks, rationale, and spatial outcomes of development initiatives (projects/programs).

The three bodies of variables are, therefore, fundamental to a rationale for establishing the influence of geographic considerations (the 'geo-factor') on the nature, pattern, and impact of development initiatives in the Lake Victoria Region of Uganda over the last thirty years, and for suggesting an alternative which better accounts for the effect of geographic factors on development initiatives.

1.5 RESEARCH HYPOTHESES

Two research hypotheses guided the research:^{*}

1. The central hypothesis (H_0) states that:

Geographic considerations (the 'geo-factor') affect the nature, pattern and impact of development initiatives (projects/programs) in the Lake Victoria Region of Uganda.

The basis of H_0 stems from the observation that:

"... space is a neglected dimension within the development literature, and a belief that development initiatives which treat communities as though they were spaceless aggregates, are at best incomplete and at worst inappropriately misleading." (Gore, 1984, p. 3).

A corollary working hypothesis (H_1) is expressed as follows:

Development initiatives which neglect the spatial dimension are incomplete and their consequences may range from ineffective to counter productive to destructive.

These hypotheses (H_0 , H_1) provide the context and direction for exploring the premise that there is a causal relationship between geographic considerations and the consequences of development initiatives.

^{*} The working hypotheses serve an indicative purpose, and hence they are presented as assertive statements involving key concepts and variables. It is noted and acknowledged that for the purpose of hypotheses' testing logic requires that hypotheses be structured so as to deny the consequent (Watson and McGaw, 1980).

1.6 POLICY QUESTIONS

The broad underlying policy questions examined include the following:

1. Should the goal of development policy in the Lake Victoria Region of Uganda be to restore the pattern of service provision that once existed, or should it be to establish a more equitable distribution even if higher costs may be inevitable?
2. Have urban places in the Region been more adversely affected than the rural areas in the last thirty years and, if so, do they warrant receiving any special attention in future development initiatives?
3. Should the public/private investments in the Lake Victoria Region of Uganda be greater than those in the peripheral hinterlands?

From another perspective involving narrower or more specific policy objectives, the following questions are among those raised when contemplating the Lake Victoria Region's development record over the last thirty years:

1. What has been happening to poverty?
2. What has been happening to unemployment?
3. What has been happening to urban/rural/regional inequality?
4. What has been happening to the quality of the environment?

1.7 KEY TERMS AND CONCEPTS

The key terms and concepts underlying this research come from several fields, which increases the potential for awkward and even erroneous use or cross-referencing. The following sub-sections are included to briefly address some of the key terms and concepts, the understanding of which is essential to an appreciation of the role of geographic factors in development initiatives implemented in the Lake Victoria Region of Uganda from 1965 to 1990, and projected up to the year 2000.

1.7.1 Causal Inference: A necessary condition for causal relationships is one that must be present for a subsequent event to occur, but such a condition does not guarantee that the subsequent event will always occur (Walizer and Wienir, 1975, pp. 13-19). Four conditions must be met before causal relationships can be formally demonstrated. These are:

1. Time order;
2. Mutual patterned change or association;
3. No other plausible explanation; and
4. Belief in a true link (ibid, p.15)

1.7.2 Development Impact: Land use conversion, wetlands' invasion, deforestation, river channel diversion, land, water and air pollution, change in value judgment, or any other condition that influences the development or existence of an organism or a community is termed a development impact (IJC, 1989).

- 1.7.3 Impact Assessment: A class of study or inquiry that examines the significance of consequences arising from the policy, plan or program initiatives of governments, business, or individuals (Wellar, 1988).
- 1.7.4 Policy: The purpose, extent, process, and outcomes of government initiatives at all levels -- local, regional, national, etc. Policy is the governing principle or plan for any development effort (Wellar, 1990)
- 1.7.5 Policy Variables: Policy variables represent those elements of a society's affairs which governments are able to use as the means to express and achieve policy objectives (Wellar, 1987; Smith and Wellar, 1992). Their role in the process, content and direction of regional policy formation is illustrated in Figure 2, which also serves to present and relate many of the related policy and research concerns discussed in this research study.
- 1.7.6 Wetlands: Swamps, marshes, bogs and fens, lands where water is at, near or above the land surface long enough each year to support the foundation of hydric soils, and to support growth of hydrophyte as long as other environmental variables are favourable (IJC, 1969). Water and wetlands comprise 32,227 sq.km. or 54.77% of the area of the Lake Victoria Region of Uganda (Provisional Census Results, 1991).
- 1.7.7 Functional Discontinuity: For the purpose of this thesis, a functional discontinuity is defined as:

"an infinitesimal change in the function that either implies that the function has no calculable value or that it jumps or drops in value by a finite or infinite amount" (Universal Library Systems, 1969, p. 189).

Figure 2

**COMPONENTS AND ELEMENTS TO CONSIDER IN EXAMINING THE PROCESS,
CONTENT, AND DIRECTION OF REGIONAL POLICY FORMATION**

COMPONENTS	ELEMENTS
Government Players in the Regional Policy Process	Federal/Central State/Provincial Regional/Local
Status of Government Authority for Regional Policy	Centralized Centralizing Joint Devolving Devolved
Regional Policy Approach/Philosophy	Dirigisme Accommodation Laissez-faire
Regional Policy Reference	Explicit Implicit
Regional Policy Impacts	Direct Indirect
Regional Policy Objectives	Growth/Efficiency Balance/Equity Quality of Life ...
Regional Policy Domain-Spatial	Places/Poles Centres Hinterlands/Fields ... Links/Flows Patterns/Densities
Regional Policy Domain-Sectoral	Political Moral Economic Social Cultural Environmental
Regional Policy Instruments	Programs Plans Regulations Controls By-Laws ...
Regional Policy Variables	Interest Rates/Taxes/Loans/Grants/Subsidies/Public Works/ Immigration/Levels/Tariffs/Permits/Zoning/ Pollution Indexes/Social Service Levels/Welfare and U.I.C. payments/.../.../...

Source: After Wellar, Barry, 1987, p. 69, "Urban Impact Assessment and MSUA", in The Ministry of State for Urban Affairs: A Courageous Experiment in Public Administration, H.P. Oberlander and A.L. Fallick, eds, Vancouver, B.C.: The Centre for Human Settlements, University of British Columbia, pp 65-91 and 135-142.

- 1.7.8 Development Program/Development Project: Any initiative that creates jobs, improves the living standards of the many rather than the few, and that helps to break the cycle of poverty by utilizing the knowledge and experience resident within individual communities (Mazrui, 1988, p. 338)
- 1.7.9 Sustainable development: A development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (The Brundtland Commission Report -- "Our Common Future" -- 1987, p. 43).

1.8 SUMMARY

For the Lake Victoria Region of Uganda in the last thirty years there has been political turmoil and instability, economic breakdown, institutional collapse, corruption, nepotism, visible stagnation and rural/urban/regional disparities. In brief, changes to the regimes in power seem to have brought few positive changes in the established development process, because each new regime appears to have either continued the failed development process then in place, or introduced new features which did not yield positive, productive outcomes. While acknowledging that many factors are involved in development, this work examines the role of geographic considerations in development planning and their effect on the success or failure of development initiatives.

CHAPTER TWO

2.0 LITERATURE REVIEW

Regional development is a complex and diverse field of application, research and analysis. Concerned with the development process in all countries, "it covers an enormous geographical area and a large portion of modern history" (Gore, 1984). Such a large subject area has, therefore, resulted in a varied body of literature in a number of specialist journals and other publications encompassing such diverse issues as:

" the nature and feasibility of industrialization, the problem of small-scale agriculture and rural development, trade and other links between developed and developing countries and their effect on the development prospects of the majority poor; the nature and causes of poverty and inequality; and the record and future prospects of regional development planning as a method of accelerating local, regional and national development" (Gore, 1984, p. x).

This section examines the literature in terms of the regard or lack of regard for geographic considerations in regional development. Further, it reviews the literature for discussions on how and why geographic considerations should or should not be treated in regional development planning. By investigating the literature in a dialectical manner, the thesis initially seeks to identify the full array of pro and con arguments about incorporating geographic factors in regional development initiatives. Then, drawing on the first phase, the next step is to synthesize the literature and the current research to derive a rationale whereby, if appropriate, geographic considerations are, or are better incorporated in regional development initiatives (projects/programs).

2.1 HISTORICAL REVIEW OF DEVELOPMENT APPROACHES

Since the 1960s, various approaches to regional development planning have been promoted and adopted in Uganda and elsewhere:

- 1- locational programming of investments within a specific sector like agriculture or industry, to promote development in certain areas;
- 2- plans to co-ordinate the location of roads, market centres and credit facilities to accelerate economic growth within a particular region;
- 3- creation of regional development nodes to promote development in a given depressed area, or to manage water resources in physically defined areas; and
- 4- adoption of decentralization as a regional development policy (Canadian International Development Agency, Report 1990).

Hence, if, following Friedmann (1966) one defines regional development planning as: "...planning concerned with the where of development..." (Gore, 1984, p. 12), then Uganda has had an upsurge in the activity (CEPAL, 1980; Stöhr and Taylor, 1981). The question that remains to be answered, however, is not simply the where of development initiatives but, rather, the "So What" in terms of the results and consequences arising (Wellar, 1987). Variations of topics have been within the initiatives on many occasions, so the following is a brief, general review of a limited number of central ideas and contributions to the literature.

To begin, the conceptual basis for making decisions about where development initiatives should be located, where urban growth should occur, or where particular land use activities should be encouraged is generally accepted. That is, it:

"... lies in a growing body of literature which may be accepted as regional development theory" (Gore, 1984, p. 6).

However, as pointed out by Ross and Cohen (1974), much of the field remains in question because of lack of agreement about what regional development policy really is, and even less agreement about how it can or should be pursued. The following brief review appears sufficient to illustrate the Cohen-Ross position.

Regional development theory is said to have gained recognition in the 1950s following Myrdal's (1957) model, and his (1958) publication of "Economic Theory and Underdeveloped Regions", which were based on the contention that:

"... in a market economy, changes in the location of economic activities produce cumulative advantages for one region rather than a straight forward equalization of advantages across all regions" (Myrdal, 1957; 1958 in Knox and Agnew, 1990, p. 78).

In the short-term, Myrdal argued, growth in one region is at the expense of other regions. But, he also observed that in the long-term, "spread-effects" can counteract the "backwash-effects" of regional concentration as "demands in backward regions are met locally" (Knox and Agnew, 1990, p. 77).

Myrdal's model was followed by those of Hirschman (1958), and Hicks (1959). Hirschman's model assumes early "polarization" and a "trickling down" effect, but argues that

early polarization eventually produces a countervailing trickling down rather than cumulative returns to initial advantage (Knox and Agnew, 1990, p. 79). Hicks' model, on the other hand, gives more attention to flows of "labour and capital" from "growing" to "lagging" regions rather than vice versa (ibid., 1990, p. 81).

John Friedman in a series of articles published in the late 1950s and early 1960s also deals with "the locational aspect of economic development and regional planning", and along with William Alonso (1964), edited "Regional Development and Planning" as the first collection of scholarly writings on the subject (Knox and Agnew, 1990; Gore, 1984). A central argument in the collection is that:

"...in planning development, the arithmetic of macro-economics has need of and is made more powerful by the geometry of regional considerations" (Friedman and Alonso, 1964, p. 1; Knox and Agnew, 1990; Gore, 1984, p.2).

However, despite the large literature which examines spatial and non-spatial aspects of regional development disparities, and which proposes including spatial and non-spatial regional considerations in regional development planning, arguments are made that theory has not been matched by practice in producing tangible outcomes. The problem in part, it is suggested, is that the theories have related more to the "know-what", rather than the more pressing realities involving "the know-how", and "the so what?" which are key to translating thoughts into actions (Wellar, 1987). And, it is maintained by Buttimer (1979), that misplaced focus has also tended to bury rather than promote scholarly creativity, and to limit discussion among the people actually involved in development initiatives and issues. That occurred, in her view, because the direction and volume of applied regional development research appears to be caught up in practical

realities which leave little room for theoretical considerations. As Buttimer observed in regard to research activities, they are:

"...shaped by the practical and technical interests of the sponsors, which in turn tends to favour the promotion of the existing ideological and economic conditions" (Buttimer, 1979, p. 21).

As for explorations of relationships among geographical considerations, development and society, the literature is sparse insofar as Uganda in general is concerned, and only a very limited amount of related materials were found. In fact, the literature review yielded only two works, Munger (1952) and O'Connor (1988), that connected geography, development and society in a study of the Lake Victoria Region of Uganda.

2.2 BASIC PRINCIPLES OF LOCATION

One limitation of regional development theory (Gregory, 1978) is that it isolates simplifications that are specific to certain historical, cultural, temporal, technological, and geographical aspects of particular areas, and then makes universal generalizations. Another limitation is that regional development models are viewed and implemented wholesale with no areal differentiation considered (Gregory, 1978).

However, as Chorley (1972) observes:

"... it is important to differentiate between models and theories about the real world, ... by carrying out a rigorous interpretation of the model results in the real world terms." (Chorley, 1972 in Development Dialogue, 1989: 1, p. 17)

As summarized in Table 1, there are a number of ways in which the locational concepts (Haggett, 1966; Abler, Adams and Gould, 1971) can be incorporated in regional development models and practice. These locational concepts -- distance, accessibility, interaction, diffusion, transportation, and agglomeration -- have been among the geographical concepts within which regional development patterns in Uganda have occurred over the years since the 1950s. The current core-periphery, rural-urban, and regional diffusion systems and patterns in the Lake Victoria Region of Uganda are, therefore, the cumulative outcomes of the processes of geographical differentiation and interaction.

A central concern of this research is to examine how these concepts have worked together in different ways and at different time periods, and how they have changed in relative significance during the different phases in the evolution of regional patterns and systems in the Lake Victoria Region of Uganda in the last thirty years.

2.3 REGIONAL DEVELOPMENT AND GEOGRAPHY

Geographers have by definition focused their interests on the spatial distribution of phenomena. Thus, practically all explanations of spatial distributions -- no matter whether they have been formulated as general theories or not -- have at least partly stressed an interaction element. In fact, Ullman (1953) suggested that one of the geographer's main concepts -- "areal differentiation" -- can be considered a sub-concept of "spatial interaction" (p. 461). Ackerman (1958, 1963) also made a similar observation, stressing the "connectivity" within a system as its most important characteristic.

Table 1

LOCATIONAL CONCEPTS

1	Distance	Regional development is about the impact of distance and space upon development initiatives (projects/programmes). Unfortunately, locational models always begin with the unfortunate assumption of an isotropic plain and, deduce the independent effect of distance measured in terms of spatial relationships, cost, or perception by a decision-maker, in determining where the initiative is to be located. An important continuity, however, lies in the premise that "distance or space is an independent variable producing predictable and recurring spatial and non-spatial patterns of developmental activities". (Abler, Adams & Gould, 1971)
2	Accessibility	Some locations are more accessible than others. Hence, they are easier to reach or are more central. This reflects the importance of the assumption of the "least-effort" in human behaviour associated with "distance-decoy" in the intensity of development activities, as one moves away from the most central location. People are, therefore, viewed as "effort and distance minimizers". (Haggett, 1966)
3	Interaction and movement	
	Complementarity	In order for two locations to interact, there must be a demand in one and a supply in the other.
	Intervening Opportunity	Complementarity generates interaction only if no intervening opportunity of supply is available.
	Transferability	If the distance between the locations of demand and supply is too great or too costly, interaction will not take place, even if there is perfect complementarity and lack of an intervening opportunity.
4	Diffusion	Ideas spread across areas both contagiously (friction of distance) and hierarchically (directly) between more accessible locations (Knox and Agnew, 1990, p. 81). However, there are such barriers as topographical, cultural, technological, and informational restrictions which may hinder spatial diffusion. Thus, adoption of innovative ideas largely depends upon "nearness to previous adopters", (Abler, Adams & Gould, 1971)
5	Transport Network	Accessibility is affected by transport networks that integrate locations and "interaction is channelled by these networks". (Ullman, 1956)
6	Agglomeration	The more accessible locations acquire advantages in the form of agglomeration of development activities or centralization. They attract activities which in turn attract other activities. This is the determinant of activity clusters. Generally locational theories tend to regard agglomeration/centralization as "a higher-order principle from which the operation, in practice, of other principles derives". (Isard, 1956; Ullman, 1960)

Source: Adapted from Ullman, 1956

Ackerman further claimed (1963, p. 437) that:

"... differences are significant only in so far as they help to define the connectivity or information flow."

It appears, therefore, as if Ullman and Ackerman have a very basic factor -- spatial interaction -- in common. As such, it appears that both spatial interaction and spatial connectivity, expressed in a spatial context, also imply the idea of movement between and among points, along lines, and between and among polygons (areas or regions). Or, from a different perspective, emphasis could be placed on the difficulties of making connections among points and polygons, or traversing lines. Variations on those fundamentals are provided by Bunge (1964) who discussed the "nearness problem" i.e. different distance relationships, as the cardinal problem in geography (Bunge, 1964a, 1964b), by Nystuen (1963) who posited that "distance" together with "direction" and "connection" or "relative position" are the basic geographical concepts, and by Wellar (1993) who combined numerous geographic concepts and research themes in his commissioned report on the fundamentals of geographic information systems (Wellar, 1993).

Regional scientists for their part also consider "distance" as an important variable in their studies. As Isard (1960b, p. 9) stated:

"... regional science focuses upon spaces and systems of spaces, regions and systems of regions, locations and systems of locations. Distance - physical, economic, social and political - are key concepts."

In the same article (pp. 15-16), he also comments on the relationship between the regional scientist and the geographer by viewing both as:

"... general spatial practitioners over the several social sciences, one at the abstract (theoretical level), the other at the more empirical/grassroots level."

Texts which elaborate the themes noted above are those of: Birch, 1963a; Blaut, 1962; Garnesey 1956; Garrison, 1956c; Hajnal, 1954; Hartshorne, 1951, 1959; Hooson, 1962; James, 1957, 1958; Kiuchi, 1963; McCarty, 1954, 1959; Saushkin, 1963a, 1964b; Schaefer, 1953; Spate, 1960, 1963; Stevens, 1958; Stewart-Warntz, 1958b; Ullman, 1953; and Warntz, 1957a.

It is appropriate to complete the review by a reference to the scholarly works of Munger (1952) and O'Connor (1988) in which spatial interaction is analyzed with a specific reference to Uganda. The study by Munger (1952), "Relational Patterns of Kampala, Uganda";

"... attempts an understanding of the City of Kampala through an examination of its functions and its relationships with the world outside its urban area." (p.4)

The investigation by Munger is restricted only to the physical, economic, and cultural facts and ideas which, when woven together, form the web of the city's (Kampala) external relationships. It is not an enumeration of "jigsaw bits of fact" that was sought, but the completion of a total picture that reveals broad relational patterns.

The study by O'Connor (1988), "Uganda: The Spatial Dimension",

"... stresses how Uganda, since the 1970s through the 1980s, has witnessed a reversal of a process of national spatial integration which was taking place during the 1960s." (p. 89)

O'Connor highlights how this process has declined and how a substantial degree of national disintegration has taken place such that, for many people, "Uganda has become less and

less of a meaningful entity" (O'Connor, 1988). The need to give explicit attention to the residents of particular areas and, to their distinctive problems is emphasized. In fact, it is maintained that from a geographic perspective, development should:

"... suggest that the issues of where be confronted, and that neither short-term rehabilitation nor long-term development can be tackled effectively behind a smoke-screen of national aggregates." (O'Connor, 1988, p. 91)

Consequently, resolution of regional development issues requires thoughts and decisions not just about Uganda as a whole, nor even about rural versus urban areas, but about each part of the country. The longstanding concern that still needs serious attention is therefore to better understand:

"the role of distance, connectivity, direction and interaction in the existing locational patterns and systems" (ibid, p. 93).

2.4 AN ALTERNATIVE DEVELOPMENT FRAMEWORK

Having gone down a (research) path similar to this one, and finding the traditional approaches to be flawed, Knox and Agnew (1990, 76-82) concluded that an alternative framework was needed if we were to better understand the significance of location for development initiatives. It was their finding that an approach was needed that could address the spatial and non-spatial concepts and efforts, first in their local, regional and national contexts and, second, as an evolving process.

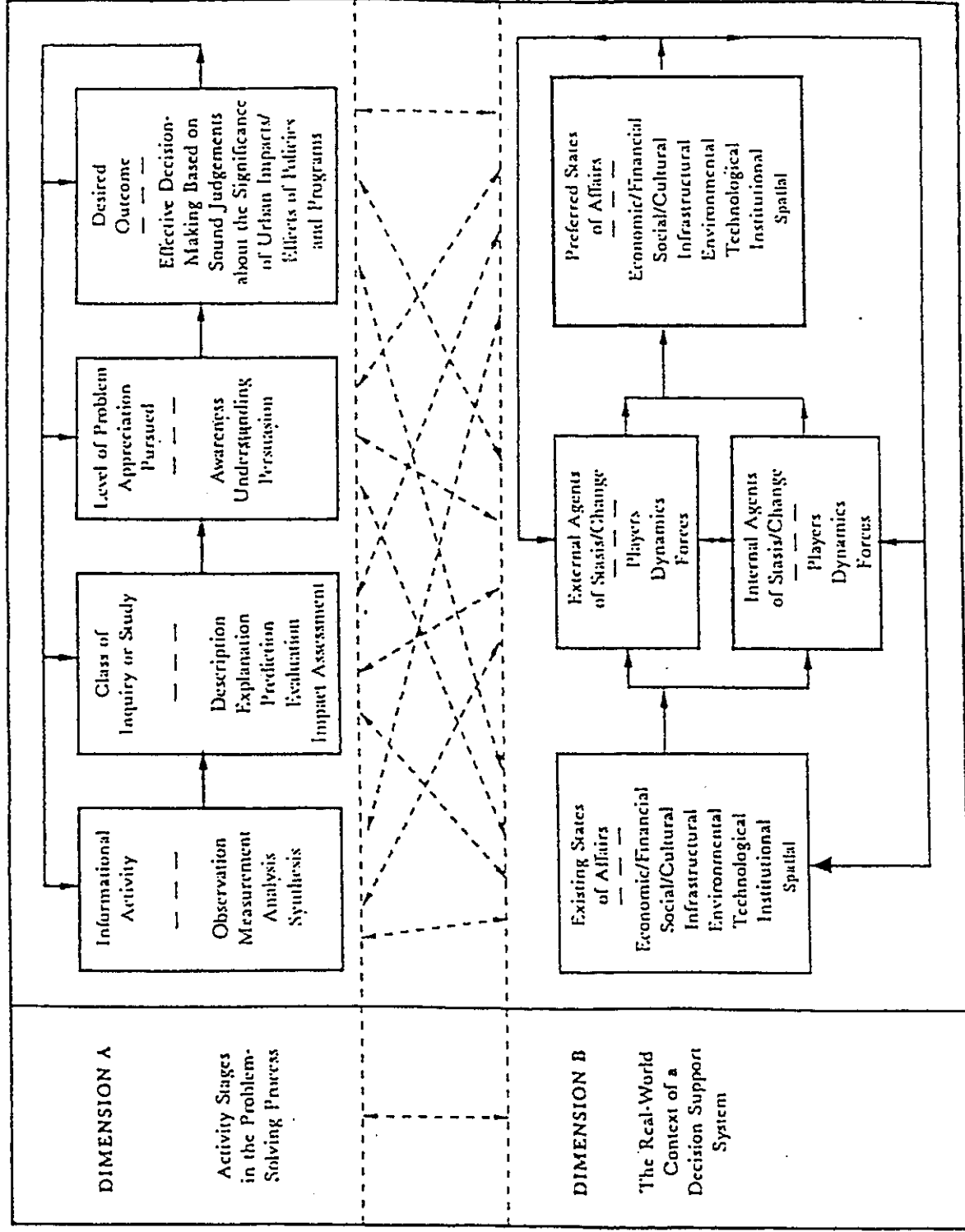
Knox and Agnew therefore proposed an historical-geographical approach, whereby the principles of location -- distance, accessibility, interaction, diffusion and agglomeration -- are

regarded as historically changing rather than fixed in meaning and significance. They did not, however, provide a logical-simulation or other kind of model to schematically illustrate their approach or framework, nor did they discuss in adequate detail how to move the framework from a conceptual to an operational mode.

In the absence of such a schematic on the part of Knox and Agnew, a search was undertaken to ascertain which existing models could be used to "fill the gap", and to provide a picture that presented the essence of their argument. A review of the literature yielded a number of candidates, mostly of the flow diagram variety. For the purposes of this research, the decision support model of Wellar (1984) was deemed to best relate the ideas of Knox and Agnew to the research problem under investigation. The Wellar model, shown in Figure 3 illustrates many of the concepts and concerns that are central to the combined historical-geographical approach for studying the role of location in development. That is, the principles of location -- distance, accessibility, interaction, diffusion and agglomeration -- are regarded as historically and geographically changing rather than fixed in meaning and significance. And, they can be accommodated in real world, historical-geographical terms in Dimension B, and in research terms via Dimension A.

Following from that general basis, the alternative approach continues to stress the importance of government policies in regulating and directing development activities. However, unlike the "neo-classical economic liberal/structuralist" models (North, 1955; Perroux 1955, 1961; Myrdal, 1957; Hirschman, 1958; Hicks, 1959; Wingo, 1961; Berth and Stein, 1964; Bense, 1984; and Massey, 1984) which assume a simple, necessary relationship between their predictions and

Figure 3 RUDIMENTS OF A DECISION SUPPORT SYSTEM (DSS) FOR
IMPACT ASSESSMENT



Source: Adapted from B. Wellar, 1984, "Information for Decision-Making by Rural Public Authorities", Local Leadership and Rural Development, Washington: USDA, Extension Service and Economic Research Service, p.37)

geographical patterns, the historical-geographical framework as proposed does not assume the necessary outcome of particular patterns and trends. Hence, the terms "core" and "periphery", or, "heartland" and "hinterland", around which most current regional development is organized are taken to be heuristic and merely suggestive rather than definitive (Knox and Agnew, 1990).

As noted by Sayer (1976), there are always anomalous instances owing to dependence effects. In other words, it is not a question of spatial outcomes (like Lösch's hexagonal grids or Isard's regional clusters) that is the focus for understanding regional development problems, patterns, trends and structures. Rather, emphasis is put on the historical-geographical processes and relationships, out of which geographical patterns and trends continuously emerge and change.

Moreover, given the historical-geographical connections, it follows that the geographer also needs a sense of time and should, therefore, have some understanding of history:

"...geography is, it is true, very much concerned with the present, but the present is so moulded by the past that geographers have always to ask themselves how the features and patterns of today have developed from the conditions of yesterday" (Steel, 1969)

The overriding feature of the connection, then, is to make explicit that there is not only a geography behind history, but also a history behind geography. Both subjects depend upon one another. As Peter Heylyn (1621) recognized in his *Microcosmus*, which translates as a little description of the great world:

"Geographie without Historie hath life and motion but at randome, and unstable", and, "Historie without Geographie like a dead carcasse hath neither life nor motion at all" - "If joined together", he stated in his *Cosmographia* (1649), "they crown our reading with delight and profit: if parted, they threaten both with a certain shipwreck" (Heylyn, 1621, in Steel 1969)

The lesson recalled is that space and time are inextricably interlinked (Einstein, 1915). Together they form an interconnected, interdependent, and interrelated web with human activities. It follows, therefore, that in (future) development initiatives, emphasizing the regional similarities as well as differences in patterns of development is desirable, so as to provide a basis for a useful empirical frame of reference with respect to sustainable development strategies.

2.5 SUMMARY

The literature review undertaken for this study yielded key findings about the development programs/projects initiated over the past 30 years, and the literature in the regional development field. First, it appears clear that the central focus of development initiatives has been of a short-term, economic nature. Moreover, many of the reviews of those initiatives have tended to be narrowly sectoral, with minimal or no reference to the spatial dimension. Second, the literature in the development field has been slow to move beyond the simple and often superficial questions of "How much?" or "How Many?" when assessing development initiatives. As a result, the regional development field in general has barely begun to address the more fundamental question of "So What?" when examining the products, or effects of development initiatives. The overriding impression drawn from the literature review, therefore, is that in order for development initiatives to succeed in Uganda it is necessary to devise and implement solutions that are effective and appropriate for each time and location, rather than seeking to achieve a comprehensive blueprint for implementation across the entire Region.

CHAPTER THREE

3.0 PROBLEM STATEMENT

Writings on Uganda's traumatic experience of the fifteen years of political turmoil and wars (1971-1986), and on the priorities in reconstruction and rehabilitation (1986-1992) have related to the country as a whole, with very little attention being given to regional variations within the country (Abrams, 1980; Brett, 1973; Brock, 1968; Gertz, 1980; Green, 1981; Hall and Belshaw, 1972; Hamilton 1984; Mazrui, 1988; and O'Connor, 1988). And, a similar macro-level approach was adopted for two recent comprehensive reviews, "Uganda Now: Between Decay and Development", and, "The Changing Uganda", both edited by H.B. Hansen and M. Twaddle (1988, 1991) and published by James Currey Ltd.

Such emphasis on the aggregate national situation was also a common characteristic of most discussions of Uganda's development in the 1960s, including the official five-year development plans (World Bank Survey, 1982). Regardless of the reasons for the macro-level approach, "the result has been a great deal of over-generalization that critically overlooks vital regional variations" (O'Connor, 1988). In brief, and in the main, these regional differences apply to ethnic groups, physical environment, population density, structure of the local economy, and environmental deterioration (O'Connor, 1988). Some of these predate the colonial rule, others are a result of the recent policy decisions and their impacts, and yet others are a reflection of the variations in the nature and extent of the role which the post-1970 institutional breakdown (up to 1986) played in the development of the country.

All these differences are relevant to the future development policies concerning food versus cash crop production; road construction versus building schools; hydro-dams versus health services; industrialization versus environmental protection; and so on. The main problem from the perspective of this research is that the arguments are often transferred from one scale to another (local, regional, national) without explicit, due consideration of the role of geographic considerations in defining development needs, or in implementing remedies to address development needs.

In response to that identified problem, the focus of attention of this research is on the spatial location of development initiatives (projects/programs) implemented in the Lake Victoria Region of Uganda (Map 2), from 1965 to 1991, and projected up to the year 2000. Specifically, initiatives are examined in terms of where they are, why they are in those locations, and the associated spatial and non-spatial consequences on the environment of the Region. The associated informational and study activities (Figure 3) are intended to provide a basis for addressing the "relationships between space, human activities in space, and their consequences in it" (Siebert, 1969, p. 1).

