

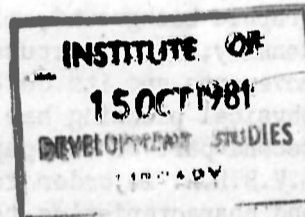
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POPULATION AND ITS IMPLICATIONS FOR RESOURCE DEVELOPMENT
IN THE LAKE VICTORIA BASIN

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ABSTRACT

The Lake Victoria Basin population cluster is the most distinctive and largest population region in the Kenya, smaller concentrations being found in central and coastal parts of the country. It is generally a densely settled area where rapid population growth and its inherent features pose considerable challenge to the relatively undeveloped resource base in the region. Despite its potentialities the lake basin has remained an economic back-water, thereby engendering out-migration to other more developed parts of the country.

With the recent proclamation of the Lake Victoria Basin Development Authority (L.V.B.D.A.) the importance of "water resource" has been underscored, and it is everybody's expectation that a workable framework will be instituted to foster carefully planned development in the "catchment area" of the lake basin. This paper examines the population factor in developing this and other closely related resources. First and foremost, the paper portrays the demographic background, placing special emphasis on population distribution and density; its structure in demographic and socio-economic terms; population movements and its determinants; and the urban hierarchy on which spatial physical planning has been modelled with little success in the region. In the second part of the paper, this demographic background is focussed on the L.V.B.D.A. in order to explore possibilities of regulating demographic trends and characteristics to suit planning and development within the framework of the L.V.B.D.A. In the final analysis, the paper contends that the population factor is most crucial, and that drastic changes are inevitable if the L.V.B.D.A. is or be seen, to effect development in the region. But micro-differences in the lake basin districts will necessitate their classification in an attempt to design their development against demographic - ecological realities.

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INTRODUCTION

Despite its diversified physical and human endowments the Lake Victoria Basin has for a long time remained an underdeveloped region in Kenya. The proclamation in December, 1978 by President Moi of the Lake Victoria Basin Development Authority (L.V.B.D.A.) naturally evoked political emotions among population in the region and ushered in an era of development planning whose complexity as well as significance demands careful analysis within the matrix of planned regional development. Besides, the proclamation was made at the most populous political rally in Kisumu, the demographic, commercial, industrial and, at one time, the administrative focus of Western Kenya. The proposed development programme brings into fruition an idea that has been mooted for many decades throughout the shaping of development in Kenya.

As a prelude to this paper it is necessary to mention a few cases where the idea has evolved and certainly ones that planners in the basin may have to investigate further. Fearn's analysis of the economic of the defunct Nyanza Province, which encompassed the present Nyanza and Western Provinces as well as Kericho district, echoed salient economic, social and demographic capacities of the

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Lake Victoria Basin.¹ Like many studies, it remained an academic exercise whose ramifications in rural transformation were completely ignored. In the context of regional development the region has been identified as transcending administrative, ethnic and inter-territorial boundaries.² Delimitation of the lake basin on the basis of various indices underscores its cohesiveness as a resource-planning region. This fact has been explicitly considered by a German scholar who studied the basic features of planning in the hinterland of Kisumu town.³ The demographic dimension of resource utilisation in the region has instigated investigative analysis by a wide spectrum of scholars with diverse disciplinary backgrounds.⁴ All these analyses overspill academic interests; they present invaluable information for comprehensive and integrated regional planning which is basically intended to foster regional development in the context of national needs as well as facilitating inter-territorial interdependence. Since independence, the Kenya government has therefore emphasized regional development programme alongside national development by gauging regional planning against specified realities in different parts of the country.⁵ A cursory look at the regional physical development plans for Nyanza, Western and Rift Valley provinces shows that they defy provincial boundaries and are demarcated on the basis of resource, ecological and other

considerations. Thus regional development must of necessity be flexible enough so as to adjust to changes, anticipated or accidental, that may be required.

This paper attempts a double-pronged exercise. On the one hand, it portrays the demographic background of the Lake Victoria Basin, placing greatest emphasis on demographic realities which regional planning and development of the area have to take cognizance of. On the other hand, it analyses certain demographic data that would have to be incorporated in this complex development programme. In both cases the cardinal point around which the paper pivots is the "water resource" whose uses and abuses may be instrumental in or detrimental to development of the Lake Victoria Basin. Given agricultural and industrial potentialities of the region water is, and will for a long remain, the basic resource and the driving force behind its development. Accordingly, the paper is structured to examine several closely interrelated points: delimitation of the Lake Victoria Basin Development Authority on the basis of different indices; the scope of the basin for regional development; the demographic background with special emphasis on population distribution and density, its demographic and socio-economic characteristics and implications of these for comprehensive regional planning cum development; and population data that have to be stocked periodically to be fed into the development model.

DELIMITATION OF THE LAKE VICTORIA BASIN DEVELOPMENT AUTHORITY

The Lake Victoria Basin includes the whole region in Western Kenya which focuses on Kisumu town by transportation and communication networks that connect the latter with its hinterland. It thus encompasses nine districts, namely, Kisumu, Siaya, Kisii and South Nyanza in Nyanza Province; Kakamega, Busia and Bungoma in Western Province; and Kericho and Nandi in Rift Valley Province. These nine administrative districts are inhabited by predominantly single ethnic groups: the Luo in Nyanza, the Luhya in Western and the Kalenjin in Rift Valley. Regional development will of necessity have to rectify sub-regional inequalities, while instituting projects that meet the taste of diverse socio-cultural entities in the area.

Drainage system delienates the boundaries of the Lake Victoria Basin. There are essentially two broad water catchment areas in the basin. To the north is the "Lake Victoria Catchment" drained by Nzoia and Yala rivers with their sources, courses and mouths traversing the three provincial boundaries. In the south is another catchment drained by Nyando, Sondu, Kuja and Mara rivers, also with the longitudinal profile covering the three neighbouring provinces. The drainage system, dependent upon heavy and reliable rainfall and featuring meanders, waterfalls and

rapids, augurs well for multiple uses of water in the region: for domestic, agricultural and industrial purposes. These rivers pour their waters into Lake Victoria, the largest fresh-water lake in the world, and therefore a most peculiar resource for regional, national and international broadly based development. Lake Victoria basin thus constitutes one of the most interesting and distinctive morphological macro-regions of East Africa. Most of the rivers draining the basin meander in broad shallow valleys but whose beds have now been re-excavated by a process of physiographic rejuvenation, thus creating gorges and waterfalls which would be harnessed into dams for domestic water consumption, irrigation, hydro-electricity and fishing for the whole region and beyond.⁶

Ecological zoning of Kenya shows that the basin is an immense ecological region with micro-biogeographical endowments heavily dependent upon water as the major resource. The economy of the region has evolved against the background of two broad ecological regions, namely, the Acacia-Combretum zone immediately occupying the lakeshores and the Kikuyu/Star Grass zone in the higher areas. There is no sharp and regular succession of ecological units in the lake basin, but the units reflect high agricultural potential with only relatively small areas being regarded

as marginal for agricultural purposes. Climatic regime, physiographic discrepancies and pedological conditions that determine ecology of the region are not easily differentiable either. Agricultural activity is therefore dependent upon ecological conditions that have made the region become the "granary" of Kenya for a long time. From the lake shore moving to higher and better-watered areas ecological succession comprises the Low Rainfall Lake Shore Savannah covering much of Kisumu, Siaya, South Nyanza and Busia districts; the High Rainfall Savannah Zone (Acacia Combretum Zone) already mentioned, lying between the former and the third zone, the Kikuyu/Star Grass Zone. The last two zones cover Kakamega, Bungoma, Kisii, Kericho and Nandi districts, predominance of biogeographical type being determined by micro-ecological conditions. Translated in agricultural activity the succession involves cultivation of cotton, sugar-cane, bananas, cereals (especially maize) and in the higher parts coffee, tea, pyrethrum and also livestock farming.

Resource base is modest but remains inadequately exploited. Before World War II there was modest mining activity concentrated around Kakamega town, Macalder in South Nyanza and isolated patches in Siaya district. This resource has so far been exhausted, but current geological

survey of the region is being intensified in an attempt to discover the resource. Forestry has been and today promises to remain a most dependable resource; forests in Kakamega and Bungoma districts as well as the process of re-afforestation in amiable areas give much scope for utilisation of hard and soft woods for a variety of products. Wild life meets stiff competition from different aspects of human activity including settlements, and thus has little promise in the future. Water therefore constitutes the most dependable and inexhaustible (provided due attention is given to the "hydrological cycle") resource in the lake basin. In the course of his speech in Kisumu, the President recognised the human resources of the Lake Victoria Basin, which he believed, as everybody elsewhere believes, is an asset to development of the region. Researches are also being carried out in the lake to orientate fishing to the distribution, migration as well as judicious exploitation of fish.