3.1 CHOICE OF STUDY AREA

According to Divic (1985), demographics play an extremely important role in determining development demand. As will be shown, demographics in the Lake Victoria Region of Uganda are changing from what they were in the recent past, and have significantly affected the development situation in the Region. In addition to satisfying the demographic condition,

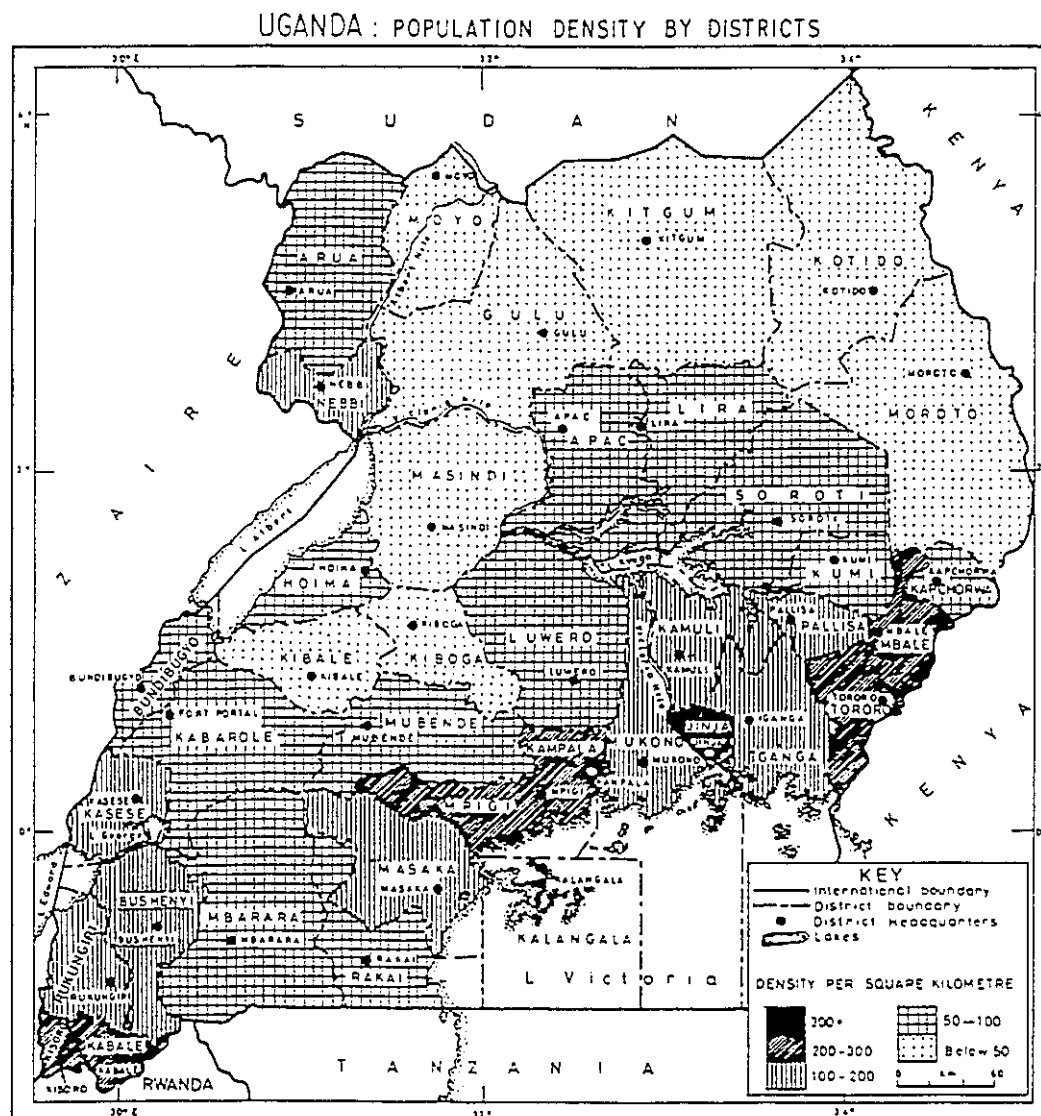
however, there is a more purely geographic reason for selecting the Lake Victoria Region of Uganda as the study area. That is, because of its central geographic position in the country and associated physical, social, regional and other geographic considerations -- natural endowment, rural-urban character, fragile environment, ranges of population density, agricultural and industrial economies, and related heartland/hinterland characteristics -- the Region is very rich in terms of study issues and problems.

Further, on the basis of the literature examined and the research contacts consulted during field work in Uganda (Appendix G), it did not appear that the space/development relationship, nor the spatial and non-spatial consequences related to it, had been studied for the Lake Victoria Region of Uganda. The conclusions drawn were that: 1) the present research does not duplicate work already done; and 2) that with little or no precedent upon which to build, the orientation of the study would be exploratory rather than confirmatory.

As for the physical features, the Lake Victoria Region of Uganda is a vast and fertile area stretching from Rakai District in the west, across the northern shoreline areas of Lake Victoria to the Uganda/Kenya border in Tororo District (Map 3). The Region is bounded in the north by Lake Kyoga, in the South by Lake Victoria, in the east by the lower slopes of Mount Elgon (Masaba) and, in the west by the eastern fringes of the Western Rift Valley.

It is 82,558 sq. km in areal extent, or 34.25% of the national surface area (Table 2). The land component of the Region is 49,296 sq. km or 25.01% of the national land area (Provisional Census Results 1991).

Map 3



This map was composed from the Provisional Results of the Census, June, 1991.

TABLE 2: STUDY AREA POPULATION BY CENSUS, % ANNUAL GROWTH RATES, AND DENSITY (SQ. KM)

REGION	DISTRICT	1969 CENSUS (1000)	1980 CENSUS (1000)	1991 CENSUS (1000)	% ANNUAL GROWTH RATE 1980-1991	AREA (SQ. KM)		POPULATION DENSITY	
						TOTAL	LAND	PER SQ. KM 1980	PER SQ. KM 1991
CENTRAL	RAKAI	182.6	274.6	382.0	3.0	4,973	3,889	71	96
"	MASAKA	451.2	622.6	831.3	2.7	10,611	5,518	113	151
"	MPIGI	513.5	661.2	915.4	3.3	6,222	4,486	143	204
"	KALANGALA	6.8	8.6	16.4	6.0	5,716	445	19	37
"	KAMPALA*	330.7	458.5	773.5	4.4	238	198	2,423	3,907
"	MUKONO	541.0	634.3	816.2	2.3	14,242	4,594	138	178
"	KIBOGA	-	137.7	140.8	0.1	4,583	4,336	30	31
"	LUWERO	315.2	412.5	449.2	0.8	9,198	8,539	48	53
EASTERN	JINJA	196.3	228.5	284.9	2.0	734	677	338	421
"	IGANGA	470.2	643.9	944.0	3.5	13,113	4,823	134	196
"	TORORO	527.1	407.2	554.0	2.8	2,989	1,981	206	280
"	KAMULI	278.3	349.6	480.7	2.9	4,348	3,332	105	144
"	KAPCHORWA	64.5	74.0	116.3	4.2	1,738	1,738	43	67
"	MBALE	421.4	556.9	706.6	2.7	2,546	2,504	223	282
"	PALLISA	-	261.2	356.0	2.9	1,919	1,564	136	186
"	KUMI	190.7	239.5	237.0	-0.1	2,861	2,457	97	97
STUDY AREA TOTAL		4,910.9	6,528.6	8,710.9	3.3	82,558	49,296	132.44	176.71
NATIONAL TOTAL		9,535.1	12,636.2	16,582.6	2.5	241,038	197,096	64	84
STUDY AREA TOTAL AS % OF THE NATIONAL TOTAL		51.50	51.67	52.53	132.0	34.25	25.01		

* Kampala District here includes Kampala City and Entebbe Municipality.

Source: Statistics Department, Ministry of Planning and Economic Development

Most of Uganda's population (52.53%) is concentrated in the Region (Map 3). It is the location of many of the country's urban centres -- 18 out of 37 -- and 78.33% of the national urban population. Moreover, it contains 96% of the manufacturing an/or industrial establishments (Kurian, 1987).

Much of the Region drains away from the Lake Victoria, from which the water escapes over the Sezibwa and Ripon Falls (now Owen Falls Dam), into the Victoria Nile and by way of Lake Kyoga (Maps 2 and 3) to Lake Albert, before heading north to the Mediterranean Sea as Albert Nile.

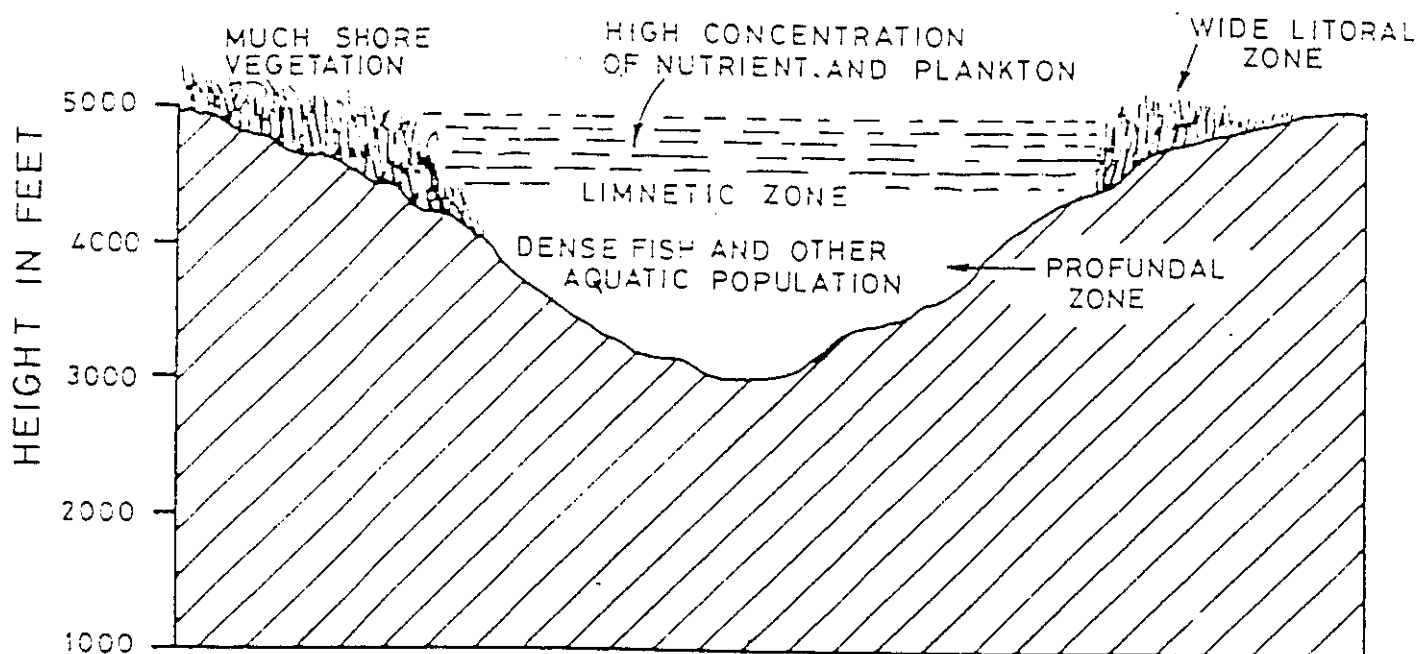
The Region's main rivers -- Katonga, Mayanja, Sezibwa, Lugogo, Lumbuye and Mpologoma -- all rise in the swamp-filled valleys in the up-warped section of the Region, and sluggishly flow north-west to the Rift Valley System. Because of the down- and up-warping in the Lake Victoria Basin, many of the perennial rivers and streams of the plateau are impeded in flow and are clogged with swamp (Temple, 1967).

The smaller lakes (Wamala, Kachira, etc.) in the Region (Map 2) are both varied and significant. They vary in size, shape and depth, but they are all of eutrophic nature (Figure 4). They are warm, fresh water bodies, characteristically have muddy and/or sandy bottoms, rounded contours, and gently sloping shorelines. Their populations of invertebrates, fish, and aquatic amphibians and reptiles are generally abundant and diversified (Dasman, 1984).

This part of the Lake Victoria Basin with its intricate submerged shoreline and elevated plains of sand bars and lagoons, affords strong scenic contrast to the regular faulted lakes further west in the Rift Valley. More similar to the Lake Victoria Region, in terms of its intricate shoreline, is the back-tilted Lake Kyoga system and the surrounding watershed to the north (Temple, 1967).

Figure 4

EUTROPHIC LAKES



This diagram was drawn based on materials expressed
in Dasman, 1984, p.p. 116-128 & Temple, 1967, p. 71.

(Eutrophic Lakes are rich in organic and mineral
nutrients, and support abundant and diversified
plant and animal populations.)

3.2 CLIMATE

The Region has contrasts in rainfall, and varies in temperature and vegetation with distance from Lake Victoria shores (Map 4). The regional climate displays comparatively small seasonal variations of temperature, humidity and wind throughout the year. There is a relatively dry season between December and March and another one from June to August, but both are frequently broken by thunderstorms. The consequence is an equatorial regime with rainfall in March/May and September/November, the earlier one being the principal rainy season.

3.3 ENVIRONMENTAL LIMITING FACTORS

In the Lake Victoria Region of Uganda, these limiting factors can be divided into three categories, as illustrated in Figure 5 (Dasman, 1984; Bugenyi, 1991).

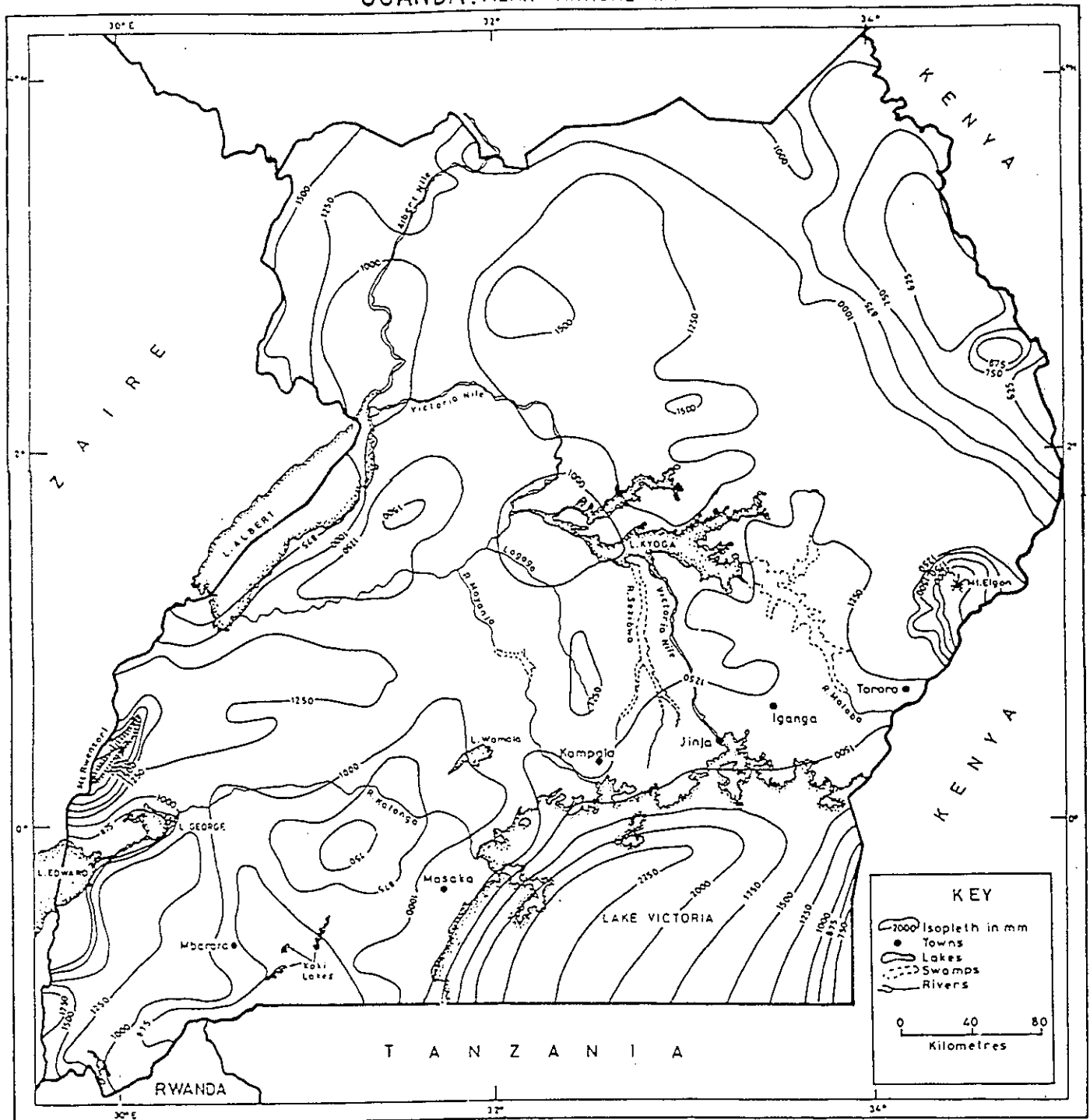
Figure 5 ENVIRONMENTAL LIMITING FACTORS

1. Physical These include factors of relief, climate and weather; the absence of water or presence of excess water; availability or lack of essential nutrients; the suitability or the unsuitability of terrain; droughts, floods and so on. Simply put, the regional biotic potential in relation to the environmental resistance.
2. Biological These involve flora and fauna competition, predation, parasites, disease and other interactions between and within species that are limiting to the growth, increase and/or survival of individuals or a population.
3. Density Dependent These include those which increase in their intensity; have greater effects, or affect more individuals as the population increases in density.

Source: Adapted from Dasman, 1984.

Map 4

UGANDA: MEAN ANNUAL RAINFALL



The map was adopted from The Uganda Atlas, 1967.

These factors are the essential determinants of the number of animals/plants that can be supported without the biotic potential of the environment. In combination they operate to increase or decrease individual and population well-being in relation to the biotic potential of the regional environment over time (Figure 6).

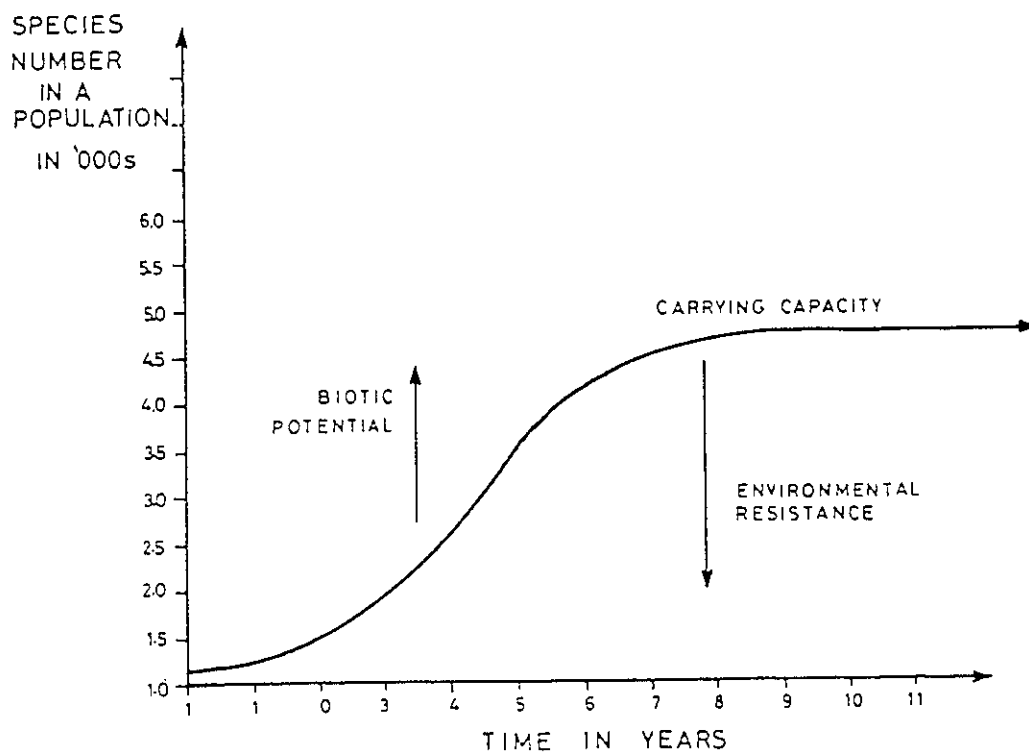
In many parts of the Lake Victoria Region of Uganda such factors are visibly in operation, especially in and around the large urban centers of Kampala, Entebbe, and Jinja (Appendix F).

3.4 THE "TRAGEDY OF THE COMMONS"

In the original essay entitled "The Tragedy of the Commons", Hardin (1972) focuses on the moral implications of an over-exploited, commonly owned resource -- land pasture. In the essay, pasture is shared by a cattle herder and his neighbours. Each has free access and equal rights to the pastural commons for grazing. There is a point of equilibrium at which consumption of grass (by cattle) equals the natural production of grass. However, if one herder adds one cow, the balance is upset and the benefits will accrue to him while most of the consequential costs (impacts and effects) will be distributed amongst all the community herders. All of the herders assume that if they do not add an extra cow to their herd, someone else probably will. Hence, every herder increases his herd, so that the commons consequently becomes overgrazed.

Figure 6

FORCES OF ENVIRONMENTAL QUALITY



Source: Adapted from Dasman, 1984, p. 217.

An optimist would claim that a group of people sharing a limited resource (land, water, air, ...), or commons, will necessarily choose the course which guarantees common survival. Quite clearly the commons of concern -- the Lake Victoria Region of Uganda -- has a finite environmental carrying capacity. For Hardin the human inability to recognize the finite nature of most biophysical resources constitutes the tragedy (Hardin, 1979, p. 11), which can be related to the Lake Victoria Region of Uganda as follows.

Following from Hardin's line of thought, we can contemplate the situation in a crowded area (commons) like the Lake Victoria Region of Uganda:

"... tragedy is created whenever individual enterprises, pursuing their own self-interest, degrade the world for everyone including themselves, or they do if they are allowed to throw unlimited wastes into the commons of air, water, or to catch fish without limit from the commons of the ocean" (Hardin, 1979, p. 14)

The negative social and environmental implications in the Lake Victoria Region of Uganda (LVR - Uganda) where people are permitted to throw unlimited waste into the "commons" -- land, water, and air -- appear clear: that is, unless change occurs the result will be an enormous accumulation of wastes and a seriously degraded ecosystem.

In regard to the tragedy of the commons scenario for the Lake Victoria Region of Uganda, consultation with officials of all levels of government, discussion with other researchers, and reviews of the literature and newspapers suggest that it is very appropriate. That is, and as ascertained during the field work component of the research, for the last thirty years (1962-1992) individuals and communities in the Region have not been made aware of the ultimate consequences of their actions.

In other words, there was and is no "big picture" of the degradation of the regional environment. Moreover, there are no policy mechanisms that provide them with any incentives to reject their growing consumptive patterns in favour of less wasteful ways of doing things.

Even that very brief exploration of the Region in a tragedy of the commons context is sufficient to prompt several fundamental policy questions. How common is the sense of moral obligation for the preservation of the Lake Victoria regional commons in Uganda? And, following from the finding that there is a general lack of awareness about the situation, how can local communities in the region develop a sense of obligation and/or commitment to environmental protection if planners and policy-makers in the region do not provide them with appropriate data, information and knowledge for understanding and appreciating the greater issues?

3.5 SUMMARY

There are visible signs that the environment of the Lake Victoria Region of Uganda is no longer healthy (Kyazze, 1990, p. 10). An eight month program of field observations supplemented by consultations with officials and residents, and reviews of public documents and newspaper reports indicates that rural-urban migration is high, social-service provision is limited, deforestation is widespread, wetlands' invasion is pronounced, shoreline development is unplanned and uncontrolled, urban sprawl is significant, and human waste and industrial sewerage freely flow into Lake Victoria and its connecting water channels. Those indicators of things gone and going wrong in the Region, and the fact that all of them have a spatial aspect, establish the Lake Victoria Region of Uganda as an area worthy of study in regard to such important development topics as the present and future patterns and trends of settlement, industrialization, deforestation, wetlands' invasion, and dumping of waste (human and industrial).

CHAPTER FOUR

4.0 RESEARCH METHODOLOGY

According to Ackoff (1953), there are four phases of a practical research design:

- 1- Sampling Design
- 2- Statistical Design
- 3- Observational Design
- 4- Operational Design

As indicated by the terminology, the phases proposed by Ackoff are primarily intended for statistical as opposed to mathematical or logical-simulation types of inquiries. Further, their applicability is neither direct nor transparent when the subjects under study are policies, plans, and programs involving development initiatives in a complex milieu such as that of the Lake Victoria Region.

Despite these 'shortcomings', the Ackoff model is useful as a means for organizing the research. However, the methodology section of this research is based on only 1, 3, and 4 of the Ackoff phases because the study analysis is qualitative. Care is taken, however, to ensure that any of the above-mentioned limitations are addressed in this review of the research methodology employed to conduct the study.

4.1 SAMPLING DESIGN

In order to assemble as robust a data base on development initiatives as circumstances permitted, a number of related activities were undertaken. They are discussed in detail in the

Appendices, but several key points warrant noting in order to illustrate the scope and constraints of database development for the study area.

Reports and data were collected from agencies and organizations in Canada, such as the Canadian International Development Agency (CIDA) and the International Development Research Centre (IDRC), as well as from other agencies such as the United Nations Development Programme (UNDP) that are involved in the Lake Victoria Region of Uganda. Also, site visits were made to projects/programs located in several communities in the Region during eight months of field research. Further, a specific effort was made to visit the main urban centres of Masaka, Kampala, Entebbe, Jinja, and Tororo in order to conduct a descriptive inventory of the development initiatives implemented between 1965 and 1991, as well as those projected up to the year 2000. Finally, since there is a tendency by the central government to publicize all development initiatives (projects/programs) negotiated with donor governments, agencies and organizations, the print medium (four main newspapers) was also used as another source of information on ongoing and projected development initiatives (Appendix D).

The selection of the initiatives to be studied was greatly influenced from the outset by the availability of reliable documentation and data, the time required to obtain them, and the costs involved. As a result of those severe constraints, no claim can be or is made that a representative sample of initiatives was assembled. However, on the basis of consultation with experts in the

development field and the difficult conditions in Uganda, the reports and data assembled appear to be appropriate for this (exploratory) Master's thesis level study of the role of geographic factors in development initiatives in the Lake Victoria Region of Uganda.

4.2 OBSERVATIONAL DESIGN

The observational aspect of the research consisted of two parts. The first dealt with the acquisition of reports and data available from agencies and organizations engaged in development initiatives in the Lake Victoria Region of Uganda. Secondly, data were collected from a selected number of places in the study area by means of a descriptive inventory. Observations to be made in both cases focused on the nature, location, sponsor, objectives, source, cost, and duration of the projects and programs, as illustrated in Figure 7 below.

Figure 7 FORMAT FOR INVENTORY OF DEVELOPMENT INITIATIVES

Project Name	Location	Sponsor	Objective(s)	Source	Cost	Duration

These aspects of the research are discussed in detail in sections 4.6 and 4.7, "Compilation of Existing Data" and "Field Data Inventory". To illustrate the nature and purpose of the observations entered into the inventory (Figure 7), several temporal/spatial elements associated with development initiatives are identified and assessed (Table 3).

Table 3**SPATIAL/TEMPORAL ELEMENTS**

Observation Item	Spatial/Temporal Aspects Identified/Assessed
Project Name	The nature of development initiatives (projects/ programs) in terms of sectors of emphasis over time.
Location	Project/program dispersal/concentration/distribution in space and time. A basis to examine nodal, multi-nodal, linear or multi-linear development patterns, structures, processes or trends, A basis for assessing the role of geographic considerations (the 'geo-factor') in development initiatives (projects/programs).
Sponsor	The donor agencies and organizations - multi-lateral, bi-lateral, NGOs, local or foreign.
Objectives	Priorities: economic, social, ecological, equity, spatial, industrial, domestic or foreign exchange orientation.
Source	The source of the data for review or future research.
Cost	How much is being spent on what, where and why.
Duration	The general time framework for each project/program.

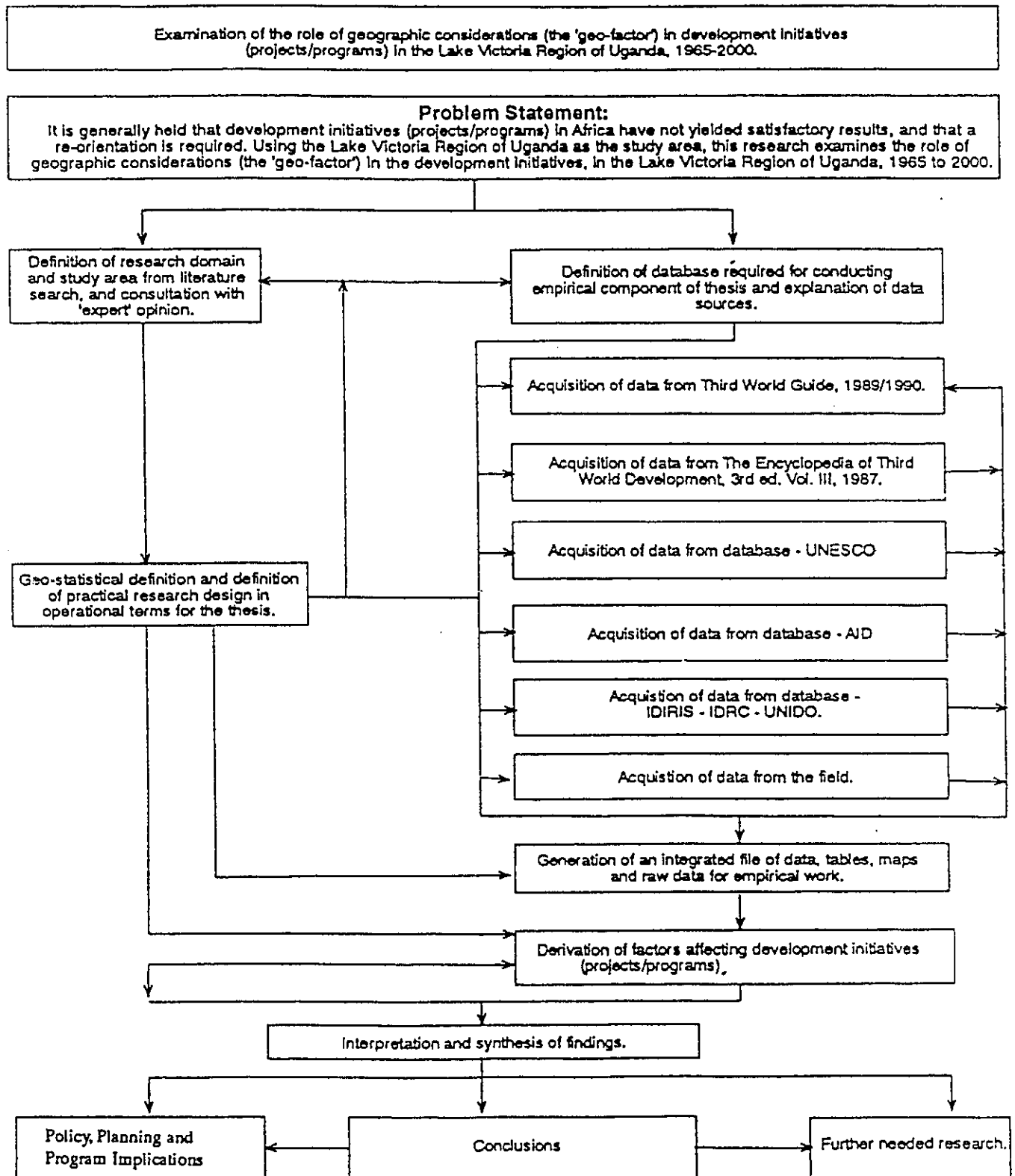
The overall inventory of observations on development initiatives provides a basis for establishing current policy orientations, for examining whether historic-geographic considerations are factors in the nature, pattern and impact of development initiatives in the Lake Victoria Region of Uganda, and for considering an alternative policy orientation.