In demographic terms, the Lake Victoria Basin is a heavily settled region. Population distribution is generally influenced by rainfall distribution; relatively sparse along the lake shores where rainfall is low and erratic; moderate on higher parts of the plateau; and clustered in the highest areas with heavy rainfall throughout the year. Add to this, large chunks of the high,

fertile, rainiest areas have been alienated for commercial farming especially in tea and sugar plantations as well as mixed farming. Except for Nandi and Kericho districts the Lake Victoria Basin is an area of out-migration, whence population migrates into the two districts, commercial farming regions further afield and urban centres throughout the country. Urbanisation is still insignificant but, paradoxically, increasing rapidly; it is limited to administrative headquarters of all districts - Kisumu, Siaya, Homa Bay, Kisii, Kericho, Kapsabet, Kakamega and Bungoma. But market towns have proliferated in farming areas to serve their immediate hinterlands. It is these urban centres that occupy the highest order within the urban hierarchy, and that organise regional physical development at various echelons of the hierarchy.

From the foregoing, it is evident that the Lake Victoria Basin Development Authority rests on a broad premise that gives it firm foundation for a strong development edifice. Against this backdrop may be considered the role of Kisumu town on which the L.V.B.D.A. focuses. Available infrastructure in the town augurs well for regional development providing it is consistently expanded to meet the challenges that arise from the exponential nature of growth and development.

DEMOGRAPHIC BACKGROUND

Even before the World Population Conference held in Bucharest, Rumania in 1974, Kenya had consistently incorporated demographic information in her national development programme. It is one country which has perhaps the most explicit and straight-forward statement on the interplay of population and development.⁷ Demographic information necessary for development planning include population distribution and density; aspects of population structure, both demographic and socio-economic; and dynamics of population growth as well as change, with particular emphasis on regional spatial re-location of population. This background forms the basis on which demographic implication for regional development will be considered in the next section of the paper.

The Pattern of Population Distribution and Density

The Lake Victoria Basin constitutes the highest and most extensive population cluster in Kenya, two smaller concentrations being found in central and coastal Kenya. At the time of 1969 census it had a total population of 4.1 million distributed as shown in Table I. Nearly 40 percent of Kenya's population within scarcely less than two-fifths of the total area of the country live in the Lake Victoria Basin. Within the regional setting Nyanza

Table 1: Population Districts, Area and Density in the Lake Victoria Basin Districts, 1969

District	Total Population ('000)	Percent of Total Lake Basin	Percent of Total Kenya	Sex ratio (M:Fx 100)	Area in Sq.Km	Population density per sq. km.
NYANZA PROVINCE	2,122	51.3	19.4	97.4	12,525	169
Kisii	675	16.3	6.2	100.9	2,196	307
Kisumu	401	9.7	3.7	103.6	2,031	193
Siaya	383	9.3	3.5	94.3	2,534	151
South Nyanza	663	16.0	6.1	93.2	5,714	116
WESTERN PROVINCE	1,323	32.0	12.1	93.8	3,223	162
Bungoma	345	8.3	3.2	97.1	3,074	112
Busia	200	4.3	1.8	90.3	1,629	123
Kakamega	783	18.9	7.2	92.6	3,520	232
RIFT VALLEY PROVINCE*	688	16.7	6.3	106.4		37
Kericho	479	11.6	4.4	106.7	4,890	93
Nandi	209	5.1	1.9	104.5	2,745	76
LAKE BASIN	4,133	100.0	37.8	97.6	28,333	155
KENYA	10,943			100.4	569,249	

* In this context refers to Kericho and Nandi only. Figures for the province therefore relate to these districts.

Source: Republic of Kenya, 1969 Population Census, Vol. IV: Analytical Report. Central Bureau Statistics, Ministry of Finance and Planning, Nairobi.

Province accounts for the majority of population, but Kakamega is by far the most populous district. Both Kakamega and Kisii districts exhibit alarming rates of population density. However, district densities mask locational density differentials which crudely depict man-land ratio; for the two districts the highest densities exist in Kisa (393), Nyang'ori (450), Tiriki (506), East Bunyore (530), West Bunyore (532), South Maragoli (542) and North Maragoli (614) locations in Kakamega district; and also Majoge Chache (303), Majoge Borabu (32), Nyaribari Chache (331), Kitutu West (342), West Mugirango (367), Kitutu East (415) and Kitutu Central (472) locations in Kisii district. Lower densities, but generally above 100 per sq. km., are recorded in the rest of the districts. Rainfall distribution has a telling effect in the pattern of population distribution and densities, and the higher the rainfall the better is its reliability hence enhancing food production for sustenance of the population. These densities suggest that a few pockets of population pressure exist in the region while vigours of climate resulting in drought, famine or floods regulate population re-distribution, thereby intensifying out-migration. Some parts of the lake shores which were colonised by tse-tse fly many years back have remained virtually uninhabitable, a menace that has partly contributed to population nucleation around certain

habitable areas. Persistent flooding along river banks in the flood plains, the result of irregular climatic drama, has drastically affected population distribution, and aroused much debate pertaining to rational management of water resources. As argued later in the paper the Kano Plains and Bunyala in Busia district demand proper water management with due regard to other riparian users of the drainage networks. Over the last decade population density in these districts must have increased considerably, given consistent increase of population within conscripted administrative units. Population census planned for August-September this year is therefore eagerly awaited since it will give more up-to-date demographic statistics to be used in the L.V.B.D.A. and may also influence projectios that have been made on the basis of 1969 census.⁸

Urban-rural population distribution in the region explains the demographic share of the relatively more developed urban centres and the less developed rural areas. At the last census the lake basin had ten urban centres which among themselves shared a total population of about 72,000, barely 7.0 percent of the total urban population in the country. Kisumu town alone accounts for just over 3.0 percent of urban population in Kenya and 48 percent in the lake basin alone. Consistently high sex ratios for all

Table II. Distribution of urban population and sex ratio in
Lake Victoria Basin, 1969

Urban centre	Total Population	Percent of Lake Basin Urban population	Percent of National Urban population	Sex ratio (M:Fx100)
Kisumu	32,431	44.7	3.0	126.3
Kericho	10,144	14.0	0.9	140.8
Kakamega	6,244	8.6	0.6	129.9
Kisii	6,080	8.4	0.6	150.6
Bungoma	4,401	6.1	0.4	127.8
Homa Bay	3,252	4.5	0.3	133.8
Londiani	2,994	4.1	0.3	103.5
Kipkelion (Lumbwa)	2,577	3.6	0.2	116.7
Kapsabet	2,298	3.2	0.2	121.2
Migori	2,066	2.8	0.2	141.4
LAKE BASIN	72,487	100.0	6.7	

urban centres demonstrates masculinity which is an important demographic feature of urban centres, the major net in-migration areas in the internal migration process. This feature contrasts sharply with that of out-migration rural areas which, as Table I

reveals, have low sex ratios, evidence of preponderance of female population. As a result of this process of population re-location, rural economy has stagnated in the hands of female labour force who generally perpetuate longstanding traditional forms of economy and remain least receptive to innovations that could modernise the economy.

The pattern of population distribution and density has important implications for development planning in the Lake Victoria Basin. Among other things, it stands to influence the distribution of water and other resources in quantities commensurate with population densities and distributional characteristics. Considered in the context of population - land use interrelationships, these two indices of spatial settlement are crucial in formulating development policy in accordance with demographic realities. The L.V.B.D.A. will also have to broaden the infrastructural base of the ten urban centres and other industrial nodes in the sugar-belts including Webuye, in order to meet the challenges posed by expansion of agro-industrial activities in the region.

Aspects of Population Structure.

Central to development planning are several demographic and socio-economic aspects of population structure. These include demographic traits, such as ethnic or tribal

origin, age - sex structure; and socio-economic characteristics, namely, marital pattern and status, educational attainment and economic participation rates which directly influence and are in turn influenced by trends in planning and development.

The Lake Victoria basin is a predominantly African reserve where the non-African population are found concentrated in urban centres as well as the "Scheduled Areas" of commercial farming. Table III shows the ethnic structure of African population in the region. Although these figures relate to tribal groups enumerated throughout the country, they do not, in the final analysis, differ significantly from de jure population. This is attributed to the fact that despite their migratory behaviour, population originating from the lake region are known to regard it as their "usual place of residence" hence the need to plan the region with this trait in mind. The Luo and the Luhya are by far the majority and incidentally those who have the highest propensity to out-migrate, ultimately returning to settle in their rural homes. Other tribal groups are relatively sedentary but have recently shown a tendency to out-migrate; a notable case in point are the Kisii whose area of settlement has begun to experience population pressure. Both the Luo and Luhya

groups occupy areas most susceptible to adverse effects of drainage system along the lake shores, and, have consequently to adjust readily to several environmental problems. These and other areal and ethnic discrepancies have much bearing on regional planning in the lake basin. Recent influx of other tribal groups as well as non-African population in the region has augmented population size, now close to 8 million.