4.3 OPERATIONAL DESIGN

The operational design (Figure 8) includes the sampling and observational phases of the practical research design. The primary task of this phase was to conduct the "on the ground" research, and involved physically identifying and locating the development initiatives that were encountered in the sampling phase. Second, a contact person from whom the required data (observations) could be obtained had to be found in each of the agencies/organizations. The third specific research operation was the development of a questionnaire for the field work on environmental trends.

Figure 8

Thesis Operational Design



This questionnaire was developed after consultation with the field supervisor, Dr. Aluma-Adomati (Department of Geography, Makerere University, Kampala, Uganda).

The administering of the questionnaire and return of answers was done by utilizing twenty (20) third year students of Makerere University located in Kampala, during the 1991 August holidays. The third year students were utilized because they were presumed to be well-motivated, generally informed, and needed no training in data recording. The students were mandated to verbally ask the questions and record the answers in their respective communities in the study area (Map 5).

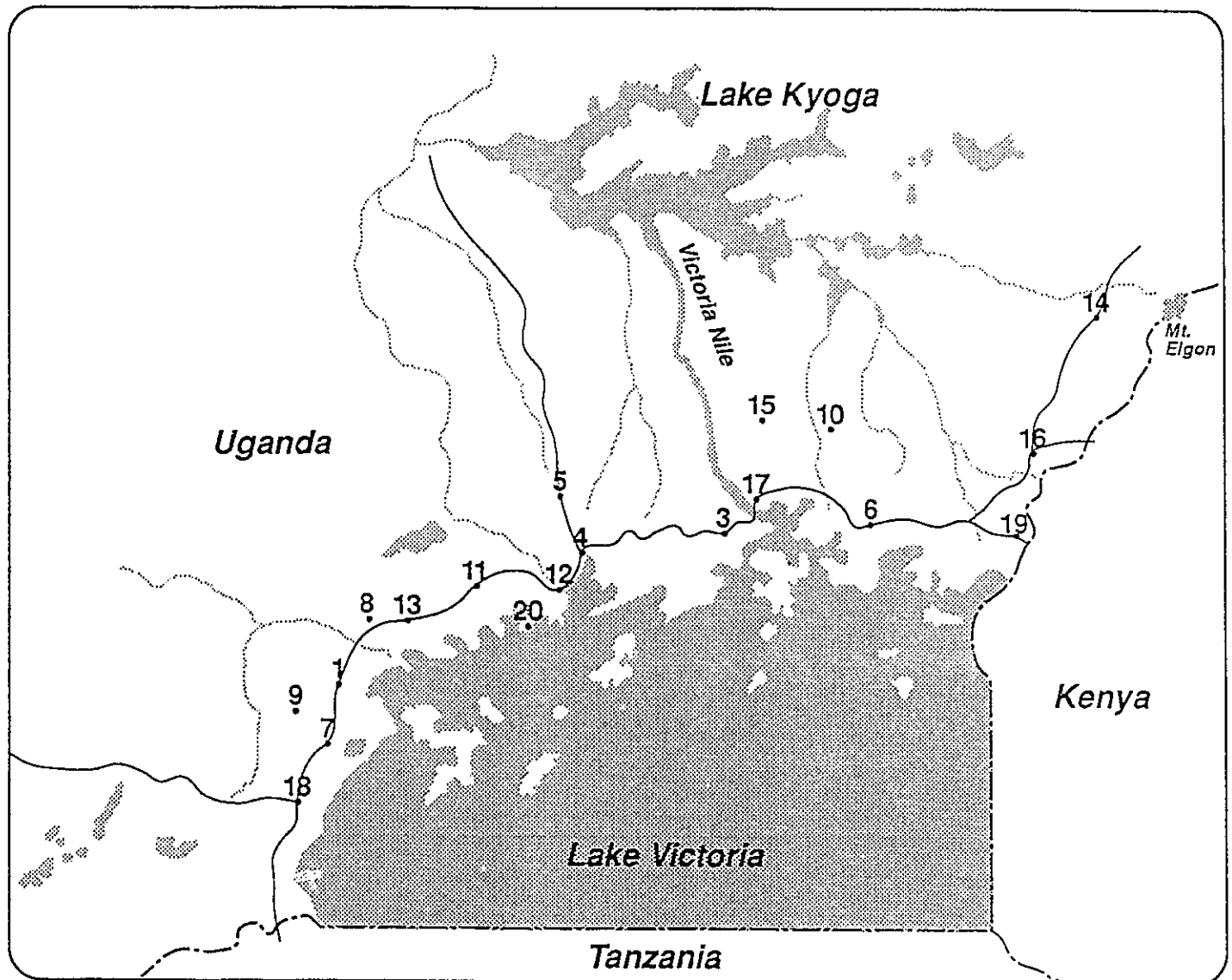
4.4 ASSUMPTIONS AND LIMITATIONS

With respect to the research methodology, there are several assumptions, limitations and qualifications beyond those already noted which need to be made explicit.

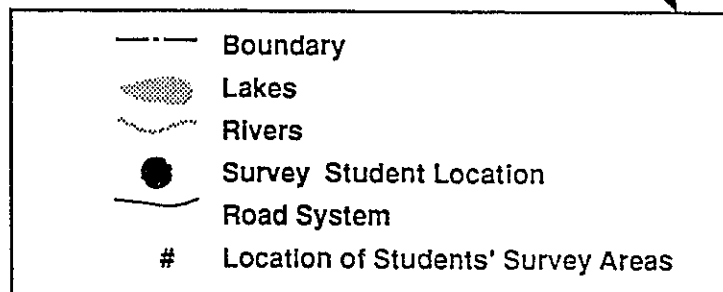
The initial qualification stems from the reality that the issues which could be under study are spatial, temporal, social, political, cultural, economic, technological and environmental in nature, are complicated in their relationships, and are potentially very large in number. In the case of this research, it is emphasized, only a few, selected issues that influence the success/failure of development initiatives are embodied in the research hypotheses.

Location Map of Sites for Which Survey Questionnaire was Administered by Students

Map 5



Scale 1:50,000 Legend



Second, with regard to assumptions, it is first assumed that short-term economic considerations such as market conditions and cost performance are not necessarily overriding concerns in the design, location and implementation of successful development initiatives. Such an assumption enables an open examination of spatial considerations which may actually be the key to the success/failure of these initiatives, but which are often not accorded explicit, full policy attention due to the traditional focus on the economic aspects of initiatives.

Another major assumption involves the realities of dealing with environmental effects and impacts accruing from development initiatives. In this study it is assumed that the industrial/commercial sectors will not voluntarily support environmental protection policies and programs. The basis of the assumption arises in part from the history of what has occurred elsewhere, in both the industrialized and developing worlds (The Brundtland Commission Report, 1989). Instead, and insofar as this study area is concerned, the affected sectors could actually oppose such measures because virgin, natural resource areas still exist and are relatively cheap to exploit, even though the production infrastructure is not well-developed.

An additional acknowledged limitation is the lack of data reliability. According to many people (professionals and lay persons) in the development field who were contacted during the field component of the study, there are generally four problems with data on implemented, on-going, and projected development initiatives in the Lake Victoria Region of Uganda:

- 1- In many cases data needed to complete the inventory of development initiatives (Figure 8) simply do not exist;
- 2- If the data do exist they are often measured differently from department/agency to department/agency at the regional, national and/or non-government organization levels;

- 3- In the absence of data some planners/policy makers or those reporting to them may make up statistics in order to make their "know-how" look more than it really is, or to make a few shillings by selling the fabricated data; and
- 4- The deep-rooted bureaucracy can be a source of delays in decision-making, and/or provision of needed data and information.

The general level of concern about data unreliability requires that much caution must be exercised in the analysis, synthesis, and interpretation of official data on development activities in the Region.

4.5 REVIEW/CONSULTATION WITH DATA SOURCES

The practical component of the research design was composed of parts dealing with data base development and consultation with data base sources. The critical, dependent variable for which data were required is the success/failure of development initiatives. That is, it is first required to ascertain which initiatives were or are regarded as successes or failures, and then to seek the independent variables accounting for the initiative's success or failure.

The success of development initiatives in the study area has until recently been determined on the basis of two factors:

1. The capacity to generate export products; and
2. The ability to increase foreign exchange earnings (The World Bank, Report No. 8179-UG, Jan, 1990).

With the advent of environmental issues and concerns, however, a third factor has entered the equation: the "space/development" relationship, and the associated spatial and non-spatial consequences. In this "three-variable equation", success/failure of development initiatives is the dependent variable; the appropriate planning tools are the intervening (control) variables, and the spatial dimension is the independent variable.

In order to gain an understanding and appreciation of the relationship between the dependent and the independent variables, data from a variety of development initiatives -- including agricultural, industrial, housing, educational, health, and transportation, etc..., were collected so that comparative figures could be derived (Tables 4-5).

4.6 COMPILATION OF DATA

The purpose of this activity is to develop an empirical base for determining which development initiatives were/are more effective, and also to ascertain the significance of the spatial dimension (the 'geo-factor') to outcomes.

The primary source of data was the International Development Research Centre (IDRC) in Ottawa, through its Inter-Agency Development Research Information System (IDRIS) database. By inquiring of IDRIS, a list of past and on-going development initiatives (projects/programs) was produced from different agencies (United Nations Development Program, UNDP, and United Nations Information Development Organization, UNIDO) and relevant tables compiled (Tables 4-6).

The compilation of data from resident communities in the study area was the result of personal interviews with community leaders in several localities in the study area, and examination of reports in the local daily newspapers and journals (Tables 7-9; Appendices A, B and D).

In the absence of official recorded data in many areas, it was necessary to derive the needed data by interviewing knowledgeable community leaders in the Study Area. They appeared to represent the best available alternative means to obtain data on what development initiatives have been or are being carried out in the respective communities. This primary data collection activity yielded a body of findings on the development initiatives that frequently are not recorded in the published literature (Tables 6-9; Appendices A and B).

4.7 FIELD WORK DATA INVENTORY

Field work data were compiled for individual communities according to the format for the inventory of development initiatives, and reported on the nature, spatial location, objectives, cost, source, and duration of programs and projects (Figure 7). The inventory provided the basis for analyzing the measured or perceived consequences, dispersal/distribution/concentration features, cost, and duration of initiatives (Tables 4-10). The data inventory also provided a basis for establishing the sectoral or multi-sectoral nature of the programs and projects. Field observations regarding impact-related concerns such as rural area depopulation, urban overpopulation, and environmental degradation were made and recorded for subsequent examination.

Table 4: PROJECTS/PROGRAMS BY TYPE AND NO. FROM DATABASE IDIRIS

PROJECTS/PROGRAMS					
TYPE	#	TYPE	#	TYPE	#
Technology	1	Agriculture	20	Industrial	30
Education	39	Int. Development	7	Technological	31
Language	3	Health	1	Livestock	2
Surveying	10	Energy	2	Agriculture	3
Cultural	12	Education	12		
T. Communications	4	Socio Economic	7		
Women Issues	3	Housing	2		
Economy	3	Population	3		
Water Resources	4	Environmental	1		
		Technology	1		
TOTAL	79	TOTAL	56	TOTAL	66

Source: Inter-Agency Development Research Information System - IDRC

Note: # Number of Projects/Programs by Type

Table 5 PROJECTS/PROGRAMS FROM DATABASE UNDP

PROJECTS/PROGRAMMES			
TYPE	#	TYPE	#
Evaluation	4	Income Policy	5
Planning	6	Agro. Industry Health	9
Sectoral Planning	24	Development	1
Economy	28	Labour	11
Social	23	Education	4
Health	16	Technology	6
Environment	8	Social	4
Labour	7	Women Issues	7
Agriculture	25		6
Women Issues	5		
TOTAL	146	TOTAL	53

Source: Inter-Agency Development Research Information System - IDRC

Note # Number of Projects/Programs by Type

Table 6

PROJECTS/PROGRAMS FROM DATABASE UNIDO

PROJECTS/PROGRAMMES			
TYPE	#	TYPE	#
Economy	10	Demography	6
Social Development	2	Deported Asians Property	1
Livestock Research	1	Industrial	3
Agricultural	29	Health	1
Education	18	Energy	1
Development Planning	12	Environment	2
Hydrology	1	Housing	14
HIV Infection	1	Regional Development	3
TOTAL	74	TOTAL	18
TOTAL 92			

Source: Inter-Agency Development Research Information System - IDRC

Note: # Number of Projects/Programs by Type

Table 7 LAKE VICTORIA REGION: UNIVERSITY STUDENTS REGISTERED 1990/91

DISTRICT	STUDENTS	TOTAL NUMBER OF STUDENTS REGISTERED 1990/91	
Jinja	55	National	2020
Iganga	70		
Kampala	335	Lake Victoria Region	864
Kalangala	3		
Masaka	77	Lake Victoria Region as a % of the	42.77
Mpigi	121	National	
Mukono	70	Kampala	335
Rakai	14		
Tororo	119	Kampala as a % of the National	16.58

Source: Academic Registrar's Office, Makerere University, P.O. Box 7062, Kampala, Uganda)

Table 8

PAVED ROAD NETWORK IN THE LAKE VICTORIA REGION

FROM	TO	MILES	FROM	TO	MILES
Iganga	Kaliro	25	Kampala	Jinja	56
Tororo	Moro	13	Mukono	Kayunga	32
Kampala	Masaka	83	Jinja	Kamuli	40
Kampala	Entebbe	21	Jinja	Tororo	81
Masaka	Kyotera	26	Busitema	Busia	20
Masaka	Lyantonde	42	Kampala	Mityana	43
Kampala	Busunju	32	Kayunga	Njerre	30
Kampala	Kiteredde	18			
Lake Victoria Regional Total		562 miles / 899.2 km			
National Total		2080 km			
Lake Victoria Regional Total as a % of National Total		43.23%			

Note: The present road network in Uganda, comprises of: 680 km of urban roads; 2080 km of paved roads; 10,000 km of trunk roads; 20,000 km of rural feeder roads

Source: Development Digest, Vol. 1, No.2, July-September, 1991, pp 18-22.

Table 9

SCHOOLS IN THE LAKE VICTORIA REGION

DISTRICT	SCHOOLS			SCHOOLS			
	PRIM.	PRIV. S.S.	GOVT. S.S.	TOTAL	PRIM.	PRIV. S.S.	GOVT S.S.
Kalangala	1	-	-	National	7368	256	603
Iganga	271	14	14				
Jinja	101	8	10				
Kampala	122	23	22	Lake Victoria Region	2091	127	182
Mpigi	395	17	35				
Mukono	325	10	27				
Rakai	191	11	12				
Tororo	468	17	44	Lake Victoria Region as a % of the National	28.40	48.90	30.02
Masaka	201	27	17				

Note: - No private secondary school available at the time.

Source: The Planning Department, Ministry of Education, 12th floor, Crested Towers, Kampala

Table 10

URBANIZATION IN THE LAKE VICTORIA REGION OF UGANDA

DISTRICT	URBAN CENTRE	STATUS	POPULATION 1959 - 1991			
			1959	1969	1980	1991
Kampala	Kampala	City	115,483	330,700	458,503	773,463
Jinja	Jinja	MC	29,807	47,872	45,060	60,979
Masaka	Masaka	MC	4,782	12,987	29,123	49,070
Mbale	Mbale	MC	13,569	23,544	28,039	53,634
Mpigi	Entebbe	MC	9,941	21,096	21,289	41,638
Mpigi	Mpigi	TC	577	3,401	4,577	7,282
Tororo	Tororo	MC	6,365	15,977	16,707	27,013
Tororo	Busia	TC	593	1,146	8,663	27,745
Mukono	Lugazi	TC	8,105	-	10,439	13,668
Mukono	Mukono	TC	450	3,565	5,783	7,446
Mukono	Njeru	TC	-	4,637	3,880	-
Mukono	Mbikoko	TR	-	3,458	3,435	-
Luwero	Bombo	TC	895	583	5,573	10,603
Luwero	Luwero	TC	71	715	4,190	10,917
Kamuli	Kamuli	TC	1,867	2,916	3,903	5,693
Iganga	Magamaga	TR	-	4,818	3,417	-
Iganga	Bugiri	TB	395	820	3,201	-
Iganga	Iganga	TC	3,146	5,958	9,899	19,911
LAKE VICTORIA REGION TOTAL			196,046	493,193	646,684	1,098,050
NATIONAL TOTAL			255,938	601,336	850,558	1,428,580
LAKE VICTORIA AS A % OF NATIONAL TOTAL			76.60	82.01	76.03	76.86

Note: - Urban Centre not separately enumerated in that census.

MC = Municipal Council; TC = Town Council; TR = Trading Centre;
TB = Town Board

Source: Statistics Department, Ministry of Planning and Economic Development, 1991.

In addition, individual Study Area districts' maps were drawn as a means to establish associations between human activities and the human use of space with respect to the work, leisure, settlement, and communication within the social, economic and political organizations of the Regional space (Appendix C). The interest in those associations is tied to the research task of assessing how ideas on relative location, spatial distribution, spatial interaction, distance, nodality, accessibility, interaction fields and spatial systems might be of policy value. As for the use of maps, they are valuable as a means of orienting survey respondents, and as a means of geographically illustrating the geographic aspects of environment and resource conservation, rural-urban integration, movement and interaction, etc., as public policy concerns.

4.8 DATA BASE ORGANIZATION AND DEVELOPMENT

Due to the importance of the data base to this study, and perhaps to subsequent research efforts and the public at large, an extra measure of care was given to this task. In particular, and in order to preserve the data in disaggregated form, a tabular format was used to ensure correspondence, coherence and utility of data from each locale or sector. By not aggregating the data across locales or sectors the results of the field work remain fully available to future inquiries (Tables 1-10).

4.9 DATA TREATMENT

The statistical design of empirical research is of vital importance. Inferences can be drawn, statistically, from the sample characteristics to the population characteristics. As mentioned in section 4.3 of the "Research Methodology", the nature and size of the sample was

determined after consultation with the field supervisor, Dr. Aluma-Adomati, and was based on the portion of the Region that actually borders the Lake Victoria shores. Upon resolution of the sampling design, consideration was given to the statistical design and the techniques for exploring the relationships between the independent variable (space) and the dependent variable (success/failure) of development initiatives (projects/programs). An observational inventory and analysis approach was selected as the most appropriate way of data treatment for this study, as pointed out in sections 4.0 and 4.2 of this chapter.

4.9.1 DATA INTERPRETATION

Maps and diagrams were drawn and constructed to display statistical outputs, and to assist in depicting and reading test results. The maps and diagrams reflect development activities in different areas of each community visited. The results and interpretations of the investigations and tests are presented in Chapters 5 and 6, Environmental Trends/Research Findings and Discussion, respectively.

4.9.2 SUMMARY

From the reports and data collected on development initiatives from different agencies and organizations, site visits to programs/projects located in several rural and urban communities, and supplemented by data generated from newspapers, a descriptive inventory of implemented and projected development initiatives was produced (Appendices A, B and D).

CHAPTER FIVE

5.0 STATE OF THE ENVIRONMENT

"There is a paucity of data on many aspects of national life: industry, agriculture, energy, transport, labour, household, culture, etc. For any data series (where there is data) there are gaps, inconsistencies and inaccuracies. This is particularly so for the decades of the 70s and 80s during which there were no important data collection operations mounted at the national level. The last Statistical Abstract came out in 1972 and it essentially related to the late 60s. There was general stagnation or destruction of developmental projects and programmes in Uganda during the decade of the 70s and 80s, and this adversely affected the national data infrastructure."

(Kiregyera, 1981, p. 601)

The data gap in the 70s and 80s identified by Kiregyera has been a serious constraint in planning for development. It becomes all the more serious in real-world terms however, if accompanied by perceptions or impressions that there have been negative social and ecological changes occurring in parallel with the data gap. To overcome the data deficiency of 'official' sources it was necessary to generate a body of primary source data in order to rigorously measure and assess these social and ecological changes in the Lake Victoria Region of Uganda (1965-2000). That data base activity was carried out by twenty third-year students of Makerere University who administered survey questionnaires during the 1991, August holidays. The survey audience was the elderly members of their respective communities (Map 5), as they were deemed to be the most informed sources of empirical data (observations) on environmental trends in the Region.

Upon receipt and examination of the completed questionnaires, it was found that 18 out of 20 or about 90% of the students who had taken part in the survey had performed in a responsible manner. However, and despite their responsible performance, for any one question

on the questionnaire there were a number of cases where an answer was omitted or was not properly recorded. That is the reason why the figure for the final total number of students (Respondents) for a question is often less than twenty. Whenever possible, however, and as a means to check the survey work, the results were compared with the information available from other sources such as municipal councils, townships, Non-Governmental Organizations (NGOs), women groups, and government departments.

It must be emphasized, nonetheless, that while there is a considerable confidence in the data and opinions that were reported, it is necessary to put limits on what is read into some of the actual figures which were provided. For example, while it is obvious that there has been some demographic shifts in the population, the assessments of percentage increases or decreases must be taken with caution because of the absence of actual counts by the participating students.

The data and findings which are reported on in this chapter present observations on key variables selected to define the state and status of the environment in the Lake Victoria Region of Uganda. In addition to looking to the literature for guidance on which variables to select, direction was also received from research contacts who were knowledgeable about the broad environmental history of the Lake Victoria Region of Uganda (Appendix G).

It is further noted, as per Chapter 4, that the detailed data underlying the spatial or sectoral assessments are contained in Appendices A, B, and D.

5.1 DEMOGRAPHIC SHIFTS

As discussed previously (Chapter 3) and illustrated in Table 2 (p. 35) over the 1959-1991 interval the average annual growth rate for the study area is about 3%. The relatively high growth rate (by International Standards) is attributable partly to the arrival of many refugees from Sudan, Rwanda and Zaire in the 1960s and 1970s. It has also been suggested, however, that the birth rate increased in the years following independence in 1962 due to a large rural-urban migration (Hamilton, 1984). The immigrants were seeking better employment, educational, and health service opportunities, as well as urban-based amenities (clean water, entertainment, etc.). The urban centres of Kampala, Jinja, Entebbe, Mbale and Masaka are said to have been the main migrant recipients (Provisional Census Results, 1991).

Using the National Report of 1972 as a reference point, the survey appears to confirm more formal reports: that is, it is highly probable that there has been a steady rise (Figure 9) in the annual growth rate of the established population of the Lake Victoria Region of Uganda.

Figure 9 **VIEWS ON DEMOGRAPHIC CHANGES**

INCREASE	DECREASE	NO CHANGE
16	2	1

19 Respondents

The extent and structural dynamics of internal migration over the last 30 years are not well known, but it appears that they must be considerable given the socio-economic and political changes that have occurred in the Lake Victoria Region of Uganda since 1971 when Idi Amin came to power. As far back as 1965 there were government policy efforts for resettlement

schemes aimed at relieving land pressures in certain areas (Hamilton, 1984). There has also been a substantial unplanned population movement, largely into the Lake Victoria Region, and particularly in the Districts of Kampala, Jinja, Masaka and Mukono. Unfortunately, according to the Uganda Atlas (1967), Temple (1967), Hamilton (1984), Kabera (1990), Kabera and Goliber (1989), these were the main areas of land shortage as far back as the 1960s.

The (1991) Provisional Census Results indicate that the Lake Victoria Region's growth rate in the 1970s was similar to the national average. This could be the result of the then widespread political instability, the collapse of the industrial establishment, the impact of the black market (magendo), and/or government policies of the "back-to-the-land strategy". However, the much higher population growth rate in the Study Area in the 1980s can be attributed more to internal migration, the stable political atmosphere, and a revived economic environment in the latter half of the 1980s and particularly after 1986 (Kabera, J.B., Katende, C. and Goliber, J.T. 1989, 1990).

5.2 CLIMATIC CHANGES

The responses and opinions about climatic changes have not been taken to the level of validation because of concerns about the completeness and reliability of the formal meteorological data recorded for the period under consideration (1965-1991). Serious consideration of climatic changes in the last twenty-five years remains a target area of research. However, the reported changes and opinions are presented in Figure 10, as they may serve an indicative purpose.

Figure 10 VIEWS ON ELEMENTS OF CLIMATE CHANGE

Rainfall				
1	Increase		Decreased	No change
	8		9	2
	19 Respondents			
2	Rainfall predictability			
	More predictable		Less predictable	No change
	4		10	4
	18 Respondents			
3	Seasonal Regularity			
	More regular		Less regular	No change
	4		10	4
	18 Respondents			
4	Temperature			
		Higher	Lower	No change
	Day	12		2
	Night		2	12
	14 Respondents			
5	Rural Farm Work As Affected by Climate Change			
	More Difficult		Less Rewarding	
	17		17	
	17 Respondents			

5.3 CULTIVATED LAND AREA

No comparable data on this variable (cultivated land area) were located. However, several speculations about the status of cultivated land area over time are plausible. On the one hand, an increase in the area of cultivated land (Figure 11) could be expected in view of the population growth, and because of a continual decline in the crop yields per unit of land area, mainly

because of poor farming methods and lack of supportive inputs. On the other hand, however, a decrease could be expected due to the large reduction in the land allocated to cash crops like coffee, cotton, tea, and sugar cane, especially during the years of Idi Amin.

Figure 11 VIEWS ON CHANGES IN CULTIVATED LAND AREA

Increased	Decreased	No change
8	6	4

18 Respondents

The uncertainty or seeming lack of consensus on changes to cultivated land are mainly due in part to the complexity of the issue (Hamilton, 1984). That lack of agreement notwithstanding, however, a 1972 USAID report indicates that the population of Uganda in general, and that of the Lake Victoria Region in particular, is near its "theoretical maximum" in many parts. The USAID report regards the population of Busoga and Bukedi (Jinja and Iganga Districts) as close to 94% of their "theoretical maxima" (Hamilton, 1984, p. 21). The population in East and West Mengo (Mukono and Mpigi Districts) is reported to be near 82% of capacity, and in Masaka it is said to be at 68% of capacity (ibid, p. 21). This is generally supported by the 1991 Provisional Census Report.

From the 1991 Census Report, the national population density in 1980 (Map 3) is indicated to have been 64 persons per sq. km., and 84 persons per sq. km in 1991, or a 31 per cent increase in 11 years. However, for the Lake Victoria Region, the population density is calculated to have been 148 persons per sq. km in 1980, and 207 persons per sq. km. in 1991.

That change represents a 40 per cent increase in population density in 11 years, which is 9 per cent higher than the national average. And, to illustrate the high-end aspect of the changes in the Jinja and Kampala districts, the population density increased from 338 in 1980 to 421 persons per sq. km in 1991 for Jinja, and from 2423 in 1980 to 3907 persons per sq. km. for Kampala (Table 1), which is an increase of 61 per cent. It appears possible, if not probable, therefore, that the size of the cultivated land area had to increase in order to support the increased population. However, and as noted, no formal data source existed whereby the survey responses could be compared and perhaps validated.

5.4 LIVESTOCK DISTRIBUTION

Several explanations in regard to the changes in the population distribution were given. Principal among the reasons behind change is a general decrease in the grazing area available, and a decline in the quality of pasture. As illustrated in Figure 12, a decrease in the number of cattle was noted in 1 out of 19 cases, and a decline in the number of pigs was recorded in 3 cases out of 19 responses. The most commonly reported reason for the decline in livestock numbers is poor pasture quality resulting from widespread overgrazing, and climatic deterioration marked by longer dry seasons and less rainfall occurring in very irregular patterns.

Figure 12 VIEWS ON CHANGE IN LIVESTOCK POPULATION

Animal	Increase	Decrease	No change
Cattle	17	1	1
Goats	6	9	4
Sheep	5	10	4
Pigs	14	3	2

19 Respondents

5.5 EXTENT OF FOREST

A general decrease in the number of trees both as forest and as scattered individual species (natural or cultivated) was widely recorded as shown by the responses in Figure 13. Despite the term "forest" having been given wide-ranging definitions by the students, a general trend towards deforestation is quite clear from the responses.

Figure 13 VIEWS ON CHANGES IN FOREST EXTENT

Increase	-
Decrease	18
Decrease Near Complete Elimination	2
Illegal Encroachment into Forest	16
No change	-
Serious Encroachment	4

20 Respondents

It is particularly noteworthy that out of 20 respondents, not even one recorded either an increase or no change in the area of forest cover. The most commonly cited causes of forest and tree decline were rural cultivation and fuelwood collection, as well as the charcoal industry.

As for the extent of bush and scrub, it was recorded by 10 students to have decreased, and by 8 to have actually increased. There is some areal variation in the reasons advanced for bush and scrub decrease. In the eastern parts, that is the Tororo and Iganga districts, the decrease is reported to be a consequence of overgrazing and rural cultivation. In the western section, or in the districts of Rakai, Masaka and parts of Mpigi, it is a result of over-grazing. In the central part of Mukono and Mpigi, it is a result of rural cultivation.