Table III Ethnic Structure, and Change and Growth of African Population in Lake Victoria Basin, 1962 - 1969

Tribal Group	1962		1969		Percent change
	Population	Percent	Population	Percent	
Luo	1,148,335	33.5	1,521,595	33.1	32.5
Luhya	1,086,409	31.7	1,453,302	31.6	33.8
Kisii	538,343	15.7	701,679	15.3	30.3
Kipsigis	341,771	10.0	471,459	10.2	37.9
Nandi	170,085	5.0	261,969	5.7	54.0
Teso	72,357	2.1	85,800	1.9	18.6
Kuria	41,885	1.2	59,875	1.3	43.0
Sabaot	28,012	0.8	42,468	0.9	51.6
TOTAL	3,427,197	100.0	4,598,147	100.0	

Source: 1969 Population Census, Vol. IV: Analytical Report, p. 22.

Age-structure has far-reaching implications for planning because planning has to cater for various "phases of life" and "tastes of the population" at different phases. The three important age-grackets consist of children (0-14 years), working-age population or the labour force (15-59) and old-age population (60 or more years). However, Table IV gives age-bracket categories that almost reflect consumptive cum productive capacities of population. These age-brackets are thus formulated to relate them to the current emphasis on education designed to produce highly skilled manpower who would be competent for designing, implementing and appraising development programmes in the light of demographic as well as socio-economic realities in the region, and within the wider perspective of national and international development. Since 50.0 percent of the population are children of primary school (17.6) and secondary school up to university education a total of about 68.0 percent ages, they do not participate in the development of the lake basin economy; they are consumers who depend heavily on a much smaller proportion of economically active population, aged 25-49 years (22.5 percent). Those aged above 50 years are mostly population in the process of retirement and therefore pre-occupied with matters associated with old-aged security as well as that of children on whom they have spent their life-long savings and investments. Dependency ratio has telling implications

Table V. Functional Aged-Bracket Categories and Dependency
Ratio of Population in Lake Victoria Basin

	Age-bracket category (in years)				Dependency
	0-14	15-24	25-49	50 and over	Ratio (pop. 15-64 / pop. 15-59)
NYANZA PROVINCE	<u>49.9</u>	<u>18.0</u>	<u>22.8</u>	<u>9.3</u>	<u>120.4</u>
Kisii	55.4	18.2	19.7	6.7	143.8
Kisumu	45.3	19.5	25.6	9.6	99.1
Siaya	47.5	15.8	23.4	13.3	119 .7
South Nyanza	48.4	18.2	24.0	9.4	113 .8
WESTERN PROVINCE	<u>52.3</u>	<u>17.4</u>	<u>20.4</u>	<u>9.9</u>	<u>136 .5</u>
Bungoma	52.8	18.6	20.4	8.2	134 .1
Busia	49.8	15.7	23.6	10.9	125 .1
Kakamega	52.7	16.0	19.6	10.4	140 .66
RIFT VALLEY PROVINCE	<u>47.7</u>	<u>18.5</u>	<u>24.6</u>	<u>9.2</u>	
Kericho	51.1	19.2	21.8	7.9	124.8
Nandi	46.8	17.3	24.2	11.6	115.8
LAKE BASIN*	50.0	17.6	22.5	9.8	124.1

*Average of the nine districts.

for development of the region: Four districts experience dependency ratios below and five others have ratios above the average for the lake basin. In general, there is heavy dependency ratio which underlines the momentum of the population problem, engendered among other things, by the burden of consumers shouldered by a thin base of labour force, a sizeable proportion of whom have no formal employment either.

High educational attainment characteristic of the Lake Victoria Basin districts has generally had adverse effects on its development. Moreover, it seems to be an "inertia" of many decades past since contemporary trends show the region as lagging behind the more privileged areas such as Central Province, at least over the last fifteen years. Table V reveals educational attainment of the de facto population as reported in the last census. Considered against the national picture, regional levels of educational attainment in the table tend to be higher than the national average. The dichotomy between Nyanza, Western Provinces and Rift Valley Provinces is evident especially at the lowest levels and in "none/not stated" categories. Preponderance of the last category is a menace to development planning because the majority of population will have to be made functional literates if they have to

Table V. Educational Attainment by specified levels of population in Lake Victoria Basin, 1969

District	Educational level reached (percent)				
	None or Not stated	Primary Stds 1-4	Secondary Stds 5-8	Secondary Forms 1-1V	Form V
NYANZA PROVINCE	<u>75.1</u>	<u>12.5</u>	<u>10.5</u>	<u>1.8</u>	<u>0.2</u>
Kisii	74.9	13.1	10.2	1.7	0.2
Kisumu	71.7	13.0	12.3	2.7	0.3
Siaya	77.2	12.3	9.1	1.3	0.1
South Nyanza	76.1	11.6	10.5	1.7	0.1
WESTERN PROVINCE	<u>68.9</u>	<u>16.6</u>	<u>12.3</u>	<u>2.1</u>	<u>0.2</u>
Bungoma	64.7	17.4	15.1	2.6	0.2
Busia	76.0	12.8	15.1	1.6	0.2
Kakamega	69.0	17.2	11.7	1.9	0.2
RIFTY VALLEY PROVINCE	<u>78.6</u>	<u>10.8</u>	<u>8.8</u>	<u>1.6</u>	<u>0.2</u>
Kericho	75.2	12.3	10.7	1.6	0.2
Nandi	73.5	12.0	8.5	0.9	0.1

keep abreast of and adjust readily to development programme envisaged in the region. Besides, the tendency for highly educated population to migrate outside the lake basin demonstrates that investment in education and subsequently manpower is wasted because that manpower benefits other regions of the country. A policy will have to be devised for making this massive human resource benefit the region that has nurtured, nourished and enhanced its skills; and one wonders whether a complex development programme of the calibre of the L.V.B.D.A. would not deploy its local natural and human resources for development challenges that it has to face up to.

Population Growth and Re-distribution

Kenya's rate of population growth has become the centre of interest and the focus of attention of a broad spectrum of people and institutions involved in the demographic dimension of development planning. Since World War II it has been galloping consistently from just about 3.0 percent in the 1940's and 1950's to 3.3 percent in the intercensal period 1962-1969 and since 1975 to 3.5 percent and more. This increasing trend may be attributed to availability and improvements in analysis of demographic data. But it must also be seen in the context of an amalgam of factors that influence demographic trends:

scientific and technological advances which have improved individual as well as public health and environmental sanitation, the ever widening gap between fertility and mortality, especially during Kenya's stage of demographic transition, which increases growth rates; consistently increasing life expectancy, now nearing 50 years for males and over 50 years for females. Above all, it must be seen in the context of the demographic profile it has created at present, not least the future profile that will be influenced by current attempts to regulate the demographic upsurge. Meaningful demographic accounting in Kenya has been formalised only in the post-war period. Except for Siaya and Busia all districts in the lake basin record growth rates generally above the national average. Yet this is a densely region whose boundaries are conscripted by certain physical barriers as well as human activity which tend to intensify population resource imbalance. Imagine the stagnating lake region economy whose development has yet to "take off", "mature" while sustaining the rapidly increasing population. In specific terms, imagine a situation in which 8.8 million (low projection) or 9.2 million (high projection) people live before most developments within the framework of the L.B.B.D.A. are articulated during the next decade or so. Increase of population is due to the three dynamics of population change,

Table VI. Population growth and projections for Lake Victoria Basin.

District	Population Totals ^a		Average annual rate of increase (per cent) ^b	Projected Low projection	population 1989 ^c High projection
	1962	1969			
Kisii	526,100	672,000	4.8	1,388,000	1,356,000
Kisumu	301,800	398,200	4.0	863,000	842,000
Siaya	325,600	383,700	2.4	768,000	751,000
South Nyan a	481,600	661,900	4.6	1,418,000	1,386,000
Bungoma	241,900	350,000	6.4	799,000	833,000
Busia	172,400	203,000	2.4	398,000	415,000
Kakamega	600,200	782,200	3.8	1,696,000	1,767,000
Kericho	391,200	479,100	2.8	1,036,000	1,313,000
Nandi	119,100	209,000	5.6*	398,000	504,000

* This figure is inflated by confusion in identifying the Kalenjin group, boundary changes, etc.

Source: a, b Republic of Kenya. Nyanza, Western and Rift Valley Provinces Regional Physical Development Plans (Town Planning Department, Ministry of Lands and Settlement, Nairobi, 1970).

^c
Population profiles of the districts of Kenya

(Population Studies and Research Institute, University of Nairobi, 1979)

Note: Figures have been rounded to avoid cumbersomeness.

namely, fertility mortality and migration. In a region such as the lake basin where out-migration is the rule rather than the exception of population change, the effect of migration in fact reduces the rate of population growth which would otherwise be higher. Crude measures of fertility and mortality (birth rates and death rates) give the whole region a natural increase of 3.2 percent per annum. But the widening gap between fertility and mortality suggests that the rate of population growth will not be regulated markedly until perhaps the middle of the next century. Table VI summarises total fertility in the region.