The reported increase in bush and scrub is a consequence of several reasons, namely, expansion-succession after a forest has been cleared, and expansion after entire villages were burned and deserted during the wars of 1978/9 and 1982/86. However, near the urban centres of Kampala, Jinja, Entebbe, Masaka and Mukono its decrease is a response to land use changes related to the expansion of urban places, urban systems and urbanization processes.

5.6 TYPES OF WATER SUPPLY

Wells and surface water are the main sources of water in most areas covered by the survey. An increase in piped water refers almost entirely to the urban centres. With regard to the quantity of water available per person over the years, there is a recorded decline in 16 cases, no change in 3, and an increase in one. In addition to the responses indicating sources of water supply across the Region (Figure 14), respondents also indicated seasonal variation in the amount of water available at the source in 13 situations, no change in 4 cases, and negligible in 3 responses. Generally, there seems to have been a marked deterioration in the availability of water sources in the last twenty-six years. The commonly stated reason for this deterioration is vegetational change, mainly in the catchment areas which caused widespread soil erosion which, in turn, caused further vegetational decline leading to increased loss of water sources.

Figure 14**VIEWS ON SOURCES OF WATER**

Wells	10
Lakes/Rivers	6
Piped Water	4

20 Respondents

For the urban areas, however, the reasons for changes in water supply included political instability, institutional collapse, corruption, lack of spare parts, poor management, unplanned expansion, and increase in demand due to rapid population growth. Water quality was reported to have declined in 17 cases, showed no change in one situation, and improved in only 2 cases with the latter being related to the provision of piped water.

5.7 EXTENT OF SWAMP AREA

The main causes of the decline in the extent of swampland were reported to be: clearance for horticultural and floricultural cultivation; brick and tile making industries; large-scale industrial development; and, garbage dumping in and near the large urban centres such as Kampala, Entebbe and Jinja. Waterfront development for recreation and resort facilities was the reason for swamp clearance in the inter-urban corridors between Kampala and Entebbe and Kampala and Jinja, which is the area referred to in this study as the core of both the study region and the country as a whole.

Figure 15 VIEWS ON CHANGES IN SWAMPLAND AREA

Increase	Decrease	No change
1	16	2

19 Respondents

5.8 ENERGY SUPPLY

The initial field work yielded indications that it had become more difficult to get fuelwood and very expensive to buy charcoal. As a result of that perceived change, all students participating in the survey were asked to inquire about the average distance people in the respective locations travelled to gather firewood, over time, such as in the 1960s and in the 1990s. The recorded responses not only give an idea of the magnitude of the firewood problem but, as illustrated by Figures 16, 17 and Table 11, they also highlight some areal differences across the Lake Victoria Region of Uganda.

Figure 16 VIEWS ON MOST LIKELY SOURCES OF ENERGY

Source	Firewood	Charcoal	Electricity	Other
	11	6	1	-

18 Respondents

Figure 17 VIEWS ON ACCESS TO ENERGY SOURCES

Easy	More difficult	No change
-	16	1

17 Respondents

According to other available sources of information (charcoal makers, sellers and vendors), charcoal use has increased over the last twenty six years. Charcoal is used almost exclusively by more than 95% of the urban dwellers. It is expensive, and a family partly using a combination of electricity and charcoal in Kampala (1991) could expect to pay not less than 15,000 U. shillings (equivalent to an average monthly salary) per month for charcoal alone. Electricity could be slightly cheaper, but it is not available in many places, and it is very difficult to obtain electrical appliances and their spare parts.

Table 11 **DISTANCES TRAVELLED TO OBTAIN FIREWOOD**

DISTRICT	1960S KM	1990S KM	% INCREASE	NO. OF RESPONDENTS
Rakai	0.24	1.67	696	2
Kalangala	0.13	0.91	700	1
Masaka	0.43	1.32	307	3
Kampala	-	-	-	-
Mpigi	0.37	1.13	305	4
Mukono	0.51	1.76	345	3
Jinja	-	-	-	-
Iganga	0.71	2.16	304	5
Tororo	0.41	2.83	690	2
MEAN KM	0.40	1.68	420	19

N.B. For Kampala and Jinja, charcoal is sold in all residential areas and any distance travelled is minimal.

Among other energy sources of local importance are the dried stems of non-woody plants like maize, sorghum, cotton and cassava, which are generally used in the drier districts of Rakai, Iganga and Tororo where forests are either depleted or are naturally scarce.

5.9 VISIBLE SIGNS OF SOIL EROSION

Rain wash was reported as the main cause of the widespread soil erosion.

Figure 18 VIEWS ON SOIL EROSION

Increase	Decrease	No change
12	4	2

18 Respondents

Poor and unplanned building practices (unplanned and random) were given as another reason, along with poor farming methods particularly in and near the urban centres, for increased soil erosion.

5.9.1 LEVEL OF SOIL FERTILITY

There was a general agreement that soil fertility had decreased, and that the use of artificial fertilizers had increased a great deal in the 1965-1991 period.

Figure 19 USE OF FERTILIZERS

Increase	Decrease	No change
11	4	2

17 Respondents

5.9.2 ABUNDANCE OF WILD ANIMALS

While 9 reports indicated a total absence of large wild animals, another 7 indicated that hunting as a community activity had nearly disappeared.

Figure 20 **AVAILABILITY OF LARGE WILD ANIMALS**

More abundant	Less abundant	No change
-	16	-

16 Respondents

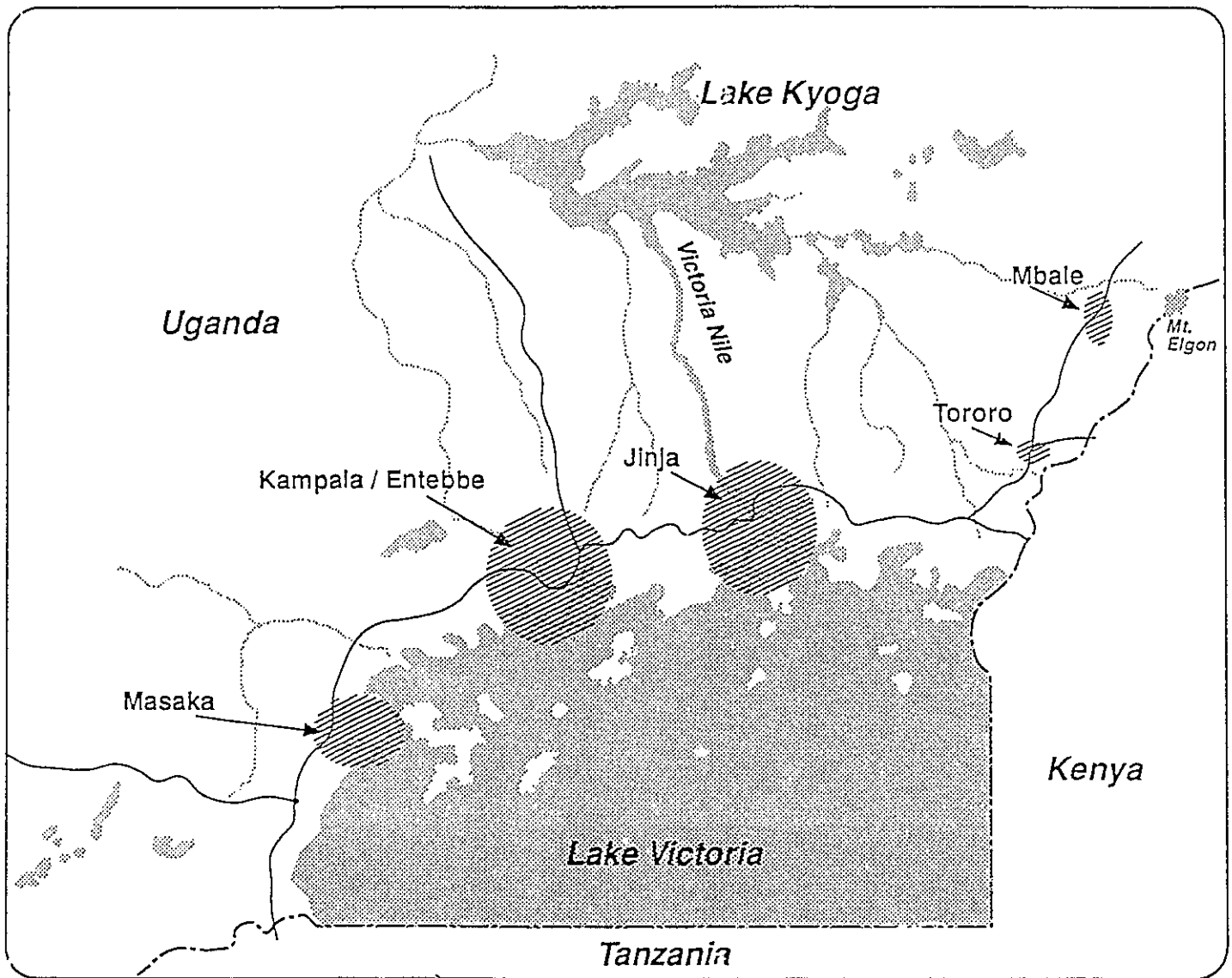
Although the Study Area was once an active habitat of large wild animals such as antelopes, gazelles, buffaloes, and wild pigs, the views of community elders appear to suggest that its capacity to provide a 'home' for such animals has been virtually exhausted as of 1993.

5.9.3 HUMAN IMPACT ON THE ENVIRONMENT

The survey results suggest a general deterioration in the quality of the Study Area's ecosystem for all the variables included in the survey, and particularly near the urban centres of Jinja, Kampala and Entebbe. The reasons given as causes of the deterioration included industrialization, forest destruction, overfishing, waterfront development, swampland reclamation, urbanization, foreign weeds (water hyacin), and the impact of the Nile Perch. The major culprits, however, were identified by the community elders to be the impact of human and industrial sewage, mainly from Kampala, Jinja, and Entebbe (Map 6).

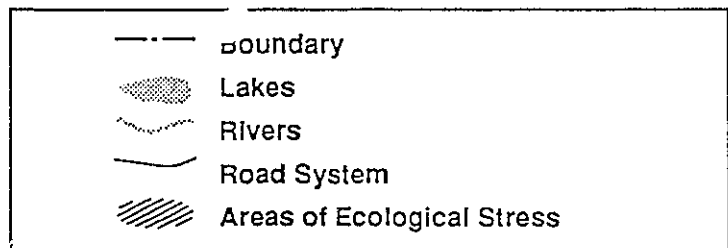
Urban Regions as Areas of Ecological Stress

Map 6



Scale 1: 50,000

Legend



5.9.4 TRENDS

The responses to the questionnaires point to a number of environmental trends that became established in the Lake Victoria Region of Uganda between 1965 and 1991. They are presented in general terms in Figure 21.

Figure 21 **SUMMARY OF ENVIRONMENTAL TRENDS,
LAKE VICTORIA REGION (UGANDA),
1965-1991**

A.	Direction of Pressures or Demands on the Environment
1-	Regional population generally increased
2-	Urbanization and industrialization increased;
3-	Cultivated land area increased;
B.	Symptoms or Effects of Urban Pressures or Demands on the Environment
5-	Crop yields per unit area decreased
6-	Forest extent decreased
9-	Swampland area decreased
10-	Firewood became more scarce and expensive
C.	Indication of Loss of Capacity of Environment to Cope with Under Pressures or Demands
7-	Quantity of water became unreliable
8-	Quality of water deteriorated
11-	Micro-climate deteriorated
D.	Summary Assessment of the State of the Environment of the Lake Victoria Region (Uganda) 1965-1991
12-	Lake Victoria Region's ecosystem (Uganda) generally degraded

The emergence of these regional trends does not preclude local exceptions to the general patterns. However, the results of the survey generally indicate considerable environmental degradation across the Study Area. This deteriorated state of affairs may have long-term economic, social and ecological impacts and effects for the Lake Victoria Region in particular, and for Uganda in general, and all the more so if it is allowed to continue unchecked, or if it is accelerated by the inclusion of other stresses on the ecosystem. Because, it is broadly accepted as a primary cause of environmental degradation, and is likely to continue to be a major force in that regard (Wellar, 1982), the role of urbanism in the Region is discussed in more detail.

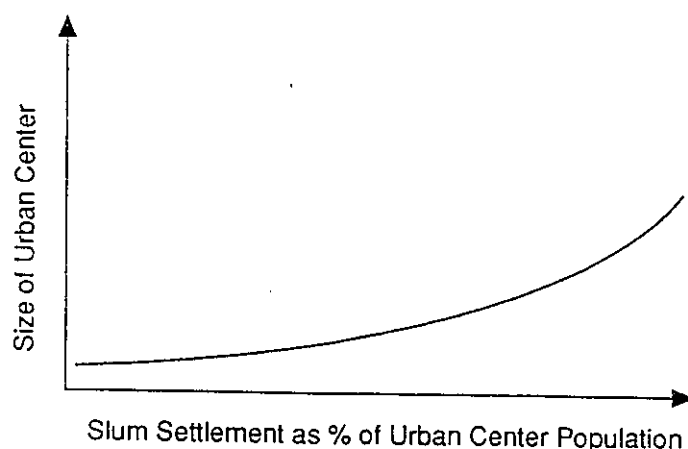
5.9.5 URBANISM

Urban growth in Uganda has come about both by physical expansion and by increasing density in urban areas already in existence. However, the sprawl has been haphazard, prompted by new, unplanned parcelling-out of good agricultural areas, hillsides and swamplands for urban use (Tibabiganya, 1991). Some of the negative effects of this component of development are considered to be: the destruction of the natural landscape; continuous increases in the cost of constructing and operating urban services; growing difficulties in providing access to the cities and adequate housing; deteriorating health and educational systems; increasing pollution (land, water, air); and incompatible land uses and land use activities (O'Connor, 1988). These are a few among the many urban 'evils' which could have been foreseen and perhaps prevented. In the smaller urban centres with populations of about three thousand these problems are not yet evident, but it warrants noting that neither the field work component nor the literature review encountered evidence that anything is being done to prevent their occurrence at a future date.

In the Lake Victoria Region of Uganda, it is extremely significant that the rapid growth of a few large urban centres (Table 2) has occurred with almost no encouragement from industrial development (World Bank, Report No. 8179-UG, 1990). Across the whole Region, however, people are being attracted to the urban centres with the expectations that they will be able to find a better way of life and standard of living as a result of opportunities provided by industrial development (ibid). Also, of course, people are being pushed toward the urban centres because of the weakness if not bankruptcy of the rural economy, a situation that was previously examined by Enyolu (1987) in his study of the urban-rural relationship in Nigeria.

Urban growth under such conditions means that the economy is generally unable to support those who have been pulled or pushed into the towns and cities. However, whether they have been pushed by rural poverty or pulled to the cities for positive reasons, the net result seems to be the overcrowding of these cities to the point they cannot adequately provide for the populations they contain (Enyolu, 1987). As illustrated by Figure 22, the posited relationship is that the larger the size of an urban centre, the higher the percentage of its population in slum/shanty settlements.

Figure 22 **SLUM SETTLEMENTS % IN URBAN CENTRES**



Regardless of the precise sharpness of the curve shown in Figure 22, the urban centres of Uganda present the serious danger of urbanization preceding industrialization. That is, as a consequence of too rapid and unchecked demographic growth, rather than due to the attraction to the urban way of life, the inhabitants of rural areas are flooding into towns and cities which are little more than relatively modest commercial centres. Around them the immigrant populations have created wide belts of miserable slums as observed during the field work (Nyendo in Masaka, Kitoro in Entebbe, Katwe in Kampala, Walukuba in Jinja), while the host town or city lacks the resources to provide the newcomers with jobs, decent housing, adequate public services, educational facilities, nor even with the rudimentary basics necessary for health and hygiene. Nonetheless, the rural population remains willing to migrate to the towns and cities than ever before because of rural poverty, urban attractions (real and assumed), and a sense of greater freedom. For these and many other related social and economic reasons, rural populations in Uganda have been and are being pushed and pulled to the towns and cities which are not prepared for the influx, which, as noted above, mirrors the situation that was previously identified by Enyolu (1987) in his study of resource allocation and urban growth in Nigeria.

5.10 SUMMARY

Most areas and communities in the Lake Victoria Region of Uganda still derive their livelihood from traditional subsistence agriculture. The fact remains, however, that an increasing number have moved or are trying to move away from that form of economy into more technology-oriented and urban-based economic systems. In their broadest context, these new

systems reflect sharp divisions of labour as well as regional variations that are typical of other developing countries.

This changing milieu suggests that a meaningful interpretation of development in the Lake Victoria Region of Uganda requires an in-depth examination of the role of historic-geographic factors in the demographic, ecologic, economic and settlement transformations occurring in the Region. That important matter is the topic of the next chapter.

CHAPTER SIX

6.0 RESEARCH DISCUSSION AND FINDINGS

In this chapter the research hypothesis is analyzed, and the dependent variable-independent variable relationships are examined. Some descriptive statistics preface the respective analyses so as to establish a general context for investigating the role of the independent variable (geographic considerations) in the development process of the Lake Victoria Region of Uganda, over the last thirty years. The purpose of this discussion, therefore, is to provide a rationale for establishing the place and significance of geographic considerations -- the 'geo-factor' -- in the development initiatives implemented in the Lake Victoria Region of Uganda from 1965 to 1991, and projected up to the year 2000.

6.1 GEOGRAPHIC CONSIDERATIONS -- THE 'GEO-FACTOR'

The universe of development initiatives considered during the research included a total 297 development projects and programs of which:

- 95 were identified from the online database in Morrisset Library, University of Ottawa;
- 113 were identified via interviews with elders and officials in various communities in the study Region; and
- 89 were identified through reports in area newspapers during eight months of field work (Appendices A, B and D).

To put the inventory of projects and programs in their research context, the central research hypothesis (H_0) is recalled:

Geographic considerations (the geo-factor) affect the nature, pattern and impact of development initiatives (projects/programs) in the Lake Victoria Region of Uganda 1965-2000.

The examination of this hypothesis and the associated findings are as follows.

Of the 95 sample projects and programs identified in the University of Ottawa online database (Appendix A) only 11 contain a specific policy objective reference that is relevant to the immediate, affected communities. The remaining 84 development initiatives -- or 88.4 per cent -- are of a general economic nature operating at the national level. Hence, for almost 90% of the development initiatives identified in the University of Ottawa online database, geographic considerations -- the geo-factor -- are not part of the development equation, either in the form of location, interaction, disparity, equity, or any other spatial term of reference.

As shown in Appendix A, emphasis in these initiatives has been on the national aggregates, with no regard shown in the development equation for area-specific variables. It appears appropriate to suggest that an effect arising from such an approach could be the observed regional, urban/rural, and sectoral disparities identified in Chapter 5.

A similar effect is also observable in the 113 projects and programs identified by personal interviews with community leaders (Appendix B). In these projects and programs, Kampala city district alone accounts for 40 (35.4%) of them. By comparison, of the initiatives that were

identified, Iganga and Tororo districts have had only 3% and 4% of the implemented projects/programs, respectively. The effect has been, it appears, a concentration of development efforts in the Jinja/Kampala/Entebbe core area, with relatively little direct or indirect development investment flowing into the remainder of the Region or the larger country as a whole.

In regard to the ongoing and projected development initiatives (Appendix D), of the 89 recorded projects and programs, 57 (64%), are located in the Lake Victoria Region, and of those 57 projects and programs, 42 (74%), are located in Kampala alone. For these projects and programs as well as the projected initiatives, the effect is a concentration of development initiatives in the Lake Victoria Region in general, and in Kampala in particular.

The overall tendencies, and the tendencies by type of project and program, may be summarized as follows:

1. To concentrate development initiatives in one or a few large urban centres;
2. To concentrate development initiatives in the Lake Victoria Region;
3. To focus on economic objectives; and
4. To focus on national or macro-level initiatives.

In regard to the central research hypothesis, (H_0), it is therefore rejected by observation in two critical respects. First, on the basis of reviewing the documentation that underlies development initiatives in the Region, the finding is that geographic factors had no bearing on deliberations about the nature or patterns of development programs or projects. Simply put, geographic factors were not and are not explicitly addressed in arguments or plans about development goals, objectives, processes or outcomes.

Second, at the operational or implementation phase, which means examining programs and projects in their "on-the-ground" dimension, no evidence was uncovered (or presented) to suggest (or establish) that geographic factors played a role in putting plans into action. That is, the implementation phase followed the course of the prevailing economic/demographic/political "winds", and no counter-action occurred whereby geographic factors were considered (much less incorporated) in shaping the nature or pattern of the Region's overall development picture.

In the words of Wellar (1987), however, it is appropriate at this stage to ask the question, "So What?". That is, what difference does it make, if any, whether or not the "geo-factor" is incorporated in the legislation, policies and programs of development initiatives, or in their implementation?

The equivalent of that question in this research is the corollary hypothesis (H_1), which addresses the "impacts" part of the H_0 and is expressed as follows:

Development initiatives which neglect the spatial dimension are at best incomplete, and at worst, their consequences may range from ineffective to counter productive to destructive.

To investigate this hypothesis several key quality of life/quality of development indicators are examined to ascertain whether and in what way(s) lack of regard for geographic considerations affected the outcome of development initiatives.

As shown by Figure 23, the area (land and wetlands) of each district in the study area was compared to the respective population (total, urban, and rural). The results indicate:

- 1- A very fragile and predominantly wetlands environment;
- 2- A high population density on the small land area; and
- 3- A high concentration of population density centred on the Jinja/Kampala/ Entebbe core area of the Lake Victoria Region of Uganda.

Thus, the area with the least amount of land area (space) and the highest amount of wetlands, is the area with high population densities, especially in regard to the urban population. Furthermore the results also reveal, conversely, that the areas with the largest rural populations are the least developed, and that the higher the urban population a district has the higher the level of development provision and, by extension, the higher the level of services provided. Also, the findings further indicate that the larger the urban centre the more the services provided. And, as shown by the inventory of program/project activities (Appendices A, B, D) there is a negative relationship between small-sized urban centres and the quantity of development initiatives implemented, 1965-1991, and projected up to the year 2000.

The net effect of this relationship seems to be the continuing rural-urban migration in search of real and assumed opportunities and amenities in the larger urban centres, particularly in Kampala. Indeed, the findings indicate that the nearer one gets to the urban centres, particularly to Kampala, the more the development initiatives there are, and the further one gets from Kampala the less the development initiatives undertaken in the community (Figure 24). Consequently, the emerging urban-rural dichotomy of (apparently) seeking increased productivity through urbanization on the one hand, and the observed need for increased development initiatives in the rural areas on the other, is polarizing the regional labour force. The result appears to be an exacerbation of the urban-rural disparity problem (the rich get richer, the poor get poorer) which is deemed to be a negative consequence.

Area and Population Relationships in Lake Victoria Region, Uganda (1991)

Figure 23

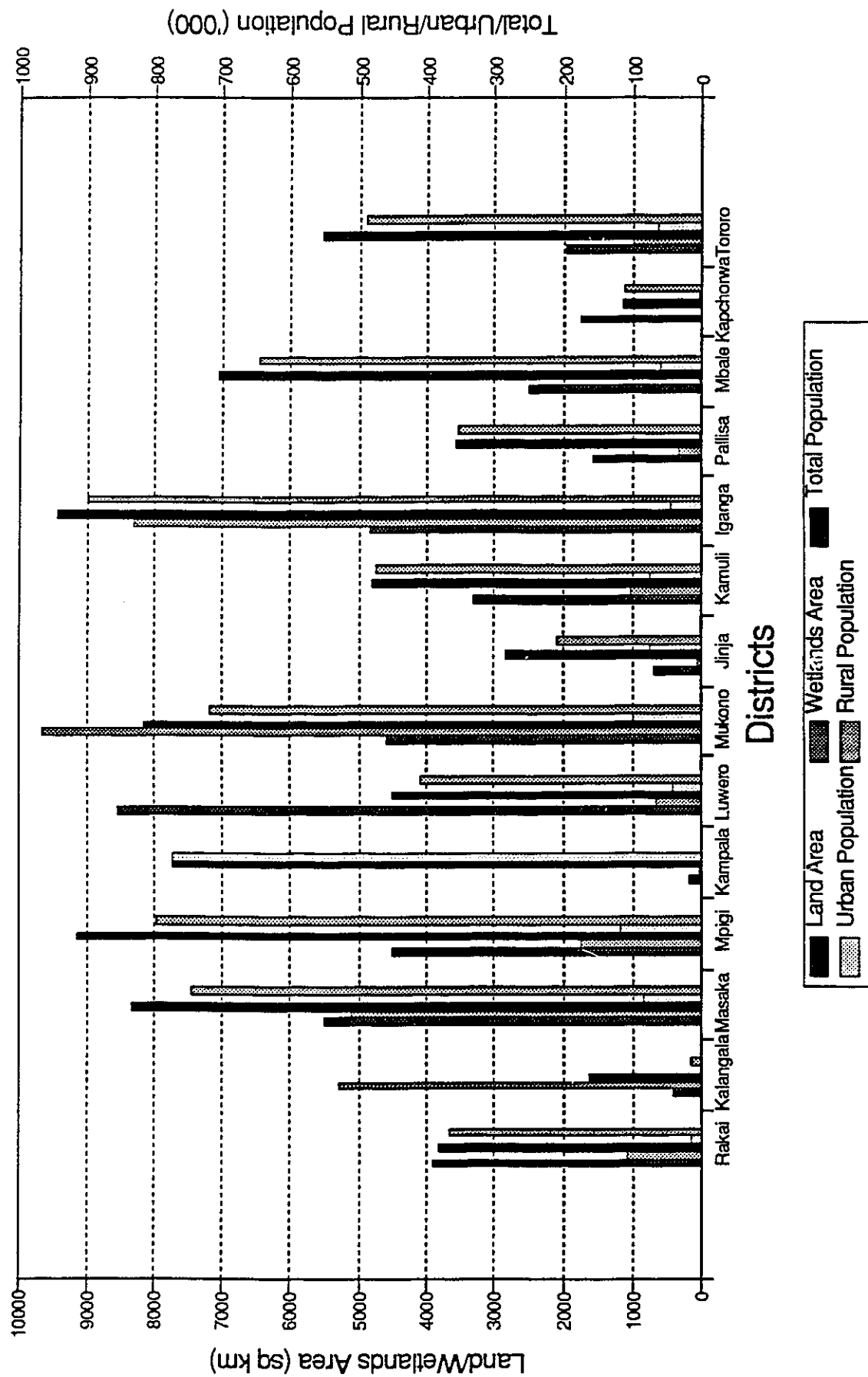
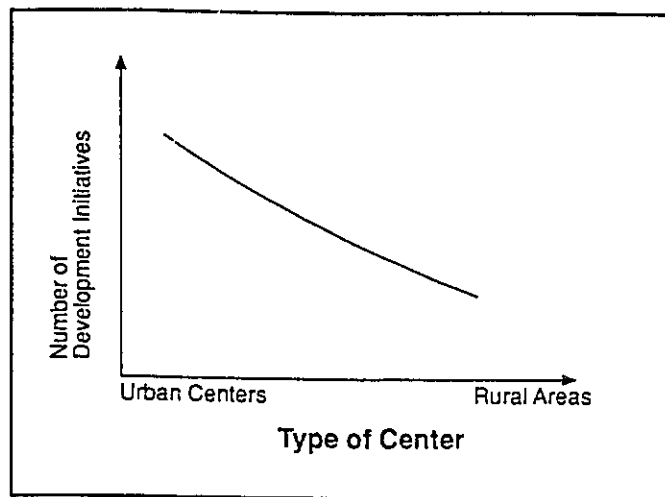


Figure 24

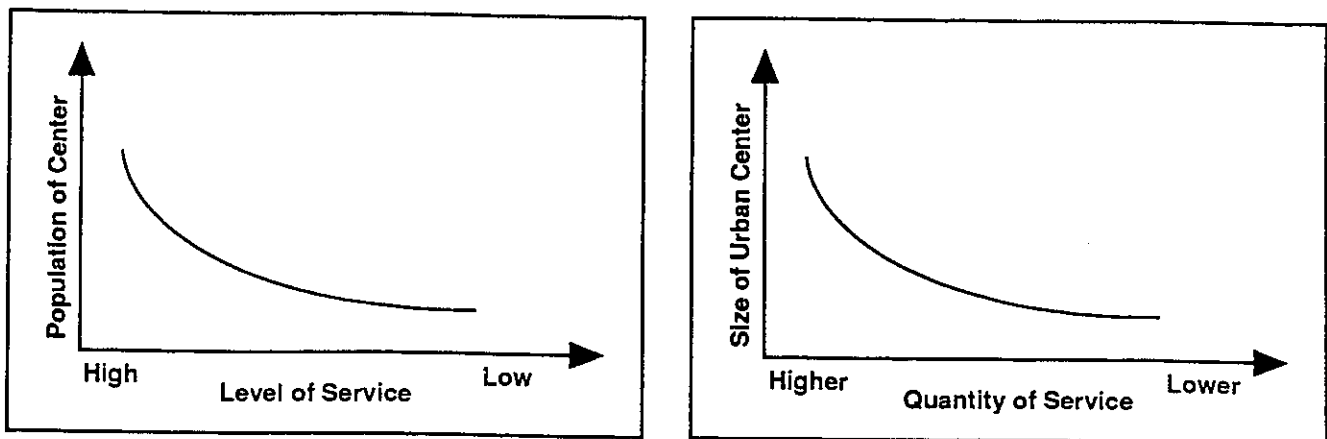
RURAL-URBAN DEVELOPMENT DISPARITY



To briefly re-state this matter, Kampala, as a prime example of the dichotomy attracts "movers" from both the smaller urban centres and the rural areas, with a consequential concentration of the working age population. Hence, the size of an urban centre determines not only its functional attributes, but also its status, density, social diversity, and quantity as well as level of service. This, as illustrated in Figure 25 seems to be the reason why Kampala, Jinja and Entebbe, which are quite close to one another (within 118 kilometers), are the most diversified urban centres not only in the Region but also in the whole country.

Figure 25

SERVICES PROVISION IN URBAN CENTRES



To further explore the hypothesis, the population in each district in the study area was compared with the provision of such services as hospitals, schools, university students, banks and paved roads (Figure 26). The results indicate again a converse relationship (in terms of need) with an overconcentration in the Kampala/Jinja/Entebbe area in general, and, in Kampala in particular, and a reciprocal, diminished level of services in the remainder of the Region. To more fully discuss this aspect of examining H_1 , the next part of this Chapter adopts a specific urban focus.