Table VI. Total Fertility in Lake Victoria Basin, 1959

District	Total Fertility (sum of A.S.F. rates)	Deviation from	
		Lake Victoria average	National Average
Kisii	7.27	+0.63	+0.67
Kisumu	5.61	-1.03	-0.99
Siaya	5.98	-0.66	-0.62
South Nyanza	5.75	-0.89	-0.85
Bungoma	8.18	+1.54	+1.58
Busia	6.53	-0.11	-0.07
Kakamega	8.12	+1.48	+1.23
Kericho	6.00	-0.64	-0.64
Nandi	6.34	-0.30	-0.26
LAKE BASIN	6.64		

National average = 6.60

...../25

Note: Figures have been rounded to avoid cumbersome.

Both Kakamega and Kisii districts emerge as areas of high total fertility. As has been seen in an earlier section of the paper the two most densely populated parts of the lake basin have the best prospects for increased growth rates thereby aggravating the problem of population pressure which has started to show its ugly faces. On the whole, the lake basin is a region of rapid population growth, albeit much out-migration it experiences.

Large-scale migration has re-distributed the lake basin population in different regions of the country. Cross-tabulation of "birthplace" and "usual residence" underlines this re-distributive characteristic. Take Nyanza and Western Provinces which are net out-migration areas. Of population reporting their birthplace in Nyanza, by 1969 14.0 percent were resident in Nairobi, 4.7 percent in Central Province, 11.6 percent in Coast Province, 5.8 in Eastern Province, 2.3 in North Eastern Province, 18.5 percent in Rift Valley Province and 15.5 percent in Western Province. The corresponding proportions for population born in Western Province were: Nairobi (14.2), Central (3.5), Coast (6.2), Eastern (4.3), North Eastern (2.1), Nyanza (13.2) and Rift Valley (2.1). In planning-resource terms, the lake basin is an "downward transitional" region losing population to the "upward transitional" and "core"

regions in rural economic islands and urban centres respectively.⁹ Migration of population is therefore seen as a blessing in disguise; it alleviates the burden that would be experienced if population were sedentary. Available data on migration are imperative for planners who will be involved in the region's transformation; they rationalise needs and areas of emphasis in the planning process.¹⁰

The demographic portrait of the lake basin just given may appear irrelevant for purposes of the Lake Victoria Basin Development authority. But without it we may make irrational appraisal of the demographic dimension of regional development. In the rest of the paper, attention is focussed on relating the demographic background to the design, strategies, programme implementation as well as evaluation of the L.V.B.D.A. Success of the project will have to depend not only on perceptions of expert planners, policy and decision makers; it will also depend on perceptions of the planned at the individual and community levels and in totality of the whole region's development requirements.

FOCUSING DEMOGRAPHIC ISSUES ON THE L.V.B.D.A

It must be emphasized at the outset that the L.V.B.D.A. has to be autonomous to mount a workable machinery for planning development of the region. This autonomy

presupposes harnessing diversified expertise on aspects of development that are envisaged to constitute a broadly based, self-servicing and consultancy oriented Authority. Thus the working documents for the L.V.B.D.A should be ambivalent, giving background information against which development of the basin will evolve and using that information as a basis for mapping out a pragmatic approach to the development process. Experience in many countries has shown that there are certain demographic traits that feature prominently in development planning. A study of 70 national development plans covering the five-year period. 1965-1972 has revealed that only 27 of them recognised population problems as distributed in Table VII.¹¹

It is not the frequency distribution of the co-variables as seen by the researcher that is important; but perhaps their ranking as perceived by population who have to benefit from what is planned. The menu could be longer, but even as it is, it places the demographic factor in the proper perspective of development planning; its structure is most instructive for the L.V.B.D.A within whose framework we now wish to consider it.