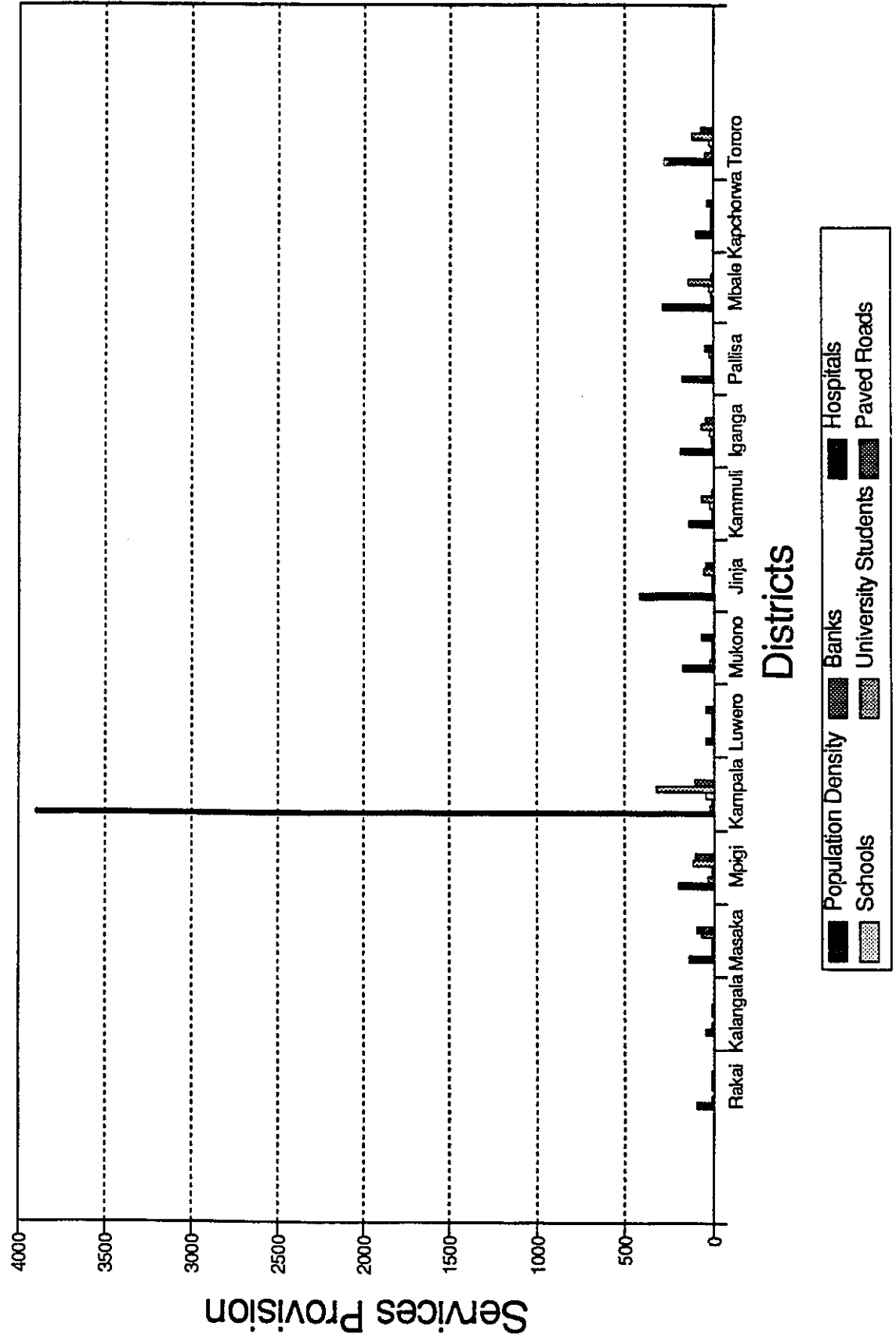
6.2 URBANIZATION

The Lake Victoria Region of Uganda has one large city (Kampala), five municipalities, nine town councils, two trading centres, and one town board designated as urban centres (Provisional Census Results, 1991). According to the 1959, 1969, 1980, and 1991 census reports, the largest eight of these urban centres have increased almost 100% in the last thirty years (Table 11), and the city of Kampala has registered the greatest population growth (Figure 27).

The Region's share of the national urban population showed minor change from 76.6% in 1959 to 82.1% in 1969, 76.1% in 1980, and 76.8% in 1991. However, of the national urban population, Kampala alone accounted for 45.1% in 1959, 54.9% in 1969, 53.9% in 1980, and 54.1% in 1991, a clear indication that the Region's level of urbanization is to a large extent a reflection of the size of its largest city. And, as further evidence of the dominance of large centres, the three most populated urban centres (Kampala, Jinja and Mbale) contain 89.1% of the regional urban population, and 68.5% of the national total urban population.

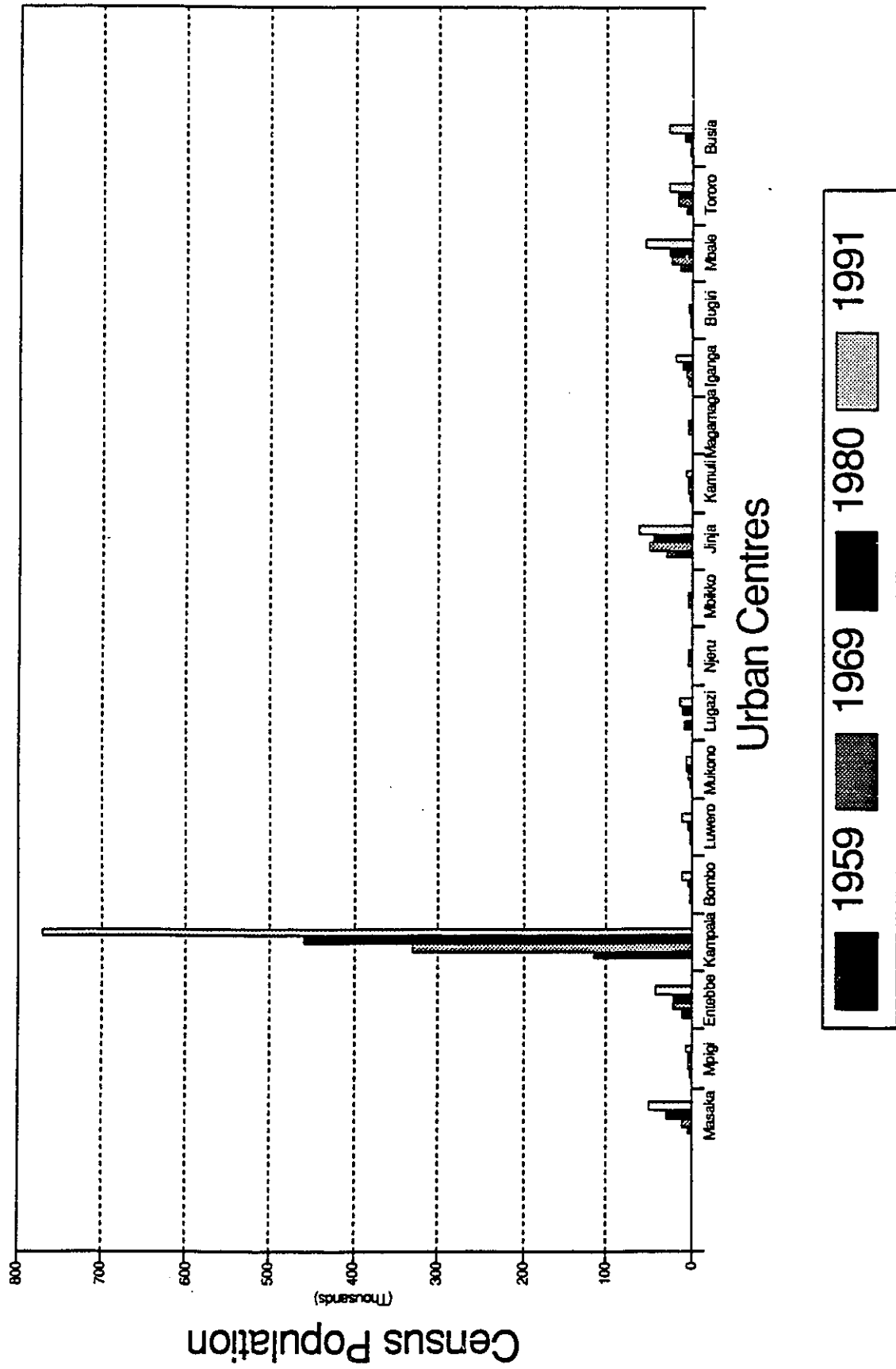
Population Density & Services Provision in Lake Victoria Region, Uganda (1991)

Figure 26



Urban Centres in the Lake Victoria Region of Uganda (1959-1991)

Figure 27



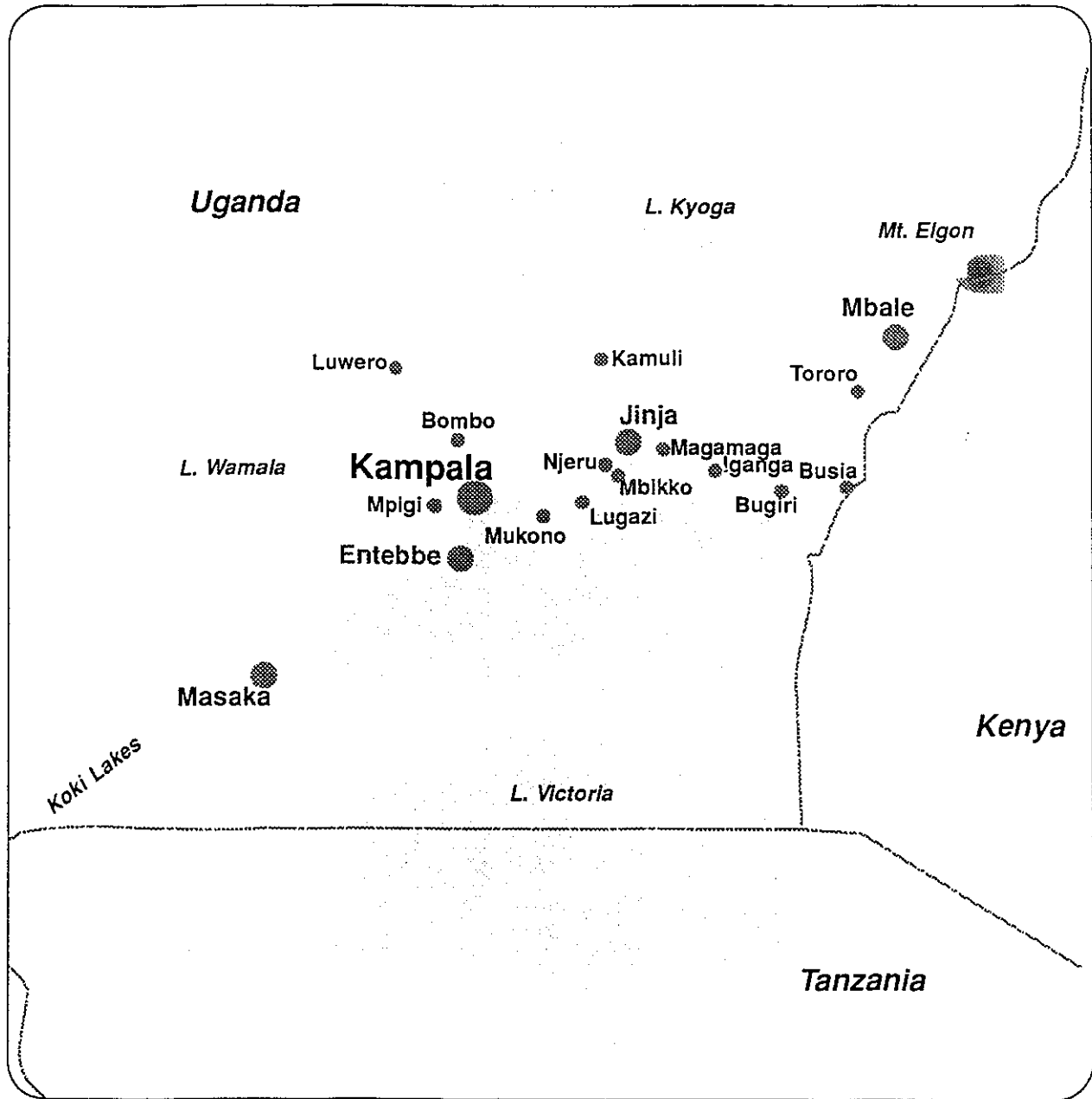
The large urban centres in the Lake Victoria Region of Uganda, and indeed in the whole country, are on the northern shores of Lake Victoria. There are, however, four principal nuclei of urban development around Kampala, Jinja, Mbale and Masaka (Map 7). Kampala had a 1991 population of 773,463 or 70.4% and 54.1% of the regional and national urban populations respectively. Kampala is truly a primate city, in that it is about thirteen to fourteen (13 to 14) times the size of the next largest urban centres of Jinja (60,979) and Mbale (53,634). The urban centres of Kampala, Jinja, and Entebbe (combined population of 876,080 or 61.3% of the total urban population) constitute a triangular primacy core in the Region and indeed in the country as a whole, whereas Mbale and Masaka and their satellite townships generate secondary nodal primacies in the eastern and western parts of the Region.

The medium and small-sized urban centres in the Lake Victoria Region of Uganda are classified either as municipalities, town councils, trading centres, or town boards (Census Report, 1991). According to Christaller's (1933) pyramidal hierarchy of urban centres, the numbers of small and smaller centres in a region are multiples of the number of larger cities. In the case of the Lake Victoria Region of Uganda, such a multiplication of small towns does not seem to occur, which creates a gap in the hierarchy.

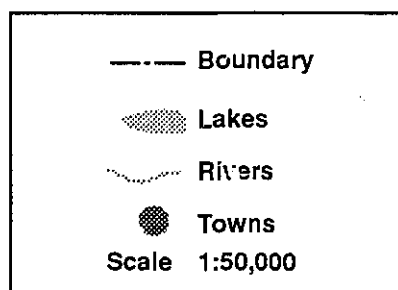
As a result of the big city-rural area gap, when any of the existing centres are 'transferred' to a higher hierarchical rank due to population growth, they are not being replaced in the urban system. Backwardness, lack of economic activity or opportunity, and generally low population densities in the rural hinterlands, all of which can be attributed at least in part to the large-city focus previously noted, appear to account for much of the weakness in the Lake Victoria Region's settlement system.

Urban Centres In The Lake Victoria Region of Uganda

Map 7



Legend



Hence, although the medium and small-size urban centres in the Region are generally either district or subdivisional administrative headquarters, trading centres, transport nuclei, educational centres, religious places, industrial centres, or a combination of any of the above, they lack a critical mass necessary to move up the urban hierarchy.

As for the situation of the rural areas, it is well documented in the literature. To briefly review the situation, they tend to be perceived as a burden on the mainstream society and a drain on development funds (World Resources Institute, 1992-1993). Upon investigation, however, it appears that they are poor (economically, socially, etc.) not because of any particular inherent characteristics, but because they suffer from major institutional and policy obstacles. That is, most of the rural areas are comprised of small-scale farmers who are confronted by institutions that are indifferent to their needs, government policies that penalize them by underpricing their crops, promised incentives that are often not given out, and in the case of women who grow most of the food in most areas, there is a systematic traditional suppression (ibid, p. 21).

The perversity, then, is that through their urban orientation many government policies contribute to the rural poverty rather than rural prosperity and, although substantial amounts of money have been invested in rural development, very little of it has reached the rural poor (World Resources Institute, 1992-1993).

The overall result is that of increased urbanization resulting from a concentration of development initiatives in the largest centres and most notably in Kampala, which has had negative development results for rural areas and for the development process in Uganda as a whole. In regard to the corollary hypothesis (H_1), then, it is found by observation to hold: that

is, lack of regard for the spatial dimension has negatively affected the Region's settlement system with the result that it is over-developed at the upper end and under-developed virtually everywhere else.

6.3 URBAN HOUSING

The growth of the urban areas, as depicted by Kampala, places additional demands on other social and physical facilities and services of the urban centres including housing, water, sanitation, transportation and other social programs. Housing serves as an illustrative example. The excess demand for urban housing has already resulted in housing shortages, overcrowding and poor living conditions. In fact, as illustrated by Figure 22, the larger the urban centre, the larger the percentage of the slum settlement population. If current trends continue, about 336,000 new housing units would be needed in the urban centres by 2003 simply to accommodate the growth of the urban population (Kabera et al, 1990, p. 50). An additional 682,000 units would be required between 2003 and 2018 for a total of more than 1 million new units over the 1988-2018 period (ibid., p. 50). This would be the equivalent of building more than several new Kampalas over the next 30 years. However, such projections are likely underestimates, because they only consider the need for housing to accommodate the growth of the population and do not take into account the current housing shortages, or the need to replace current housing stock as it deteriorates.

Moreover, and more importantly, slums and shanty towns are expanding at a faster rate than the urban places themselves, and nearly four times faster than the national urban population growth (Kabera, 1989). Consequently, by the next decade many people in the Lake Victoria

Region of Uganda will be in shanty colonies. As shown by such shanty towns as Katwe, Mulago, Kamwocya, Katanga, Kivulu and Bwaise in Kampala, Kitoro in Entebbe, Nyendo in Masaka, Walukuba in Jinja, Malaba near Tororo and so on, the urban centres of the future in the Lake Victoria Region of Uganda may not be made of brick, cement, and glass, but of wood, tin, clay and grass, with serious environmental degradation. The combination of increasing urbanization and increasing slum settlement in the urban centres is taken to be further confirmation of the corollary hypothesis (H_1): that is, lack of due regard for geographic considerations in designing and implementing development initiatives directly and negatively affects the provision of urban housing in general and housing in the Region in particular.

6.4 RECONSULTATION WITH RESEARCH CONTACTS

At this point of the research, as per the study's Research Design (Figure 1, p. 9), it was considered beneficial and appropriate to return to the research contacts with the results of the research in hand. Of particular interest in this regard was obtaining a second opinion on the findings, which could mean interpretations different from those already made.

In general there was agreement among the contacts consulted (see list of contacts, Appendix G) that most communities are confronted with deepening disparities within and between areas in the Region. Overall, there is pervasive hunger, poverty, illiteracy, and ill-health. Negative ecological consequences such as charcoal burning, micro-level climate change, soil erosion, deforestation, loss of bio-diversity and the increasing pollution of land, water and air are generally agreed to be threatening the common ecological heritage. Furthermore, there was a consensus that there is:

- unnecessary concentration of development initiatives in the Lake Victoria Region, and particularly in the Jinja/Kampala/Entebbe section of the Region, to the detriment of the whole Region's ecological quality;
- concentration of development initiatives in the largest urban centres which has resulted in rural-urban migration in search of real and/or assumed opportunities such as better employment, education, health, housing and other social services;
- pronounced rural-urban disparity with respect to transport, education, health, clean water, housing and employment provision;
- widespread invasion and destruction of wetlands in favour of industrial development, brick and tile making enterprises, horticultural farming, and waterfront development for industrial, recreational and/or residential purposes;
- large-scale deforestation in favour of large-scale farming, peasant agriculture, charcoal making, ranching, and urban-related uses; and,
- widespread environmental pollution due to unplanned charcoal burning, industrial development, urban expansion, urban garbage and sewerage, motor vehicle fumes, and high density (human) concentrations in slum and squatter settlements.

In addition, and most important to this part of the research, no substantive reasons were given to reject or seriously challenge the observations arrayed to "test" the hypotheses.

First, no counter-examples were presented to demonstrate that geographic factors were explicitly incorporated into the nature or pattern of development initiatives, either as a rule or for particular programs or projects. Hence, the finding that the central research hypothesis should be rejected in regard to the nature and pattern aspects of development initiatives is taken as being confirmed.

And, second, and with respect to the impact aspect of (H_0), and the corollary hypothesis (H_1), no counter-arguments were presented to negate the findings (by observation) that lack of regard for the "geo-factor" in development initiatives resulted in consequences that ranged from ineffective to counter-productive to destructive.

6.5 RESEARCH CONCLUSIONS

The research findings that resulted from the empirical component of the study are summarized in this section. In addition, the strengths, weaknesses, omissions and problems associated with the research methods and techniques are presented as suggestions or cautions for those who might wish to build on this investigation.

Development initiatives in the Lake Victoria Region of Uganda have been heavily concentrated in a relatively few urban centres, and most notably in the capital city of Kampala. However, there has been little in the way of regional dynamics. That is, interaction, diffusion, intervening opportunities, etc. have not had more than a marginal or tangential bearing on which initiatives were or are located where, when throughout the Region.

In other words, development policies did not put an emphasis on or show serious regard for the regional effects of geographic considerations (the 'geo-factor') on regional equity, regional rural/urban balance, regional community interaction, and regional ecological preservation or protection. Instead, the primary orientation for development initiatives in the Region were and are based on the urban-dominated, quick-economic-gains models of development with the seeming philosophy being, "What is good for Kampala is good for the Region; what is good for the Region is good for Uganda." Consequently, development policies have not pursued nor

achieved efficient regional cohesion, the reduction of large disparities in per capita output among areas, the prevention or correction of excessive concentration of economic activities within the Capital Region, nor the more effective and more equitable management of growth within cities.

6.6 SUMMARY

The findings from the field work elaborate the nature and extent of the relationships between geographic considerations and the development initiatives (projects/programs) implemented and projected in the Lake Victoria Region of Uganda, from 1965 to 2000. The general finding is that contrary to the case to date, there is a clear and distinctive role that geographic considerations could and should play in regional development functions, structures and patterns.

In terms of a response to the findings, it appears clear that a number of avenues and challenges for pursuing corrections have been identified. Clearly, these are significant and legitimate policy issues for any perspective on the relationships between geographic considerations and development initiatives. That is, if future development policy seeks to address the circular, negative impacts and effects of development that include but are not limited to rural-urban migration, urban congestion, traffic problems, farmland loss, wetlands' invasion, deforestation, and land, water and air pollution, it appears that great advantages would accrue by enhancing the role of geographic considerations in the development policies, plans and programs in the Lake Victoria Region. Some suggested ways and means of proceeding in this regard are discussed in Chapter Seven.

CHAPTER SEVEN

7.0 POLICY AND PROGRAM IMPLICATIONS

The remaining research task as per the Research Design (Figure 1, p.9) is to discuss the potential consequences of the findings in terms of their implications for development planning, and for related policy or resource allocation issues and initiatives. Illustrative questions to be considered are drawn from earlier work by Wellar (1990) and include the following:

- 1- What impacts have the development initiatives had on the Lake Victoria Region of Uganda in the past and present, and what are the expected future impacts?
- 2- What are the current states of affairs -- economic, social, environmental, institutional, etc, -- and what would constitute preferred states of affairs?
- 3- Why or by what rationale are geographic considerations factored into or out of development initiatives or policy decisions by different levels of government?
- 4- How are geographic considerations assessed as development policy variables, development policy attributes, or development policy decision support system features?
- 5- And, how are geographic considerations factored into or out of development initiatives, or the development process, in the Lake Victoria Region of Uganda?

Planning implications include changes in land use or density, zoning changes, rural-urban migration, environmental pollution, regional disparities and core-periphery relationships. Policy

implications might involve a re-thinking of single solution programs to help people to adjust to new ways of doing things, or, as the working hypothesis (H_0) holds, factoring geographic considerations (the 'geo-factor') into the development initiatives in new or different ways (Wellar, 1990).

Real progress in achieving sustainable development will not likely occur in the Region without a combination of co-operation by all levels of government (national, regional and municipal), the exercise of political will, and improved policies which incorporate geographic considerations when and where they are appropriate. That is, and as the data, reports, and opinions previously examined indicate, policy levers already exist that could re-orient the Region in the direction of sustainable development, but they are not sufficient to cause the right things to happen. On the understanding that the particulars of any policy must be adapted for specific locations, circumstances and situations, the policy directions outlined in this section are suggested as a starting point for incorporating geographic considerations into development initiatives in the Lake Victoria Region of Uganda.

7.1 ACCESS TO RESOURCES

Many of the rural communities do not actually own the land they farm, or have only insecure rights at best. Yet, secure rights to land, trees, water and other resources encourage people to invest in and conserve such resources (World Resources Institute Report, 1992-93). In addition, the distribution of land and other natural resources by ownership or use is often extremely skewed in favour of the few and the wealthy. Negative consequences include much

of the good land being under-utilized while the rural poor crowd onto hillsides with fragile soils, or destroy the forests through clearing for human habitation. Where large areas of productive land lie idle, breaking these lands into smaller holdings to be farmed more actively would provide some of the rural poor with better livelihoods. Land reform and similar policies are controversial and politically sensitive, yet they have proved to be an important policy tool to development where they have been instituted (World Resources Institute Report, 1992-93).

Because sustainable development can be considered a form of investment in the future, many policies that favour investment, including investment in new knowledge or improved technologies, or that favour environmental protection instead of current exploitation and consumption, can assist in achieving sustainable development. Toward that end, it appears clear that increased emphasis must be placed on dramatically increasing the levels of access to resources in the rural areas.

7.2 SETTING PRIORITIES

Many development initiatives have neglected the poorest segments of society. Hence, development priorities need to be re-ordered to commit public funds to provide a basic level of services for all. Policies that favour urban over rural development, or that discriminate in favour of a high technology industry against people-based agricultural development also need to be reconsidered. Therefore, adopting policy variables that give policy priority to alleviating poverty is appropriate on both moral and practical grounds. This approach recognizes that rural

development with a specific reference to geographic considerations, and a sustainable development context, is a basic input to initiating economic development, stabilizing population growth, and preventing further degradation of soils, forests, and other natural resources.

7.3 HUMAN DEVELOPMENT

Providing more and better education, health care, and related social services is an essential part of a policy strategy for achieving sustainable development. Moreover, the evidence is that investment in human development is also one of the most effective ways to accelerate and sustain economic growth (World Resources Institute Report, 1992-93, p. 5).

Because so much spending is presently misdirected, or inefficiently used, successful efforts to reduce military or state security expenditures, halt capital flight, combat corruption, promote reform, and privatize unsuccessful public enterprises could ultimately make available very large amounts of public financial resources to support the badly needed human development policies and programs.

Realizing these opportunities on the scale needed requires significant policy and institutional reorientations. Among the most important of these reorientations is the need to decentralize responsibility for planning and executing development programs, since centralized agencies often lack the information, resources or sensitivity to deal with numerous, varied, and dispersed activities. Policies that favour and empower community organizations to ensure that

the disadvantaged benefit, and that local capabilities are involved, by definition would also favour incorporating geographic considerations into a development policy for achieving sustainable development.

7.4 SUSTAINING AGRICULTURE

Soil deterioration can be slowed or stopped only if farmers and agri-businesses adopt soil-conserving farming systems, and invest in soil conservation practices. Most current policy incentives promote the opposite. Subsidies for agricultural chemicals, for example, encourage many farmers to continue with soil-depleting monocultures, and make the cost of maintaining yields in the face of declining soil-productivity artificially cheap. These subsidies are widespread, and not only discourage sustainable farming practices but lead to eventual depletion of the soils through over-use and misuse. In general, then, a major policy shift is required to sustain the agriculture base of the Region.

7.5 CONSERVATION OF BIODIVERSITY

The usage of biological resources without diminishing biodiversity will require improved policy efforts to prevent further degradation of key natural habitats, and to preserve the health of the Regional ecosystem. Policy attention must not only be focused on protected areas, threatened species, and seed banks, but also on striking a balance between communities' needs and wants and nature's capabilities and limitations. Local, regional and national policies in such

sectors as forestry, fisheries, and wildlife management need to be urgently reconsidered so as to provide economic incentives and legal frameworks that support biodiversity conservation. In addition, virtually all policy levels need to improve their institutional and human capacity to manage and conserve biodiversity, and the need is particularly acute in and near the urban areas. Local community involvement is essential to ensure that those directly affected will both support biodiversity conservation, and receive a greater share of the benefits from biological resources.

Achieving the goal of sustainable development requires an interconnected process along at least three policy dimensions — economic, human, and environmental. There are very close policy linkages among these different dimensions, and actions in one dimension can contribute to achieving goals in another. For example, investments in human capital support policy efforts to reduce poverty, stabilize population, narrow economic inequalities, reduce regional disparities, prevent further degradation of land and biological resources, and promote the development and use of more effective local "know-how". Sustainable development requires a fundamental policy reorientation and practice that requires a specific consideration of geographic elements in the development equation. However, such reorientation and practice will not come easily, and will not come at all without strong local leadership, and the continuing participatory involvement of local people, and mainly the rural masses.

7.6 FURTHER NEEDED RESEARCH

An implicit part of any inquiry is a section on further needed research resulting from the

findings of the initial inquiry. Hence, this section of the thesis suggests several research topics that could build on the present study, and identifies potentially important, related research tasks that were encountered during the inquiry.

The current development emphasis in the Lake Victoria Region of Uganda is on export-oriented initiatives, reflecting the history of external influence, but which lack established, coherent internal organization. Generally, the Lake Victoria Region, and indeed the whole of Uganda is a spatial area in which primacy is clearly centred on Kampala. And, when primacy is not visible at the national or regional levels, it is very obvious at the next stage of the hierarchy, that is, the district level where district headquarters show a degree of primacy in the rural areas.

The contemporary regional development models and approaches in the Lake Victoria Region of Uganda, therefore, do not explain and they hardly even try to interpret development problems and issues in the context of local level circumstances. Because the models are crucial to alternative policies, plans and programs on the one hand, and have been found to be seriously flawed in their application in the Region, they are the focus for the needed research observations.

7.7 CONTEXTUAL CIRCUMSTANCES IN PLANNING

Traditional models of rationality in regional development science, planning and bureaucracy are predicated on the existence of a set of means: $X_1, X_2, \dots, X_n$, being available to achieve a set of ends: $Y_1, Y_2, \dots, Y_n$. In these models it is assumed that the ends are given, and that there is "an identifiable causal relationship between the means and the ends" (Hasson and

Goldberg, 1985). In such a setting, ethical and geographic considerations frequently seem to be rooted in subjective values, are often deemed irrelevant, and tend not to be entered into the calculus of the (rational economics oriented) development planner, scientist, or bureaucrat. However, the literature search, field work, and consultations of which comprise this study suggest that there should be an explicit policy consideration and adequate policy incorporation of ethics and geographic considerations into theories and concepts of development science, planning and bureaucracy with respect to development initiatives (projects and programs).

To illustrate this position, let us consider a harsh reality. As documented earlier in the text, deterioration of the ecological base in many parts of the Lake Victoria Region of Uganda is a matter of concern. To a large extent, such a situation in a developed country would likely be the result of profit-seeking, exploitative or "unsustainable development" practices. However, in the developing nations like Uganda it is more likely crushing poverty and the struggle to survive which leads to the destruction of the resource base. Notwithstanding, however, that developed countries have their own record of environmental degradation problems (Wellar, 1990), it is nonetheless claimed that science and technology offer the way out of the predicament (The Science Council of Canada, 1990; Canadian International Development Agency - CIDA, 1991).

The argument made, in the developed countries, is that new technologies promise to reduce demands on the resource base while increasing industrial competitiveness. And, in the developing nations like Uganda, development is said to be the key to relieving poverty and averting ecological degradation.

Based on the present research however, which re-confirms much of what has already been written about complex inter-connections, that is simplistic linear thinking of the "if x then y" variety: it equates technology to development; development to the absence of poverty; and absence of poverty to the absence of ecological degradation. In other words, if $X_1, X_2, \dots, X_n$, then $Y_1, Y_2, \dots, Y_n$ in the purported logic. Or, given a set of means, a set of ends is automatically achieved. The reality, however, is not so linear and simplistic, as demonstrated by the general literature and this study of the Lake Victoria Region of Uganda. That is, there are more contextual relationships involved in the equation than technology, poverty, development, and ecological mishaps.

Some other element is needed in the equation to represent the contextual circumstances (cultural, political, historical, technological, geographical, ecological, temporal, ethical) so that the if $X_1, X_2, \dots, X_n$, then $Y_1, Y_2, \dots, Y_n$ becomes if $X_0, X_1, X_2, \dots, X_n$, then $Y_0, Y_1, Y_2, \dots, Y_n$. The o in both x and y suggests that the process is not static but dynamic, in that it is always evolving and being transformed and, as such, feedback and adjustment mechanisms need to be instituted so as to suit specific areas at a given time period. The incorporation of contextual circumstances **represented by o** would make development initiatives more adaptive to place, time, culture, technology and political environment. This seems to be the missing link in development theory and practice, and indeed in the development process of the Lake Victoria Region of Uganda. It is suggested as an important research topic that remains to be explored.

7.8 THE 'GEO-FACTOR' IN PUBLIC POLICY FORMATION

The focus of this thesis is on:

- a. the substance of public policy and geographic considerations (the 'geo-factor'); and
- b. the process of public policy and the contribution of geographic considerations (the 'geo-factor') to decision-making.

It was found that geographic considerations (the 'geo-factor') must take on new significance as a central consideration in public policy formation at all levels of government, and particularly with respect to public policies involving urban, rural and regional development initiatives in the Lake Victoria Region.

In the discussion, two approaches have been used to examine the relationships among public policy formation, geographic considerations (the 'geo-factor'), and development. First, an indicative set of past, present and projected development initiatives gone or going wrong due to a lack of regard for geographic considerations (the 'geo-factor') is presented and briefly discussed (Appendices A, B, D and F). Second, reference is made to the major demographic, economic, environmental, and other trends which, because they are spatially expressed in the real world, require fundamental readjustments so that geographic factors (the 'geo-factor') become explicit policy considerations.

Several harsh realities are noted which, previously expressed in Wellar, (1989, pp 601-608), serve to establish that the discussion of the relationships expressed in the thesis is "genuinely a matter of pressing and urgent necessity". It is appropriate, therefore, to acknowledge and appreciate that, on the one hand, the Lake Victoria Region of Uganda is presently comprised of precisely the same regional quantities of land, water and air resources as was the case 100 years ago. And, there is very little likelihood that those same regional resources will be quantitatively increased in any form or shape in the foreseeable future. That

is, while they are likely to be changed, they will not be increased because there are limits to geographic creativity.

On the other hand, however, and over the same time span, there has been a steady increase in the regional population, and the associated, cumulative population-related demands and impacts on regional land, water and air resources. Furthermore, these population-related demands and impacts are most likely to continue increasing in the future.

Planners, policy-makers and the larger public, therefore, will of necessity have to appreciate the serious policy implications of the situation. There are limitations -- physical, political, temporal, spatial, ecological, technological -- to the capacity of the Region to further tolerate and absorb increased development demands, impacts and assaults on its fixed and fragile ecological endowment. Most important, planners, policy-makers, and the citizenry in the Region can no longer afford to ignore or discount the lessons which history provides. They can no longer regard negative development impacts and situations as simply arising at locations which they can "conveniently label as elsewhere" (Wellar, 1989, p. 606).

As for the uniqueness and particularity about the wide open and forested Lake Victoria Region of Uganda, it is not at all different from the unique, wide open, and forested Basin of the Great Lakes a hundred years ago. What is significantly different, however, is that there are already about eight million people in the Region and more on the way who are, or soon will be seeking new homes in new areas. In other words, while a long-wave of rural-push/urban-pull related population growth and development may have occurred over the span of the century,

future waves of population growth-related processes are bound to be shorter, and may be in the span of a single decade or less at all levels, that is, local, regional and national.

Such scenarios prompt policy questions many of which follow from a set of policy and development questions raised by Wellar (1978, 1982, 1989) in a Canadian context and Enyolu (1987) for Nigeria. In particular, and after Wellar (1989):

- If the Regional population now represents 52.5% of the national population, is it not possible that a continued rural-urban migration will increase it enormously and perhaps within a span of a few years?
- If the municipalities of Kampala and Jinja contain about 90% of all industrial activities in the country, what are the regional implications with respect to employment provision?
- If the urban centres of Kampala, Jinja, Entebbe and Masaka contain 64.8% of the national urban population, how prepared or equipped are municipal and local governments and agencies for future urbanization waves of the kinds that have occurred in so many areas, where space was not thought of as a policy problem?
- If Kampala city alone contains 54% of the national urban population, are there policy mechanisms to deal with future demands for housing, transport, garbage collection, sewage treatment, and ecological concerns in their spatial contexts?
- If the slow pace of construction of power plants leaves a large part of the country with energy deficits, what are the spatial implications for the long-term utilization of human and natural resources?
- If the investment capital (foreign and domestic) continues to accumulate in the urban centres, particularly in Kampala, Jinja, and Entebbe, what will land use distortions mean

municipally, regionally, and nationally?

- If human impacts upon the shoreline wetlands and forests affect natural equilibrium forces, are there policy variables and analyses to measure the rhythm of landscape changes and responses to economic and ecological implications?
- If rural-urban migration results in further congestion of urban slums that presently make up about 65% of the main urban centres, are there policy mechanisms to deal with consequential demographic, economic, political and ecological imbalances?

Finally, in related contextual terms, what about the present and future land, water, and air resource situations in the Lake Victoria Region in relation to that of the rest of the country? Is everything in balance with regard to the quantity and quality of land, water, and air resources? Is the demand and supply of these resources in balance according to the values, attitudes, and perceptions of the local people in the Region? And do planners, policy-makers, scientists, entrepreneurs, and the larger public have things under effective and efficient policy control? Are governments and agencies prepared to deal with present and future land use activities and impacts, water use activities and impacts, and air use activities and impacts? Questions could go on, but the point is here made. There is an urgent, compelling need for continued research into how to better incorporate geographic considerations into future development initiatives if long-term sustainable development is to be achieved in the Lake Victoria Region of Uganda in particular, and throughout Uganda in general.

APPENDIX A

PROJECTS/PROGRAMS FROM ON-LINE DATABASE, MORRISSET LIBRARY, UNIVERSITY OF OTTAWA

This appendix contains 95 projects/programs identified from the online database in Morrisset Library, University of Ottawa.

The projects/programs are intended to indicate the stated policy objectives of the respective projects/programs. Also, they provide an indication whether geographic considerations -- 'the geo-factor' -- are part of the development equation.

PROJECTS/PROGRAMS FROM ON-LINE DATABASE - MORRISSET - IDIRIS

NO	LOCATION	AUTHOR(S)	OBJECTIVE(S)	TIME
1	Nationwide	Cherniavsky M.	Economic projections to 1955 - Population, GNP, Savings, Budgetary Resources, Food consumption - rural/urban areas: agricultural production, education, expenditures and enrolment.	1965
2	Nationwide	Canadian Association of African Studies	Issues in African Dev: social, cultural, employment, anthropology, education opportunities for women in Uganda.	1972
3	Nationwide	Faaland & Dahl UNCTAD GENEVA	Economy of Uganda: An Econometric Study of Structural Relationships with Projections of Trade and Resource Gaps for 1970-1975.	1965
4	Nationwide	Karn, J. Institute for Development Research Copenhagen	Integrated Research on Livestock nutrition and health section.	1972
5	Nationwide	Morgantown, West Virginia University, Makerere University	Agricultural Education in Uganda.	1972
6	Nationwide	Kajungu, D.K. & Nelson, R.E.	Evaluation of the USAID Extension Saturation Project in Uganda.	1973
7	Nationwide	Clark D.G., Makerere Institute of Social Research, Kampala	Development Planning in East Africa. Comprehensive planning; Economic Policy and plan implementation strategies, and economic trends in Uganda.	1965
9	Nationwide	Gue, L.R. Canadian Bureau for Int. Education, Ottawa	Links, Sponsored Development Projects.	1972
9	Nationwide	Namuddu, K. Institute for Teacher Education, Kampala	Case Study of Uganda: Primary School Pupils as Authors.	1990
10	Makerere University, Kampala	Angliin, D.G. & McKenna, P.H.	Makerere University Library Support Committee Report Activities, Ottawa, Ontario	1981
11	Nationwide	Ominde, S.H. Population Studies & Research Institute, Univ. of Nairobi	Population Change & Socio-economic Dev. in Uganda.	1980
12	Nationwide	World Bank, Washington, D.C., US	Economic Dev. of Uganda, Mission report at the request of the government of Uganda.	
13	South West Uganda - River Nyabisheki Catchment of Mbarara District	Groundwater Research Group, University of Toronto, Ontario	Hydrology of Fractured Bedrock systems. Report to the water Dev. Dept Ministry of Water and Mineral Resources, Kampala	1962
14	Central and Buroga Provinces	Tindigandayo, Je Dept. of Political Science, Dalhousie University	Role of development project administration in the economic growth of Uganda,	1979

NO	LOCATION	AUTHOR(S)	OBJECTIVE(S)	TIME
15	Nationwide	Hoorweg, J Dr. McDowell, I, The Hague, Mouton Publishers	Evaluation of Nutrition education in Africa, Community Research in Uganda.	1979
16	Nationwide	UN., New York, NY General Assembly	Description of needs, project outlines, and background information on the refugees situation.	1984
17	Nationwide	Commonwealth Science Council, London, African Energy Programme	Report on the Planning meeting on Charcoal production and Utilization in Uganda.	1980
18	South West Uganda near the border with Tanzania	UNDP, New York, NY	Organization for the planning & development of Kagera River Basin.	1982
19	Nationwide	Intergovernmental Authority on Drought and Dev. Donors' Conf.	National Development Projects in Uganda.	1987
20	Nationwide	Uganda Ministry of Planning and Economic Develop. Joint FAO/WHO Regional Food & Nutrition Commission for Africa, Acra	Uganda's National Food and Nutrition Policies and Programmes.	1984
21	Nationwide	World University Service, Geneva	Special Women's edition of W.V.S. news	1984
22	Min. of Health, HQS, Kampala, Uganda	USAID, Washington, D.C., US	HIV Infection and AIDS: A report to Congress on the USAID Program for prevention and control.	1991
23	Nationwide	Institute of Resources Dev. Macro Systems, Inc. Columbia, MD, US & Uganda, Ministry of Health, Kampala & USAID Bureau for Africa, Kampala	Uganda: Demographic and health survey — a summary report.	1990
24	Nationwide	Yost, David & Eswaran, Hari, U.S. Dept of Agric. Soil Conservation & Management Support Services. USAID Bureau for Science & Technology, USAID Kampala	Major land resources areas of Uganda: maps and statistical tables.	1990
25	Nationwide	Land Tenure Centre, Univ. of Wisconsin, Machison, WI, US & USAID Bureau of Scie. & Tech. Office of Rural & Inst. Dev. Washington, DC, US & USAID, Kampala	Security of tenure in Africa. Findings of a program of comparative research and their policy and programme implications for Uganda.	1990

NO	LOCATION	AUTHOR(S)	OBJECTIVE(S)	TIME
26	Southwest Uganda, Rukumpiri District	Kisamba - Mugerwa & Nuwanga, Zake et al. Univ. of Wisconsin, Madison, Land Tenure Centre & USAID Kampala	Quarter Century of individual title: an analysis of the Rujumbura pilot land registration in Uganda and its impact on small holder agriculture.	1989
27	Nationwide	Burrows, R. & Kisamba - Mugerwa	Land tenure access to land and agricultural development in Uganda: An analysis.	1989
28	Nationwide	Coulson, Gur W., Jr & Kernde, Gordon & Oterby, Olle, USAID, Kampala	Report and recommendations for the rehabilitation of the District Cooperation Unions.	1990
29	Nationwide	Livingstone, Owen & USAID, Kampala	Final Report: Phase I - phosphate fertilizer and agricultural limestone production and distribution feasibility	1988
30	Nationwide	Garcy, Fred; McCarry, Jesse; McPoho, Zana, Centre for Privatization Scientex Corporation, USAID, Washington, D.C., US	Departed Asians Property Custodian Board : A summary of findings and recommendations for a disinvestiture programme	1989
31	Nationwide	US Dept. of the Int. Geological Survey, EROS Data Centre, Sioux Falls, S.D., US., USAID Kampala	Establishing the structure of an Inter-governmental (national/sub-regional) early warning system on drought	1989
32	Nationwide	Land Tenure Centre University of Wisconsin, USAID Kampala, Makerere Univ., Kampala	Land tenure and agricultural development in Uganda.	1989
33	Nationwide	Glen, Kim G. Agricultural Co-op Dev. Int. Washington, D.C., US. USAID Bureau in Kampala, UG	Consultancy report on information management for the Ministry of Co-operatives and marketing	1989
34	Nationwide	Ferglie, Winton L. Agricultural Co-op Dev. Int. Washington, D.C., US. USAID Bureau in Kampala, UG	Consultancy report on computer systems - Analyst/Programmer for National Inputs Co-ordination Unit.	1989
35	Nationwide	Hogan, Edward B. Atherton, Joan S. et al, USAID Bureau in Kampala, Uganda	Agricultural Sector assessment, Uganda	1982

NO	LOCATION	AUTHOR(S)	OBJECTIVE(S)	TIME
36	Nationwide	Westinghouse Co. Institute for Resource Dev. Inc. Columbia, MD, US Min. of Health, Kampala, Uganda, USAID, Kampala, UG	Uganda National Demographic and Health Survey -- A census exercise	1989
37	Nationwide	Pierce, Rick D. Agric. Co-op Dev. Int. Washington, DC, U.S. & USAID Kampala	Management Information Systems Assessment for the Co-op Agric. & Agri-business project.	1989
38	Central and Western Uganda	Alumo, John, Bunnon Christine et al, USAID Bureau in Washington, DC US and Kampala Uganda	Settlement in forest reserves, game reserves, and national parks in Uganda. A study of social, economic and tenure factors affecting land use and deforestation in Mabira Forest reserve, Kibale Forest reserve and Kibale Game reserve corridor.	1989
39	Nationwide	Enger, Warren, J. Burgess, Derrick, R. Ahimbisibwe, J.K. Ronco Consulting Corporation Washington, DC, US & USAID Kampala UG	Oilseed Production and processing sector analysis.	1989
40	Nationwide	Int. Service for National Agric. Research, the Hague, Ni Uganda, Ministry of Agric. Kampala & USAID Office, UG	Establishment of a Natinal Agricultural Research Organization	1988
41	Nationwide	Barrows, Richard; Roth Michael Univ. of Wisconsin Land Tenure Centre, USAID Washington	Land tenure and investment in African agriculture, theory and evidence.	1989
42	Nationwide	Berry, I. Guardiano, J. et al, Clark University, Int. Dev. Program Worcester, MA, US and USAID Washington	Background studies in East African Trade with a reference to Uganda.	1988
43	Nationwide	Turner, B.L., Schwartz, Harry et al, Clark Univ. Int. Dev. Prog. Worcester MA, US & USAID, Washington, D.C. US	Trends and Inter-relationships in food, population and energy in Eastern Africa with a specific reference to Uganda	1980
44	Nationwide	USAID Bureau in Kampala, UG	Credit needs assessment report: A report by the staff of the component of the rural economic recovery project.	1987
45	Nationwide	Industry Council for Dev. New York, NY, US & USAID Kampala, UG	Private seed industry development in Uganda.	1987

NO	LOCATION	AUTHOR(S)	OBJECTIVE(S)	TIME
46	Nationwide	Family Health Care Inc., Washington, DC, US & USAID Kampala UG	Family Health Care Report: A working paper on health services development in Uganda.	1980
47	Nationwide	Murray, Edwards, Agri Co-op Dev. Int. Washington, DC US & USAID Kampala	A review of the computer requirements of the Ugandan Agricultural Finance Agency.	1986
48	Nationwide	Cook Willie, F.; Jackson Robert I. USAID Washington and Kampala	Feasibility Study on Uganda Oilseed production	1987
49	Nationwide	Epila, J.S.O.	Case for insect pest management in agro. forestry research and agricultural systems.	1886
50	Nationwide	Burchfield, Shirley A. USAID Washington, DC, UG	Improving energy data collection and analysis in developing countries : a comparative study - Uganda, Liberia and Sudan.	1986
51	Nationwide	Collinson Michael Int. Maize & Wheat Improvement Centre, Mexico & USAID Washington, DC, US	Issues-concepts and procedures for the use of the FSR in agricultural research and planning. In farming systems research contribution to improved agriculture in Eastern Africa.	
52	Nationwide	USAID Office of Kampala, UG	Country development Strategy Statement.	1982
53	Kampala & neigh- bouring areas	Canter, M.J. Agri Co- operative Int. Washington, DC, US & USAID Office, Kampala.	Report on Uganda Co-operative Bank Ltd., A.I.D. no. 613-0108 A-00-2005-00	1983
54	Nationwide	USAID Kampala, Uganda	Country development Strategy Statement, data abstract, FY 1984.	1983
55	Nationwide	Educational Dev. Centre, Inc. Newton, MA, US	Basic concepts of mathematics, Rev. ed., Entebbe Mathematics Series.	1968
56	Nationwide	USAID, Kampala, Uganda	Country development Strategy Statement, FY 82	1980
57	Nationwide	Tukahirwa, E.M.	Pesticides and their utilization : a profile for Uganda. Insect science and its application.	1984
58	Nationwide	Agri. Co-op Dev Int. Washington, DC, Min. of Co-op & Marketing	Report on Co-op Survey project.	1985
59	Nationwide	Collard, Kathleen, Awalaya, L.T. MA. et al. Educational Services Inc. Newton, M.A. US	Teachers Guide, Mathematics Secondary Two, Curriculum Design	1964
60	Nationwide	Hardgrove, Clarence, Andy, Lucy, Educational Serv., Inc., Newton, M.A. US	Primary Three: Pupils Book: Mathematics Curriculum Design	1965

NO	LOCATION	AUTHOR(S)	OBJECTIVE(S)	TIME
61	Nationwide	Finney, Roseh, Calloway, Jean M et al.	Geometry Students Text: Secondary One. The first year of a four year course.	1966
62	Nationwide	Finney, Rossh Calloway, Jean M. et al, Educational Serv., Inc., Newton, M.A. US	Geometry Teachers Guide: Secondary One. The first year of a four year secondary course.	1966
63	Nationwide	Finney, Rossh Calloway, Jean M. et al, Educational Serv., Inc., Newton, M.A. US	Algebra Students Text: Secondary One. The first year of a four year course.	1965
64	Nationwide	Finney, Rossh Calloway, Jean M. et al, Educational Serv., Inc., Newton, M.A. US	Algebra Teachers Guide: Secondary One. The first year of a four year course.	1965
65	Nationwide	William Awadagin, Blackwell David, et al., Educ Serv., Inc., Newton, M.A. US	Students Text Secondary Four - Algebra	1966
66	Nationwide	William Awadagin, Blackwell David, et al., Educ Serv., Inc., Newton, M.A. US	Teachers Guide: Secondary Four - Algebra	1966
67	Nationwide	William Awadagin, Blackwell David, et al., Educ Serv., Inc., Newton, M.A. US	Students Text Secondary Four - Geometry	1966
68	Nationwide	Masland, John W. Education and World Affairs, New York, NY US	Summary report: Study of manpower needs, educational capabilities and overseas assistance.	1965
69	Nationwide	Jaenson, Carol Hansworth, Josephian et al USAIF Kampala, UG	Experiment in Int. Living: Uganda social and Institutional profile.	1984
70	Nationwide	Planning & Dev. Collaboration Int. Inc. Washington, DC, UG	Housing Policy Review in Uganda.	1984
71	Nationwide	Education & World Affairs. New York, NY, US & USAID Kampala	Study of Manpower Needs, educational capabilities and overseas assistance, phase II with Uganda as a case study.	1965
72	Nationwide	Fleuret Patrick USAID Washington DC, US	Draft Background Papers: Community - level and conditions of development assistance needs in Uganda.	1980

NO	LOCATION	AUTHOR(S)	OBJECTIVE(S)	TIME
73	Nationwide	Marti, Fres R. Runnibaum, B.F., Tarris, J.E. Agri Co-op Dev. Int. Washington DC, US & USAID Kampala, UG	Report and policy recommendations for the co-operative sector in Uganda.	1984
74	Nationwide	USAID Bureau for program and policy Co-ordination. Office of evaluation, Washington, DC, USA	Selected statistical data by sex, demographic and other social indices analysis.	1983
75	Kigazi, Southwest Uganda	Scheres, Friede, IFO Institute for Economic Research, Munich DE	Development of small holder vegetable production in Kigazi - southwest Uganda	1969
76	Nombara	Little (Arthur D.) Inc. Cambridge, MA US & USAID Washington, DC, US	Options for the modification of the Nombara Refinery - A case study for Kenya and Uganda - Functional Analysis.	1983
77	Nationwide	Sasser, J.N.; Smith, Mark A. Int. Inst. for Tropical Agric. Ibadan, NG & Dept of Plant Pathology, Raleigh Ne, US & USAID Washington, DC, US	Proceedings of the Third Research Planning Conference on Root-Knot Nematodes in Uganda.	1982
78	Nationwide	Bonde Dale S. Agri Co-op Dev. Int. Washington, DC, US	Report on the Uganda Co-operative Transport Union, Ltd.	1983
79	Nationwide	Batchilder, D. Experiment in Int. Living, Brattleboro, UT, US & USAID Washington, D.C., US	Program Report - Rural Dev./Small Business/Agric. Training/Teacher Training/Management Training/Primary Health Care/Co-op institutional building	1980
80	Nationwide	Barry Leonard, Hughes C. Ellen Clark University, Program for Int. Dev. Worchester, MA, US & USAID Washington, DC, US	Eastern Africa, Profiles Uganda Country Profile No. 6.	1980
81	Nationwide	Varady RG, USAID, US Dept of State Dept of Interior Nat. Park Service & University of Arizona	Draft Environmental Profile of Uganda/National Park Service.	1981
82	Nationwide	Phillippi, Thomas Mango Cecily Evaluation Technologies Inc., Arlington, VA, US	Evaluation Technology EA: A Regional profile	1981
83	Nationwide	Hoden. S.J., USAID Bureau for Africa, Djinboutu, DJ	Selection of annotated bibliography of social science materials for Uganda, followed by an expanded bibliography	1979

NO	LOCATION	AUTHOR(S)	OBJECTIVE(S)	TIME
84	Nationwide	Starks, K.J.	Increasing infections of the sorghum shoot	1970
85	Nationwide	Starks, K.J., Schumaker G., Ebenhurt, S.A. US Dept of Agric. Research Serv. North eastern Research Centre, Bettsville, MD, US	Soil fertility and drainage damage by chio Zonethus to grain sorghum journal of economic entomology, v.64(3)	1971
86	Nationwide	Saggett, Hugh Ebenhurt, S.A. US Dept of Agric. Research Serv. North eastern Research Centre, Bettsville, MD, US	Recurrent selection of sorghum grain - crop science.	1970
87	Nationwide	Ferguson, D.S. Poleman, Thomas T. Cornell Univ. Ithaca, NY, US.	Modernizing African Animal Production: the Uganda Tick Control Project.	1973
88	Nationwide	Schultheis, M.J. Cornell Univ. Ithaca, NY, US.	Population Growth, Labour utilization, and regional development in Uganda. A summary report of a Study in Progress.	1972
89	Nationwide	Oloya, J.J.; Poleman T.J. Cornell Univ. Ithaca, NY, US.	Urban Food Consumption patterns in Uganda. Nutrition and Food Economy.	1973
90	Nationwide	Schultheis, M.J. Cornell Univ. Ithaca, NY, US. & Makerere Rural Development Research Centre, Paper No. 121.	Statistics of the World Food Problem: A review with an application to Uganda.	1972
91	Nationwide	Kiapi Abraham Tufts University, Medford, MA, US	Law and population in Uganda.	1977
92	Nationwide	Trpis, Milan University of Notre Dame, Notre Dame, IN, US	Population of Aedes ISTS AEGYTPI and other species in Kenya and Uganda.	1972
93	Nationwide	Nelson, R.K., Kayungu, D.K. West Virginia Univ. Morgantown, WV, US	Evaluation of the USAID Extension Saturation Project in Uganda.	1973
94	Nationwide	Schultheis, M.J. Cornell Univ. Ithaca, NY, US. & Cornell Agric. Economics Staff - Paper No. 74-27	Economics and Economic Research in Uganda during the Amin Period.	1974
95	Cotton Growing Areas in Uganda	Rukandema, F.M., Cornell Univ. Ithaca, NY, US. & Int. Agricultural Mimeograph, 43.	Prices and Cotton Supply Analysis in Uganda.	1974

APPENDIX B

PROJECTS/PROGRAMS AS OF PERSONAL INTERVIEWS WITH COMMUNITY LEADERS IN VARIOUS PARTS OF THE REGION

The development initiatives (projects/programs) cited in this appendix are those that community leaders reported as having been implemented at different times and in different communities between 1965 and 1991. The list is not presented as a comprehensive summary; rather it is intended to indicate a general sense of the nature, spatial distribution/concentration, and sectors of development initiative activity over the 1965-1991 period.

COMMUNITY INTERVIEWS GENERATED PROJECTS/PROGRAMS

DISTRICT	DEVELOPMENT PROJECT/PROGRAM
Kalangala	Kalangala Rural Farm School Kalangala Secondary School
Rakai	Bikira Community Medical Centre Bikira Secondary School Bikira Technical School Needy Children Education Assist. Rakai District Headquarters Masaka Kyotera Road
Masaka	Nshara Ranching Scheme Kitovu Hospital Villa Maria Hospital Kalungu Secondary School Bwanda Girls Secondary School Bukalasa Seminary Katende Franciscan Monastery Katende Franciscan Winery St. Charles Lwanga S. School Nkozi T.T.C. & Hospital
Mpigi	Mitala Maria S. School Gomba Hospital Mpigi District Headquarters Katende Secondary School Entebbe Secondary School Entebbe Resort Beach Entebbe International Airport Entebbe Beach Kazi Scouts Centre Masulita Vocational Training Centre Kigungu Fishing Village Kasenyi Fishing Bay Bunga Posts & Telecommunications Lake Victoria Hotel Renovations Nsamizi Training Institute Kampala-Masaka Road Renovation Kakiri Secondary School
Kampala	Nile Hotel/Conference Centre Complex Appolo/International/Sheraton Hotel Uganda House Uganda Commercial Bank Hqs East African Development Bank Greenland Bank Nile Bank Co-operative Bank Nagulu Police Lines Nsambya Policy Barracks Lubiri/Mbuya Barracks East African Breweries UGIL Institute of Public Administration Bukoto Flats Kiwafu Housing Estate Rubaga Housing Estate Nsambya Housing Estate Bugolobi Flats Pope Paul II Memorial Centre Nsambya Girls Rubaga Girls Mulago Nurses Hostel

DISTRICT	DEVELOPMENT PROJECT/PROGRAM
Kampala (cont'd)	Doctors Village Bahai Centre Kiseka Foundation Mulago Hospital Gaba Beach Gorba Fish Works Dairy Corporation Namwongo Slum Upgrading *A 16 storey tower and shopping Arcade at Nile Hotel Wankulukulu Mutesa II Stadium Bible house Colline House Sure House Kisozi Ranchers Offices Hotel Africana Makerere University Halls
Mukono	Mukono-Kayunga Road Mukono Theological College Mukono Secondary School Mpoma Satellite Station Colline Hotel Nakanyonyi Seniors Home Bukoloto Milk Collection Centre Nakaseke Hospital Water Supply Kayunga Fruit Canning Mukono Hand Loom Weaving Mukono Protestant University Katosi Fishing Village Nyanza Textiles Ltd. Nyanza Breweries Nyenga Seminary Stella Maris Nsube Namugongo Martyrs Shrine Lugazi Sugar Works Salama Vanilla Farmers Owen Falls Dam
Jinja	Jinja Vocational Centre Nile Breweries Crested Crane Hotel Grain Silos Oil Storage Tanks Different types of industries Jinja Show Ground Walukuba Housing Estate Jinja Port Facilities Ripon Falls Hotel Kakira Sugar Works
Iganga	Kibimba Irrigation Rice Scheme Doho Rice Scheme Inula Sirivoculture
Tororo	Tororo Girls Tororo Cements Works Busitema Agricultural College Busitema/Busia Road

APPENDIX C

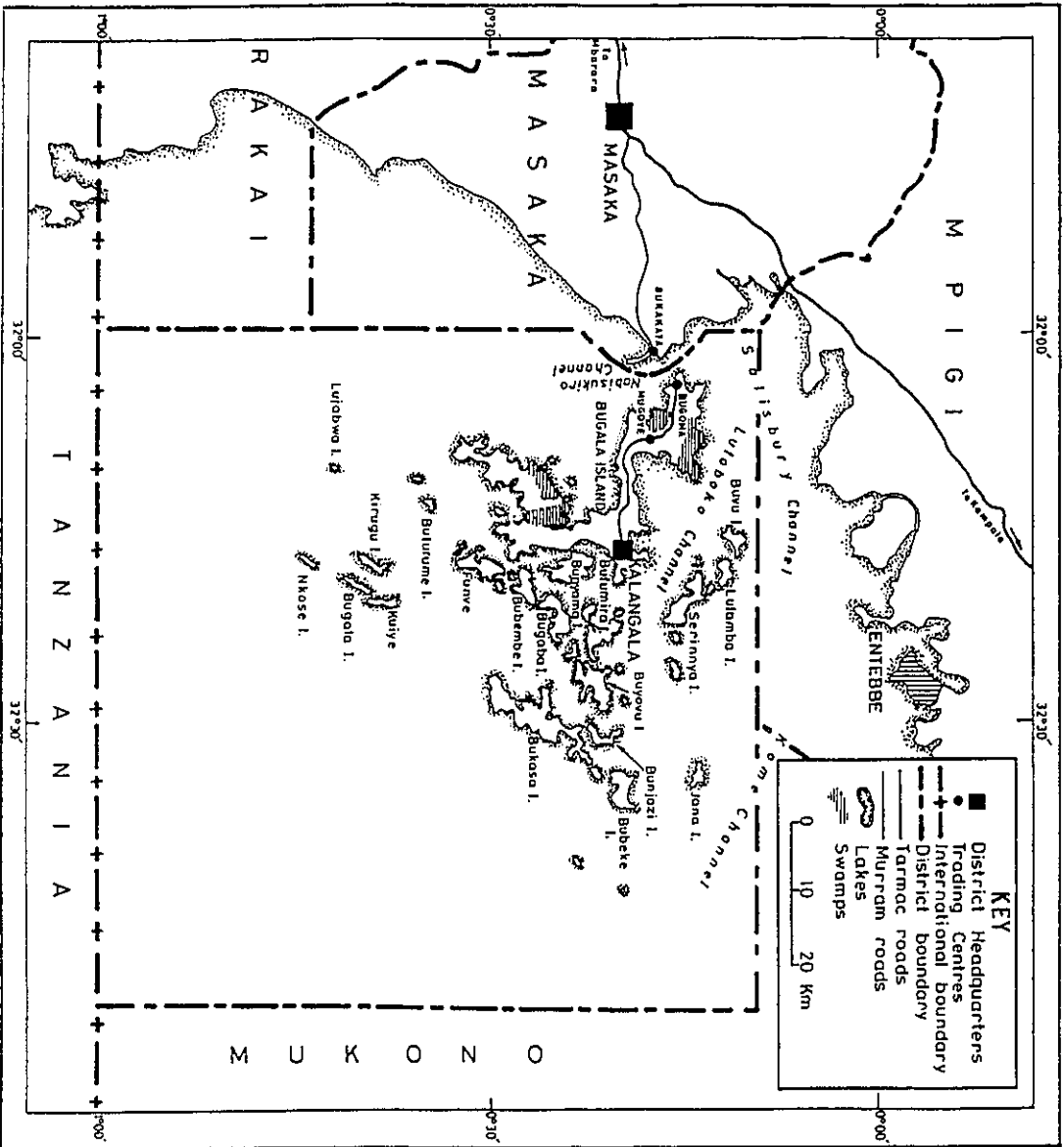
MAPS OF NINE OF THE DISTRICTS IN THE STUDY AREA: ADOPTED FROM THE UGANDA ATLAS, 1967, AND OTHER RELEVANT PUBLICATIONS AVAILABLE AT MAKERERE UNIVERSITY, DEPT. OF GEOGRAPHY.

The maps were drawn as a means to establish the association between human activities and the human use of space with respect to work, leisure, settlement and communication of the social, economic and political organizations of the regional space.

RAKAI DISTRICT



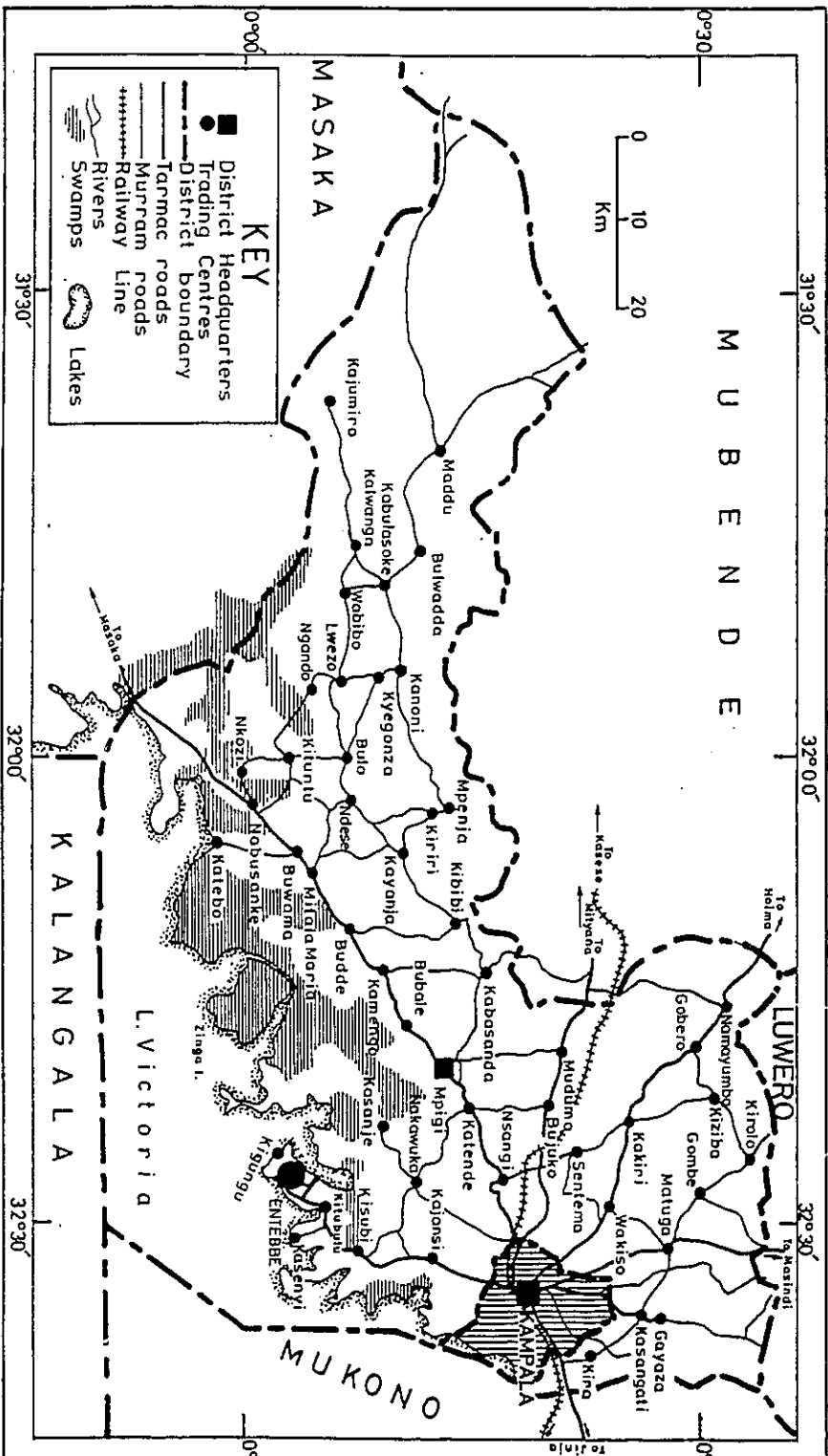
KALANGALA DISTRICT



MASAKA DISTRICT

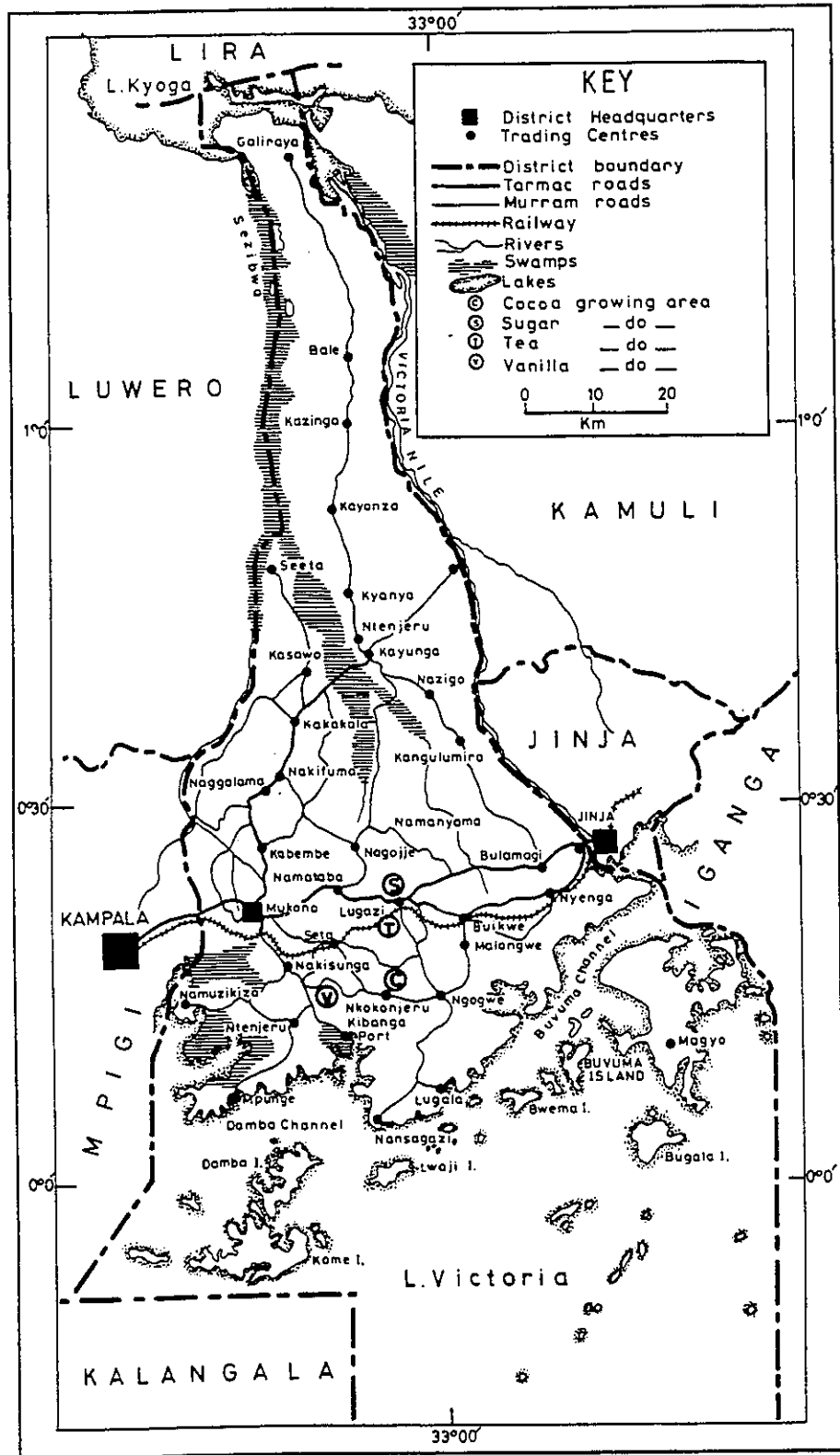


MPIGI DISTRICT

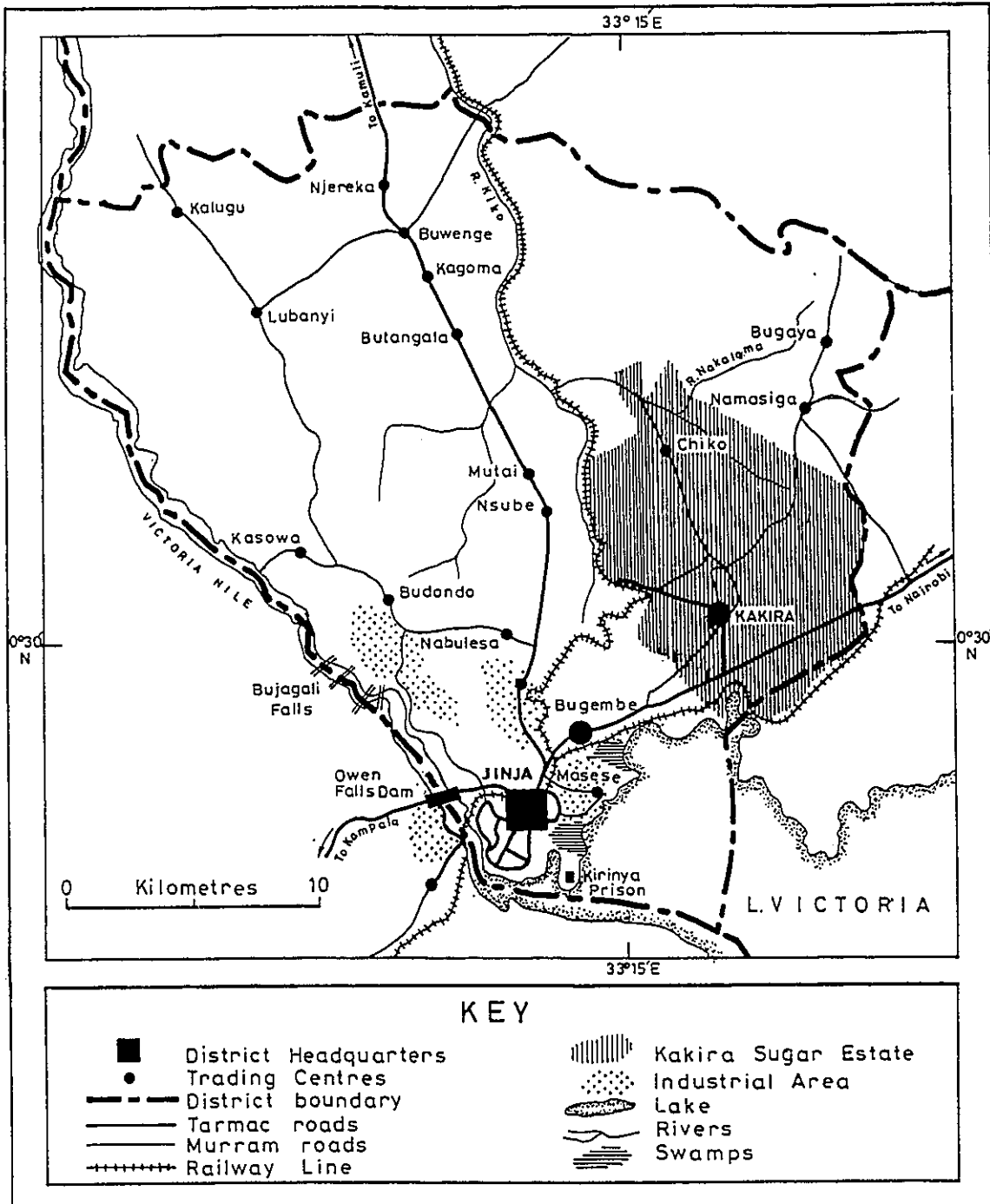


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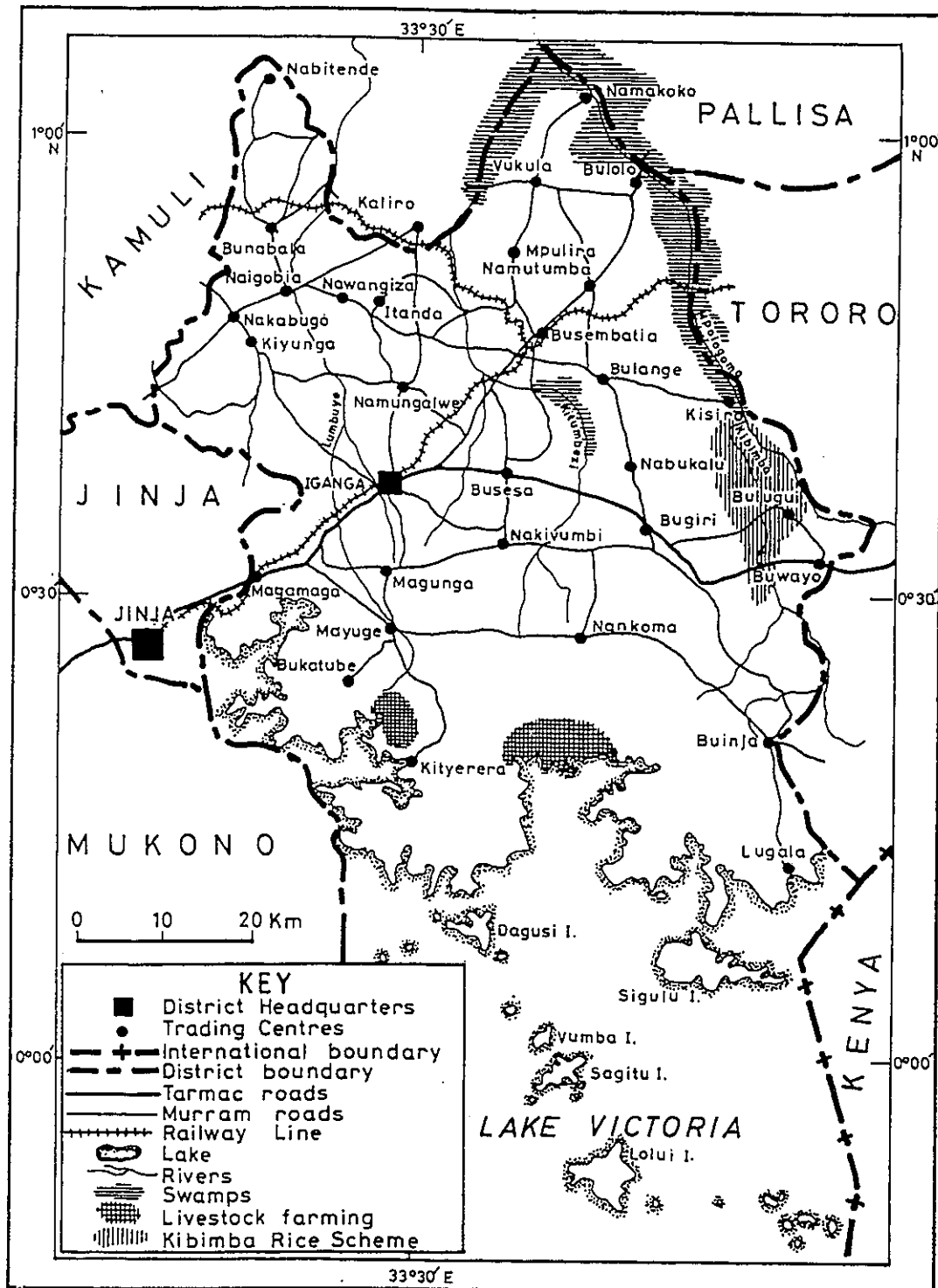
MUKONO DISTRICT



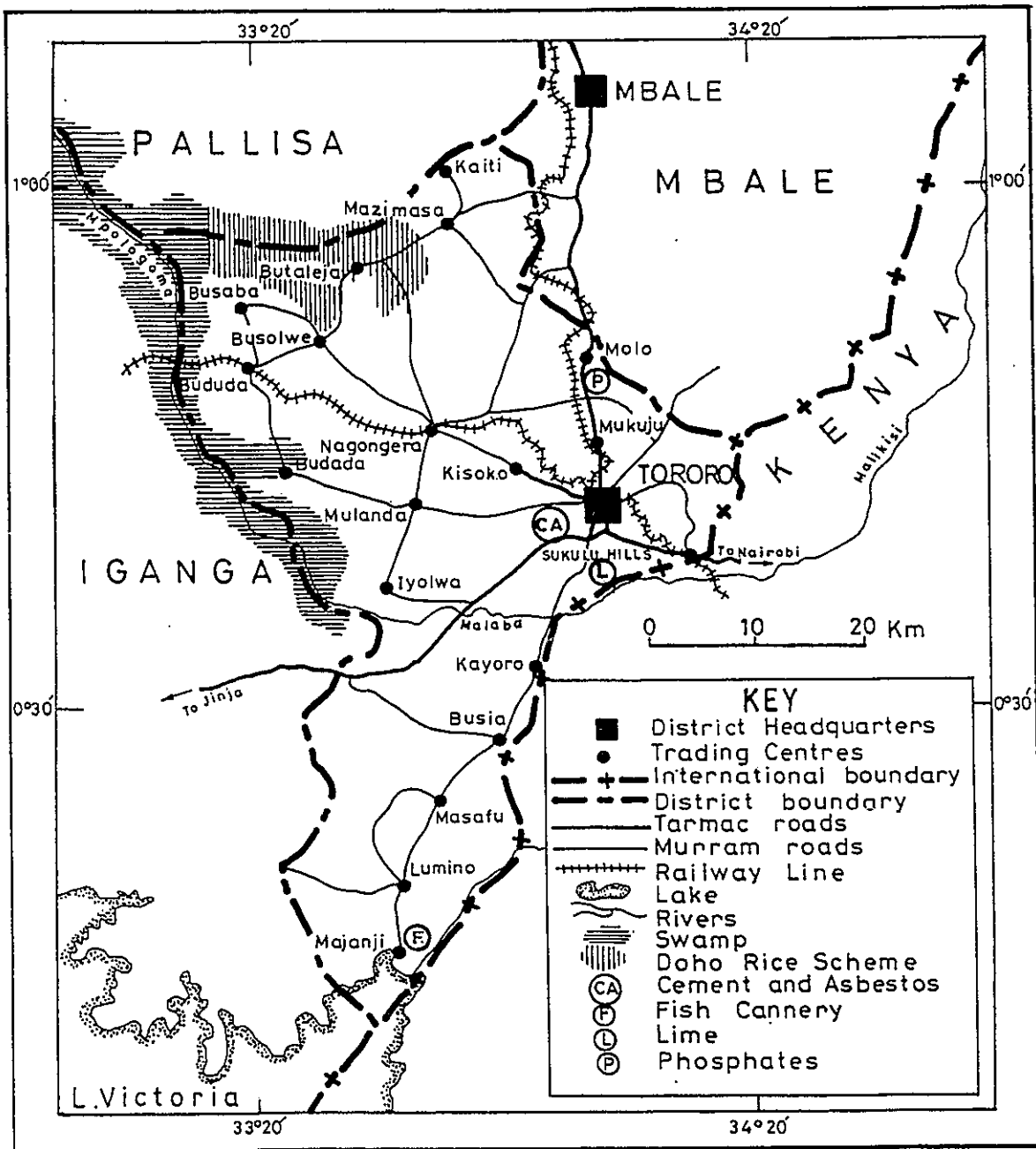
JINJA DISTRICT



IGANGA DISTRICT



TORORO DISTRICT



APPENDIX D

PROJECTS/PROGRAMS AS REPORTED IN THE MEDIA DURING EIGHT MONTHS OF FIELD WORK IN THE REGION

SOURCE:

1. PPM Weekly Topic offices, Plot 4 A Market Square, Shell House, plot 47/49, South Street, P.O. Box 1725, Kampala, Phone 231798/233834.
2. The New Vision, Printing and Publishing Corporation, P.O. Box 9815, Tel: 235209, Telex 22072, Kampala, Uganda.
3. Munno Publications Ltd., P.O. Box 4027, Tel: 245224/233571, Kampala, by Marianum Press, P.O. Box 11, KISUBI, Weekly Publication.
4. Development Digest, Quarterly Vol. 1, No. 2, July/Sept., 1991, Published by Integrated Development Consultants, 37/39 5th Street, P.O. Box 6595, Tel. 243365, Kampala, Uganda.

These were used as a source of information on ongoing and projected development initiatives (projects/programs) during eight months of field work in the study region.

ON-GOING AND PROPOSED PROJECTS/PROGRAMS AS REPORTED IN THE MEDIA

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
1	The Swedish Uganda Cooperation Project	Nationwide	Swedish International Development Authority - (SIDA)	To support health services & water service, imports and Cooperative Movement Societies	The New Vision, Feb. 25, 1991, p.16	US \$ 35m	5 years 1991-96
2	Third Power Project	Jinja Owen Falls Power Station, Jinja and Mukono Districts	IDA, African Dev. Fund, Norway, Sweden, IEIF, IDB, IDA, World Bank	To construct a new power house with new generation sets on the eastern side of the present dam. Increase supply from 180 mw to 350 mw by 2000. To construct a spillway using the same delivery canal.	The New Vision, Feb. 25, 1991, p. 19 Weekly Topic, March 15, 1991, p. 5	US \$ 260m	6 years 1992-98
3	Uganda rural community development	Kagadi, Hoima District	The Marquis Project of Manitoba, Canada	Development of Agro-forestry and sustainable agricultural practice in the district.	Weekly Topic, March 15, 1991, p. 5	CAN \$ 106,000	3 years 1990-1993
4	Masaka Recreation Ground Renovation	Masaka District-Masaka Municipal Council	Masaka Municipal Council	To complete the outer concrete enclosure and the perimeter fence of the area and other repairs on playing field. To repair the pavilion and provide better sitting facilities.	The New Vision, March 20, 1991 p. 11	Ug.* Shs 40m or \$40,000	2 years 1990-1993
5	Disc only: Computer Related Systems	Kawanda Research Station	FAD and Uganda Government	To facilitate the storage of information on agricultural research and other related data. To make the information accessible to International Information Systems for Agricultural Science and Technology Centre in Vienna	The New Vision, March 29, 1991, p. 12	Not stated	1 year 1991-1992
6	Kampala-Kasese Railway-line Rehabilitation	Kampala-Kasese	Italian Government	Improve rail transport between Kampala and Kasese, procure earth moving equipment and set up railway workshops.	Weekly Topic, March 29, 1991, p. 5 The New Vision, July 29, 1991, p. 16	US \$ 60 m	5 years
7	Canada-Uganda Assistance Programme	Nationwide	Canada (CIDA)	Provide assistance in the form of pharmaceuticals for animal and human use, and assistance through the World Bank of the purchase of petroleum commodities.	Weekly Topic, March 29, 1991, p. 11	CAN \$ 10M	3 years
8	Uganda Marys University	Namugongo (future site), NKOZI present site	The Catholic Church	To increase university education in the country.	The Citizen, April 3, 1991, pt. 1.	Not stated	Unspecified
9	Uganda Foods & Beverages Ltd./Con Agra Int. Contract	Kampala	Con Agra Int.	To supply 6000 tons of beans, Simsin and maize. Con Agra will then ship these to Mozambique. Bata Trade.	The New Vision, April 4, 1991, p. 9	US \$ 42m	2 years 1991-1993
10	Kakira Sugar Works Extension	Kakira Sugar Works Estates, Jinja District	Kakira Sugar Works Ltd.	To extend agricultural activities to outgrowers. To further develop areas surrounding the estate. To increase employment level. To improve existing infrastructure.	The New Vision, April 4, 1991, p. 10	US \$ 20.6	3 years 1991-1992

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
11	Exploration & development of oil on the shores of Lake Albert is the Western Rift Valley	The Western Rift Valley area	Petrofina of Belgium	To explore for oil as a future source of energy.	Weekly Topic, April 5, 1991, p. 5	Not stated	Unspecified
12	Economic Policy and Planning: An engineering course and a degree program in nursing and Women studies programme-Master degree	Makere University Kampala	UNDP, EEC, World Bank, Makerere University & the Government of Uganda	To improve economic policy analysis. Improve the mining industry and health services in the country.	Weekly Topic, March 29, 1991, p. 5	Not stated	Unspecified
13	Importation of Non-oil goods from Iran	Nationwide	Republic of Iran and the National Export Promotion Council	To lend money to importers payable in one year. To set up town cooperation committees to facilitate trade cooperation. To establish air link between Uganda & Iran. To establish trade between the two countries.	The New Vision, April 6, 1991, p. 7	US \$ 400M	4 years
14	Silk production program in Iganga and Bushenyi Districts	Bushenyi and Iganga Districts	Inunla Silk Estates Limited (ISEL)	To introduce the population to the rearing of silk-worms (SERICULTURE) To broaden export base of Uganda through rural agro-based industry.	The New Vision, April 6, 1991, p. 10	Ug. Sh* 300m & US \$ 700,000	Not stated
15	Research Institute for Food and Technology and Ceramics	Nakawa Kampala District	M/s Oriental Construction Company	Improve research in food technology and ceramics.	The New Vision, April 20, 1991, pgs. 1&16	US \$ 4.8m	2 years
16	Permanent exhibition in the National Museum	National Museum in Kampala, Kampala District	Franco-Uganda Palaeontological Team	To exhibit excavated fossils from Lake Albert in a new section of the National Museum that is to be devoted to the findings.	The New Vision, April 22, 1991.	Ug. Sh* 3.5m	2 years
17	Ssesse Referral Hospital	Ssesse Islands: Kalangala District	African-American Summit	To build a referral hospital to handle special cases. To facilitate African-Americans to get back to their motherland (Africa) by investing in Africa and to transfer to it Science and Technology	The New Vision, April 22, 1991.	Not stated	To be stated
18	Kampala City Solid Waste Disposal	Kampala District	The World Bank and Uganda Government	To purchase required equipment in solid waste disposal. To build a site for waste disposal. To rehabilitate the maintenance workshop.	The New Vision, April 24, 1991, p. 6	US \$ 5.29m	4 years
19	Revolving Fund for Teaching Materials	Nationwide	UNICEF	To develop and support a national network of trained health educators who will provide guidance to the Ministry of Health staff and contribute in district health education and mobilization.	The New Vision, April 26, 1991, p. 10	Not stated	5 years
20	Kasese-Kabala powerline extension	Western Uganda	EEC	Part of government policy to avail electricity to every part of the country by 1995.	Weekly Topic, April 27, 1991, p. 11	Not stated	1 Year 1991-92

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
21	Privatization of parastatals (Public Corporations)	Nationwide	Uganda Government	Government to withdraw from all commercial activities & its involvement to be scaled down to information & broadcasting, security & basic services and those whose existence call for large capital infusion in areas which the private sector investor may not wish to invest.	Weekly Topic, April 26, 1991, p. 11	Not stated	1 year 1992
22	Uganda-Iran Joint Venture	Jinja and Kampala (Jinja and Kampala Districts)	Iran and Uganda Governments	To expand Uganda Leather and Tanning Industry (ULATI). Locate the factory in Jinja so as to increase the value of hides and skins before export.	The New Vision, April 30, 1991, p. 14	US \$ 10 m	3 years
23	National Census of Agriculture and Livestock	Nationwide	FAO: UNDP and Uganda Government	To collect and interpret agricultural data for future planning in the agricultural sector in a country with last data taken in 1964.	The New Vision, April 30, 1991, p. 10	Not stated	1 year
24	Uganda National Chamber of Commerce & Industry Inf. & Documentation Services	Ministry of Industry & Commerce HQ Kampala	Uganda Manufacturers Association & United Nations Volunteer Service	To improve information and documentation services. To document all relevant information and computerize it and also keep records in the library. To develop relevant database	The New Vision, May 3, 1991.	Ug. Sh* 1.5m	2 years
25	Government Aided Schools' Grant Raise	Nationwide (602) schools	Uganda Government	To increase capitation grant to secondary schools by 40%. The Ministry has shifted the responsibility of feeding students to parents.	The New Vision, May 3, 1991, pgs. 1&16	Not stated	2 years
26	EEC Grant to Customs	Customs HQ Kampala	EEC	To computerize customs and foreign trade statistics for the PTA region. The project is to promote interregional trade and assist the PTA secretariat in its efforts to achieve integration and trade promotion within the PTA region.	The New Vision, May 4, 1991, p. 6	US \$ 9.2m	3 years
27	Karamoja Development Plan - (10 year Dev. plan)	Karamoja District	UNDP and Karamoja Dev. Agency	Provision of water, education and works as the priority.	The New Vision, May 4, 1991, pgs 1&16	US \$ 96m	10 years
28	Pasture Seed production	Nationwide	FAO, UNDP and World Food Program (FAO)	To initiate the beginnings of a well organized pasture seed production scheme where the major objectives is to provide a continuous source of improved pasture species to meet domestic requirements.	The New Vision, May 8, 1991, p. 6	Not stated	Not given
29	Policy on national forests and Savannah	National Forest areas Nationwide	The World Bank and Uganda Government	To set aside 50% of the natural forests and Savannah woodlands as nature reserves and buffer zones that will act as places of refuge for animals. This area will also be used for research. Planned felling will be allowed.	Weekly Mumbo, May 8, 1991, p. 4	Not stated	Unspecified
30	The living wage programme in the civil service	Nationwide	Uganda Government and the World Bank	To streamline social services provision, and improve efficiency in the civil service.	Weekly Mumbo, May 8, 1991, p. 4	Not stated	Unspecified

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
31	Economic Reform Agenda	Nationwide	Uganda Government, World Bank & Club of Paris	Reestablishing financial balance in Uganda, and promote a better economy.	Weekly Mumo, May 8, 1991, p.4	US \$ 850m	2 years 1991-1992
32	Senior Women Advisory Group, KCC Garbage Collection	Kampala Municipality	Kampala City Council and the World Bank	Collection of garbage & cleaning around Kampala to reduce environmental pollution. Set up cleanliness competitions around homes to improve residential environment and women's health. To produce biogas in order to reduce dependence on charcoal the burning of which has polluted the environment	The New Vision, May 10, 1991, p. 6	Not stated	Not given
33	Soroti Cashewnut Project	Soroti District	Food and Agriculture Organisation (FAO)	To increase income of about 800,000 families. To provide another means of foreign exchange earning.	The New Vision, May 13, 1991, p. 16	US \$ 200,000	1978-1991
34	Importation of Tallow for the Small scale soap Manufacturers	Nationwide	USAID	To facilitate manufacturers to pay for the tallow at the time of delivery. The scheme is expected to provide tallow at concessional prices.	The New Vision, May 14, 1991, p. 16	US \$ 10m	2 years
35	Lugogo Labour Vocational Training Institute Facelift	Lugogo in Kampala	The German government	To rehabilitate and reequip the institute. Germany to provide technical assistance in training	The New Vision, March 29, 1991, p. 12	US \$ 96,000	3 years
36	Mulago Hospital Rehabilitation	Kampala District	African Dev. Bank, Austria & Uganda Government	To rehabilitate the general structure of Mulago Hospital. To install new equipment needed in the hospital. To revive the vector control unit and to put in place a national quality lab.	Weekly Topic, May 17, 1991, p. 11	Ug. Shs 90 bn* or about \$90m	8 years 1986-1994
37	Kampala City Council Development Program	Kampala District	City Council of Kampala	To construct schools, a market and a taxi park. Also included are roads, staff houses, traffic and electrical installation, as well as the facelifting of Naguru Clinic and other (6) health centres in the municipality	Weekly Topic, May 17, 1991, p. 1	Ug. Shs 6 bn* or about \$5.6m	1 year 1992
38	Infrastructure development and rehabilitation	Nationwide	Islamic Dev. Bank, African Dev. Bank, le E.A. Dev. Bank, PTA Bank, OPEC & Saudi Arabia	To promote economic recovery; To increase production of rice and sugar; To increase production of mattresses and toothbrush; To improve transportation Improve import of petro-chemical imports and improve road making materials.	Weekly Topic, May 24, 1991	US \$ 140m	5 years

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
39	Seven Cities' Systems Project	Kampala Jinja Entebbe Mbarara Mbale Tororo Masaka & rural areas	World Bank	To supply piped water to Uganda's supply systems in seven major towns; To provide safe water to more inhabitants To rehabilitate existing sewage facilities, replace where necessary and expand in areas where required. To provide waste water stabilisation ponds to prevent water pollution.	The New Vision, May 24, 1991, pgs. 8-9	US \$ 194m	10 years
40	Masaka Diocese Tree Planting	Rakai Masaka and Kalangala Districts	MISERREOR - a German Organisation, and the German Government	To spread the gospel of tree planting. To raise living standards of the people in all aspects of life. To regrow the natural forest of Mpambiye. To educate the local rural farmers on economic practices based on modern agro-forestry techniques.	The New Vision, May 25, 1991, p. 4	Not given	8 years
41	Uganda Electricity Board Projects	Nationwide	EBC, Sweden, Switzerland and India	To rehabilitate the Old substation including Civil Works and to erect and Commission Interconnections with the new SCADA systems.	Weekly Topic, May 31, 1991, p. 1	US \$ 26m	4 years
42	Uganda Tourism Development Plan	Nationwide	Uganda Government	To revive the tourism industry in the private sector both domestic and foreign. To develop beach resorts on Ssesse Islands and other places on the shore of Lake Victoria. To develop specialized tours.	The New Vision, June 10, 1991, pgs 1&16	Not given	Not stated
43	Uganda Trypanosomiasis Block Treatment	Kabarole District	The British Government	To offer farmers a complete health services for their animals on a cash basis. To establish a revolving fund for the programme as a long term objectives.	The New Vision, June 12, 1991, p. 3	Not given	3 years
44	Entebbe Airport Rehabilitation	Entebbe: Mpigi District	Spanish Government	To work on airport terminal building; air navigation, the control tower, refrigeration and fire control services	The New Vision, June 12, 1991, p. 3	\$34m approx.	3 years
45	Sango Bay Allocation	Rakai District	Departed Asians Properties, Custodians Board	To allocate 50,000 acres of the original 160,000 acres of the Sango Bay estate to Uganda Progressive Farmers Association for Development	The New Vision, June 20, 1991, p. 1&16	Not given	Not stated
46	World Bank Project for Northern and North-eastern Uganda	Gulu, Lira, Apac, Kigwa, Kumi, Moyo, Arua, Pallisa, Nebbi, Soroti, and Masindi Districts	The World Bank and African Development Bank	Develop agriculture and training, health, telecommunications, transport, water supply, sanitation and road works. To rehabilitate 1700km of feeder roads. To rehabilitate urban roads. Assist 300 to 323 primary schools, provide furniture and teaching materials with the help of local people on a self-help basis.	The New Vision, July 3, 1991, p. 4	US \$ 73.4m	5 years

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
47	African Pest and Environmental Management Foundation	Regional Headquarters Kampala, Kampala District	German Government	Help in the process of improving knowledge, monitoring and managing environmental health and ecosystems' hazards in the East African region	The New Vision, July 3, 1991, p. 3	US\$ 50,000	Not stated
48	Uganda/German Financial and Technical Co-operation	Nationwide	German Technical Cooperation	Rehabilitation of infrastructure, roads, bridges, water supply and sewage system. To rehabilitate the southwestern transmission line. To assist in town planning project coordination	The New Vision, July 4, 1991, p. 1&16	US \$ 23M	2 Years
49	Rakai orphans Assistance project	Rakai District	World Vision International	To provide fees, clothing and scholastic materials to orphans and agricultural input skills and loans to rural families for 12,000 school going orphans and 2000 peasant families for three years.	The New Vision, July 5, 1991, p. 3	Not stated	8 years
50	Health Plan	Nationwide	World Bank Uganda Development	To establish health management Committee to manage cost-sharing and finance health services, Construct three district hospitals, a college for allied professionals. To increase efficiency and provide training.	Weekly Topic, July 5, 1991, p.8	Not stated	1 year 1991-92
51	Promotion of export of non-traditional crops i.e. beans and maize	Nationwide	Bank of Uganda & Islamic Dev. Bank	To diversify the export sector earning.	Weekly Topic July 5, 1991, p. 9	Not stated	Not given
52	Uganda first urban project	Kampala District	World Bank, IDA and GTZ - German technical cooperation	To finance the purchase of crops, raw materials and to meet other expenditures.	Weekly Topic July 5, 1991, p. 12	US \$ 39m	7 years 1987-1994
53	Friends of Street Children Association	Kampala District	Terranowa, Inter-Aid International	To build an informal education institution to help street children. The school is to expose the children to some basic education for their future.	The New Vision, July 15, 1991, p. 8	US \$ 162,000	Not mentioned
54	Kampala Roads Repair	Kampala District	EEC	To rehabilitate some of the city roads to improve city transport network	The New Vision, July 23, 1991, p. 9	Ug Sh* 1.8bn	0.5 Year
55	Rehabilitation of the Institute of Public administration	Kampala City Council, Kampala District	British Overseas Development Agency	To carry out repair work on the institute's building. To reroof senior staff quarters. Complete renovation of main building and repair of fence	The New Vision, July 26, 1991, p. 2	US \$ 2M	3 years
56	Mulago Hospital: Technology Rehabilitation	Kampala District	The French Government	To rehabilitate casualty department in Mulago. To provide equipment, ambulance and van paging system and general repairs. The aim is to deal with patients quickly with the best care possible.	The New Vision, July 27, 1991, pg.12 & July 5, 1991, p. 3	Not stated	Not specified
57	Food Technology Institute	Nakawa in Kampala District	The Chinese Government	To establish a Uganda Industrial Research Institute in Food Technology and ceramics.	The New Vision, July 27, 1991, p. 9	US \$ 7M	5 years

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
58	Formation of the project monitoring and Evaluation Unit in the former Ministry of Planning and Economic Development	Former Ministry of Planning & Economic Development HQ Kampala	The World Bank and Uganda Government	To keep projects under continuing government review; assist project management; identify and resolve implementation problems. To ensure that project progress and performance are at best economic and financial gains.	The New Vision, July 29, 1991, p. 16 and June 20, 1991, pg. 15/16	Not stated	Not given
59	Housing Scheme Namwongo	Kampala District	United Nations Development Programs (UNDP)	To upgrade Namwongo Slum Settlement	Development Digest Vol. 1, No. 2, July/Sept 1991	\$ 8.5 M	5 years
60	Operational Constraints Analysis Programme	Ministry of Planning and Economic Development Kampala	Government of Uganda, Export Policy Analysis and Development Unit (EPADU), USAID, African Development Bank (ADB), UNDP, and International Finance Corporation (IFC), plus 15 other donors	Provision of technical and managerial consultancy assistance to exporters of agricultural products other than coffee. Also covered are the horticultural and floricultural products, and processed goods based on local agricultural production.	The New Vision, August 3, 1991, p. 9	\$2M	2 years
61	Milk Processing Plant	Mbarara Town in Mbarara District	Government of Denmark	Construction of a milk processing plant in Mbarara	The New Vision, August 6, 1991, p. 17	Not specified	Not specified
62	AIDS Spread Control experiment	Kampala City, Kampala District	United States Agency for International Development (USAID) through the Experiment in International Living, a Vermont based organization	Control of AIDS spread in the country. Boost a private/public sector response to deal with problems as support of children orphaned by AIDS education in high-risk groups; develop further policies and programmes and help local NGOs expand testing and counselling services beyond Kampala	The New Vision, August 9, 1991, p. 17	\$12M	5 years
63	Austrian export Support Program	Central Purchasing Corporation Department, Kampala and the former Ministry of Planning and Economic Development	Government of Austria and Uganda Government	Supply Uganda with a consignment of buses, tractors and spare parts. Option these items to various sectors like agriculture, industry, transport and communication. Bank of Uganda will distribute the tractors to farmers through a line of credit.	The New Vision, August 13, 1991, p. 10	\$10M	4 years

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
64	National environmental action programme	Nationwide	United States Government	Assist private and public sectors to effectively manage the natural resource base in selected areas. Areas of assistance will include technical, conservation, training, rehabilitation and supply of commodities. Assist government to gazette two new national parks i.e. Bwindi and Rwenzori Mountains. A task team to be set up to analyze the constraints to sustainable natural resources utilization, and development of strategies and policies to eliminate these bottle necks. Finance health services, orphans and family activities; non-extraction export development, soap production and capacity building.	The New Vision, August 21, 1991, p. 16	\$30M other than these funds, \$46M realized	Not specified
65	Rehabilitation of Tourist Hotel	Nakasero, Kampala District	Pan African Insurance Company (U) Ltd. and Pan African Insurance (K) Co.Ltd. based in Kenya	Raise the hotel to a three star hotel with 50 rooms and a new management.	The New Vision, August 20, 1991, p. 16	\$65,000 U.S.\$'s 62M	4 months
66	Supply of cotton chemicals	Ministry of Agriculture, Animal Industry and Fisheries, Kampala	ICI Agro-Chemicals of Germany, North East Africa of Kenya, Nordox Industries of Norway, and Messrs James North	Supply 100,000 litres of cypermethrin (Ambush) 100,000 litres of chloro-pyrifas Dimethoate mixture; 20,000 litres of perfekthion 40 EC; 110,000 litres of Dielthametin; 40 metric tons of cuprous oxide and 20,000 pairs of gloves for use by cotton farmers.	The New Vision, August 27, 1991, p. 16	\$3.6M	2 years
67	Uganda Railways Ferry Terminal	Port Bell, Kampala	Danhoff through Danish International Development Agency (DANIDA)	Construct a 90 metre extension of the old Pier at Port Bell, linking it with a project to open Uganda's second route to the sea via Musoma, Serengeti National Park, Arusha, Moshi and Tanga in Tanzania. To connect the new pier with a 10km railway to Kampala's railway sheds to load and off-load. The old pier constructed in 1915 at an altitude of 3730 ft has to be modernized so as to implement the long standing Uganda's policy of multiple routes to the sea.	The New Vision, August 29, 1991, p. 17	\$16M	3 years
68	Kawala Housing Development Project	Rubaga Division, Kampala	Kampala City Council (KCC), Kawala, Abataka Committee and World Bank	Develop 1000 housing units in Kawala, in an African pattern, where all classes poor and rich, educated and uneducated, etc. will live together to avoid uncalled for family splits and other sectarian tendencies.	The New Vision, Sept. 6, 1991, p. 5	\$3.4M	Not specified

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
69	Vanilla Export Promotion Project	Mukono District, Near Lake Victoria	Natural Extracts International (NEI)	Facilitate Vanilla treatment before selling it to NEI; provide motorcycles and bicycles to ease transport problems; and provide a crusher and a freezer so as to upgrade the quality of treated vanilla for export.	Weekly Topic Sept. 8, 1991, p.8	\$18M	2 years
70	Nyimbwa Health Clinic Renovation Project	Nyimbwa Sub-country Luwero District	The World Bank, Uganda, Austria and Sweden	Refurbish Nyimbwa and other health clinics to promote social and economic infrastructure of the area.	The New Vision, Sept 6, 1991, p. 2	\$65.5M	4 years
71	Study of Ethanol Production	Sugar cane growing areas, Lugazi and Kakira	United States of America and Uganda Government through the Ministry of Energy, Minerals and Environment Protection	Uganda Government to select an American firm to study whether ethanol can be economically produced using excess molasses from local sugar refineries and blending it with motor fuel to reduce the need for imported oil. After a drop in foreign exchange earnings, from \$500 million to \$140 million, Uganda is working on a limited budget out of which about \$96 million is spent on the importation of petroleum products alone. The assistance would be utilized in the energy sector and for curbing environmental degradation.	The New Vision, Sept. 26, 1991, p. 10	\$240,000 N.B. \$58M had already been committed for the 1991 development assistance program	Not specified
72	Financing processing industries	Bank of Uganda, Kampala	World Bank and Government of Uganda	Assist individuals who would like to start processing industries by giving them loans.	The New Vision, Sept 20, 1991, p. 16	\$60M	Not specified
73	Privatization of veterinary services	Nationwide	World Bank and European Economic Community (EEC) via International Development Agency (IDA)	Provide working capital to private veterinarians and assist in the purchase of drugs, veterinary and transport equipment. This is part of a bigger project to include disease control, forage production, fly control and infrastructure adjustment.	The New Vision, Oct 1, 1991, p. 3	\$3.6M	Not specified
74	Special commonwealth African assistance plan	Nationwide	Indian Technical and Economic Cooperation, of the Government of India	Provide training to selected Ugandans in India. Provide the services of four medical doctors and surgeons to teach on the faculty of the University of Science and Technology, Mbarara.	The New Vision, Oct 2, 1991, p. 2	\$560,00	5 years
75	New lifts for Mulago hospital	Mulago Hospital, Kampala	OTIS (France) International, and Government of Uganda	Fit ten modern lifts at New Mulago Hospital and the adjacent Nurses Hotel. To overhaul and modernize hospital lifts.	The New Vision, Oct 3, 1991, p. 10	\$1.4M	1 year
76	Resurrection of Uganda Institute of Management	Uganda Institute of Management, Kampala	Government of Uganda, and United Nations Development Program	Assist Uganda to develop a high level managerial capacity; an internationally recognized management that can produce persons internationally recognized in management.	The New Vision, Oct 5, 1991, p. 16	\$1.44M	3 years

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
77	Butter and cheese plant	Liberty Dairy Business Centre, near Kanjansi a suburb of Kampala	Netherlands Finance company and Liberty Trading Company	Establish a butter and cheese processing plant, for the urban market of Kampala and Entebbe.	The New Vision, Oct 8, 1991, p. 16	\$250,000	Not specified
78	Rehabilitation of Uganda cooperative alliance	Northern Uganda	Swedish International Development Agency	Rehabilitation of marketing infrastructure and of stores for primary cooperation societies.	The New Vision, Oct 10, 1991, p.3	\$7.05M	3 years
79	Institute of Teacher education Kyambogo (ITEK) Sports Stadium	Institute of Teacher Education Kyambogo, Kampala	The Bible Society of Finland	Phase one: Improve sports facilities at ITEK; provide a main football ground, a modern track and field facilities for other events; and buy modern sports equipment for the Institute. Phase two: Construct a perimeter wall with spectators' halls and pavilion, a handball and tennis courts.	Weekly Topic Oct. 11, 1991, p. 23	\$7.05M	3 years
80	Mandela Sports Complex	Near Kireka, a suburb of Kampala	Chinese Government, and Government of Uganda	Construct an ultra-modern sports stadium complex with a sitting capacity of 60,000 people and equipped with football fields, athletic tracks, indoor games like swimming, tennis and hockey.	Weekly Topic Oct. 11, 1991, p. 23	\$91,000	3 years
81	Danida Assistance to Uganda Entrepreneurs	East African Development Bank, Kampala	Kingdom of Denmark through the Danish International Development Agency	Rehabilitation of industries; facilitate importation of raw materials, equipment and spare parts for agro-based industries particularly food processing and small-scale industries with linkages in agriculture.	The New Vision, Oct 24, 1991.	\$21M	Not specified
82	Loan Support Project	Ministry of Finance, Kampala	World Bank and Government of Uganda	Support Uganda's balance of payments; help alleviate short-falls in the foreign aid donations which in 1991 totaled about \$800 million annually and improve on the servicing of the country's \$2.6 billion debt as of August 1991.	The New Vision, Nov. 1, 1991, p.3	\$1.9M	1 year
83	Tree Planting project	Nationwide	United Nations Sudan Sahelian Office (UNSO), an extra-budgetary fund of the United Nations Development Programme	Start a tree planting project with a long-term aim of increasing genetically suitable seed and plant material from selected indigenous seed sources.	Weekly Topic November, 1991.	\$2.5M	3 years
84	Kimyara Sugar Works Project	Kuwait Fund, Opec Fund, Saudi Fund, USA, all through International Development Bank (IDB)	Kuwait Fund, Opec Fund, Saudi Fund, U.S.A., all through International Development Bank (IDB)	Rehabilitate Kimyara Sugar Estate so as to increase sugar production in the country and for export.	The New Vision, Nov. 28, 1991, p. 16	\$3.1M	5 years
85	Balance of payment support program	Former Ministry of Finance, Kampala	Netherlands Government	Assist Uganda in the area of balance of payments	The New Vision, Nov. 28, 1991, p. 16	\$50.74M	6 years

NO	PROJECT	LOCATION	SPONSOR	OBJECTIVE	SOURCE	COST	DURATION
86	Concessional loan programme and enterprise development project	Bank of Uganda and other government Cooperative Corporations	World Bank and Government of Uganda	Support the Structural Adjustment Programme (SAP) finance imports like raw materials, spare parts, machinery, chemicals, petroleum products and essential consumer goods; help industrialists and farmers increase production in the country. The money will be available to any viable enterprise, so that they become adequately capitalized to meet the challenge of export diversification and efficient import substitution activities.	The New Vision, Dec. 5, 1991, p.1&16	\$43M	4 years
87	National water works, national blood bank, Kawanda Research Centre; and Kampala Roads Rehabilitation	European Economic Community (EEC)	European Economic Community (EEC)	Civil and mechanical revamping of water works at Island near Gaba. Laying new pipes to major reservoirs in Muyenga, Mutungo, and Naguru. Re-enforce a new balancing water tank, boreholes and small supply systems for Namityango, Namalere, and Kigo to be done. Blood bank to ensure blood supply to 8 hospitals from 6 blood collection centres in the country.	The New Vision, Dec 7, 1991, p. 3	\$90M	Not specified
88	Christian Heritage University of East Africa	Ndejje, 36km north-east of Kampala	Church of Uganda	Provide practical graduates and good citizens.	The New Vision, Dec 7, 1991, p. 3	\$40M	3 years
89	Soft Loans Programme	World Bank and Government of Uganda through the Ministry of Finance	World Bank of and Government of Uganda through the Ministry of Finance	Support the Structural Adjustment Programme (SAP), and Industrial Enterprise Development (IED). This is part of the \$900 million package committed to Uganda since 1987. Only \$300 million has been released so far.	Weekly Topic December 13, 1991.	Not specified	Not specified

APPENDIX E

THE SURVEY QUESTIONNAIRE ADMINISTERED BY THE STUDENTS TO OBTAIN IMPRESSIONS ABOUT THE STATE OF THE ENVIRONMENT IN THE STUDY REGION.

The questionnaire was developed and carried out as a means to identify and assess the social, economic and ecological changes in the Lake Victoria Region of Uganda in the last thirty years. The results of the questionnaire provided a basis for describing the social, economic, spatial and ecological transformations occurring in the Region.

Question 1: Are there noticeable changes in the established population?

Increase		# of Respondents
Decrease		
No change		

Question 2: Are there any perceivable changes in the climate elements?

Rainfall Amounts		
Increase		# of Respondents
Decrease		
No Change		
Rainfall Predictability		
More Predictable		# of Respondents
Less Predictable		
No Change		
Seasonal Regularity		
More Regular		# of Respondents
Less Regular		
No change		
Temperature	DAY	NIGHT
Higher		
Lower		
No Change		
Rural Farm Work		
More Difficult		# of Respondents
Less Reliable		
Less Rewarding		

Question 3: Has the area under cultivation increased or decreased since the 1960s?

Increase		# of Respondents
Decrease		
No change		

Question 4: What is the observable livestock distribution?

	Cattle	Goats	Sheep	Pigs
Increase				
Decrease				
No change				

of Respondents

Question 5. Has the forest increased or decreased?

Increase	
Decrease	
Decrease Near Complete Elimination	
Illegal Encroachment into Forest	
No change	
Serious decline	

of Respondents

Question 6. What are the main types of water supply?

Types

Wells	
Lakes & Rivers	
Piped Water	

of Respondents

Availability/Person

Increase	
Decrease	
No change	

of Respondents

Seasonal variation

Variation	
No variation	
Negligible variation	

of Respondents

Water Quality

Increase	
Decrease	
No change	

of Respondents

Question 7: Is there a decline in the extent of the swampland area?

Increase	
Decrease	
No change	

of Respondents

Question 8: What is the main source of energy in your home area?

Firewood	
Charcoal	
Electricity	
Other	

of Respondents

Question 9: Is it easier/more difficult to obtain fuel?

Easier	
More difficult	
No Change	

of Respondents

Question 10: What is the average distance travelled to get firewood?

DISTRICT	1960S	1990S	% INCREASE	NO. OF RESPONDENTS
Rakai				
Kalangala				
Masaka				
Mpigi				
Mukono				
Iganga				
Tororo				
MEAN KM				

of Respondents

Question 11: Have the visible signs of soil erosion in your home area increased or decreased?

Increased	
Decreased	
No change	

of Respondents

Question 12: Has the extent of bare ground increased or decreased over the last thirty years?

Increase	
Decrease	
No change	

of Respondents

Question 13: Are large wild animals more or less abundant in your home area?

Increase	
Decrease	
No change	

of Respondents

Question 14: What has been the human impact on the Lake Victoria Region environment?

COMMENTS

APPENDIX F

SIGNS OF ECOLOGICAL DEGRADATION IN VARIOUS PARTS OF THE LAKE VICTORIA REGION OF UGANDA

These are intended to show how widespread ecological degradation is in the Lake Victoria Region of Uganda.



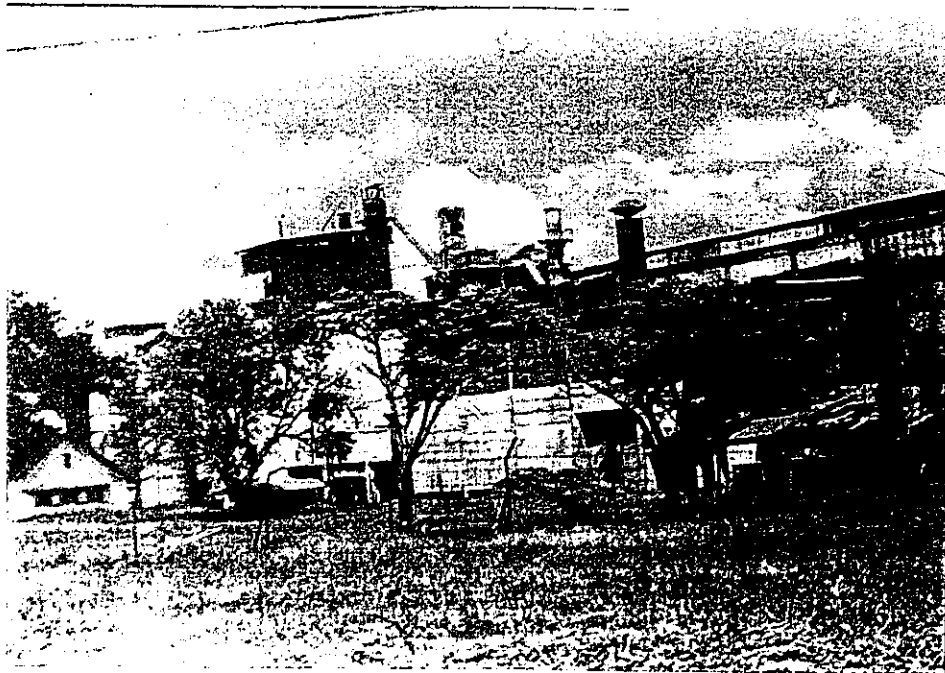
Brick making: a small scale industry located mainly in the wetland areas throughout the Region but mainly near the urban centres.



Burnt bricks for house construction. This is an industry that destructively invades the wetlands throughout the Region but mainly near the urban centres.



Nakulabye Market near Kampala, with garbage left in the open causing eco-degradation. A typical scene in all urban centres in the region.



Tororo Cement Works

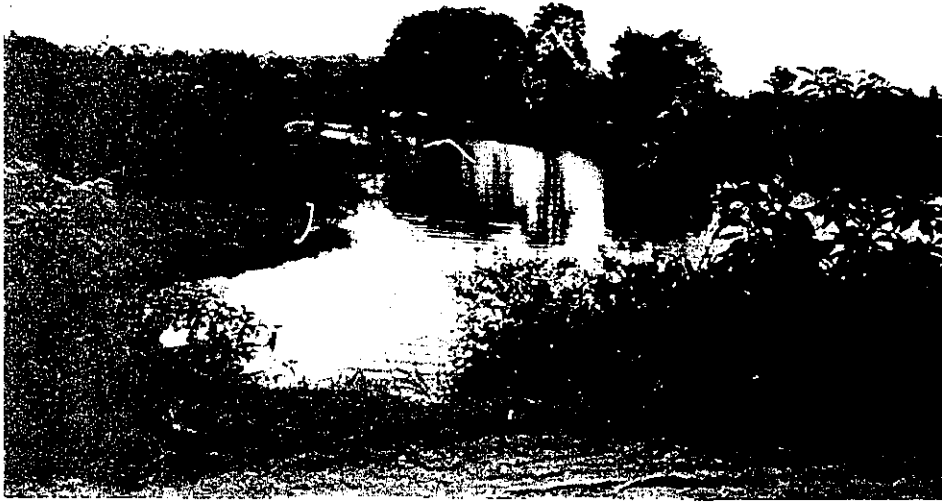
One of the industrial complexes in the Region with consequent air pollution from the factory.



Deforestation for charcoal making, a source of eco-degradation all over the Region, but mainly near the urban centres.



Deforestation for firewood near Kampala, a widespread source of eco-degradation throughout the Region but mostly near the urban centres.



This lake was made by one of Buganda's kings in the late 19th century. It is near Mengo, a suburb of Kampala.



The lake has over the years become polluted. Hence the signpost forbidding the public from swimming or fetching water from it.



Katanga, a slum settlement in Kampala, between Makerere University and Mulago Hospital.



Sewerage problems. A very widespread source of environmental pollution, as shown by this suburb of Kampala. This is a common sight in all the slum settlement parts of the urban centres, which make up about 65% of the main urban centres.

APPENDIX G

LIST OF CONTACTS FOR FIELD RESEARCH

1. Dr. Ben Aluma Adomati, Field Supervisor, Department of Geography, Makerere University, P.O. Box 7062, Kampala, Uganda.
2. Mr. J.C. Sebunya, Senior Cartographic Technician, Department of Geography, Makerere University, P.O. Box 7062, Kampala, Uganda.
3. Dr. Z. Nyira, a consultant with International Development Research Centre - IDRC - Regional Headquarters, Nairobi, Kenya.
4. Mr. Barugahare, Chief Town Planner, Kampala City Council, Kampala, Uganda.
5. Mr. Joachim Voss, International Development Research Centre - IDRC - Headquarters, Ottawa, Canada.

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