Table VII. Population problems recognised in Development Plans, 1965-1972

Type of population problem	Total number of countries (N 70)
Economic growth reduced by population growth	19
High rate of population growth (in and of itself)	18
Unemployment	18
Increasing school-age population	16
High dependency ratio	16
Population pressure on health services	15
Population pressure on social services	12
Population pressure on housing	12
Population pressure on agricultural system	5
Decrease in individual standard of living	4
Population density	3

Source: Maxwell Stamer, "Population policy in development planning", Reports on Population/Family Planning, No. 13 (May 1973), p.5

A Demographic Unit of the L.V.B.D.A

Usually, planners have recognised the fact that planning is for and of population. But it is the central thesis of this paper that planning is basically with the population

who must be and themselves feel to be involved in all the stages. A planning institution must of necessity develop a workable structure that would facilitate mutual exchange of ideas as well as of articulating needs between the planner and the planned. One would therefore like to see the L.V.B.D.A as an autonomous umbrella organisation consisting of diversified but well co-ordinated units each dealing specifically with different issues: demographic surveys, land and resource utilisation, medical and public health obligations, economic and commercial interests, agro-industrial activity, socio-cultural norms and values, legal and fiscal matters, to identify a few areas of concern.

The demographic unit would be the chief source of collecting, analysing, publishing, disseminating and evaluating demographic data such as those shown in Table VII. Structurally, it would consist of a director and his assistants manning specialised sub-units and themselves specialised in different fields of demography; and a team of field assistants whose main task would be to collect primary data regularly or as and when directed by the unit. The director would be advised by an advisory council answerable to the chief executive of the L.V.B.D.A through the director of the unit. In order to function efficiently the unit may have to depend heavily on the Population Studies

and Research Institute in the University of Nairobi whose training programmes could intimately serve the interest of the L.V.B.D.A and whose staff may carry out independent studies to inject external evaluation into the demographic unit. Within its short existence the Institute has demonstrated its scope for such an exercise.¹² Thus the autonomous stance of the L.V.B.D.A would be reflected on such regional needs as expressed by the population and/or as discovered by all component units in their researches. In development planning it may not be true that "we are attempting to satisfy the needs of people by the services and efforts of other people".¹³ As has been mentioned above, the people's own involvement in planning has much to commend it, especially in regional planning where individual, community and regional means of re-distributing development and correcting intra-regional inequalities would be to use the pattern of population distribution and density as an index of the whole exercise.

Demographic Accounting in the Lake Basin

The most fundamental requirement for demographically orientated planning is the demographic profile as explained in the first part of this paper. This calls for a viable data storage, usually through censuses, sample surveys and vital registration which yield data on a wide range of demographic phenomena. The demographic unit of the L.V.B.D.A. would be well placed to mount periodic canvassing of the total population or conducting surveys on its particular characteristics

as demanded by planning needs. Chances are that regionally based demographic accounting is likely to be more successful and therefore to yield better data than nationally spread exercises which conceal significant regional disparities and hardly unveil peculiarities. Adequate investigation would have to be made on attitudes of the population to the processes of data collection in order to discover inherent problems besides impressing upon them to appreciate its very purpose in the context of development.

Secondary sources of data would also have to be encouraged from administrative records which have remained routine reports hitherto. Administrators themselves, in the lake basin administrative units, will also have to be exposed to the importance of demographic data. Only this way can their support be ensured in a programme where their involvement is most crucial.

Re-organisation of Settlement Pattern in the Lake Basin

Micro-ecological regions in the lake basin and their inherent features as well as problems will necessarily require re-organising the settlement pattern of the population. In the drier lowlands along the lakeshores low and erratic rainfall has created the problem of lack of clean water for domestic as well as livestock uses. Attempts to reticulate piped water in Uyoma Peninsula in Siaya district, Nyakach area in Kisumu district and Karachuonyo in South Nyanza district within the immediate lacustrine niche has

led to serious abuses: irregular supply of water due to unrepaired machinery as well as piper or illegal sale of diesel for machines to owners of out-board motor canoes in the lake; reticulated water supply which is inconsistent with the pattern of settlement in the area; and a host of other problems.

Moreover, domestic use of water is by far less important than that intended to effect change in the rural landscape, whether in modernising agriculture or industry. A major programme to this end would have to involve irrigation or relevant dry farming methods. This would regularise subsistence farming; besides, it would encourage cash crop production in perishable and annual crops, notably horticultural crops, rice and cotton. Such innovations have the capacity to raise standards of living of the population, not least foster agricultural development, an integral aspect of the L.V.B.D.A., in the region.

In floodplains of the notorious Nyando (Kano Plains) and Nzoia (Bunyala lowlands) rivers the construction of levees to avoid flooding, a popular slogan in various circles, does not seem to be the best of solutions. Persistent flooding has affected agricultural activity adversely, and engendered large-scale out-migration as a tentative alternative to remaining put in the area and facing the effects of flooding, such as famine, lack of shelter and erratic life in general.¹⁴ Within this ecological niche

there will be need for the L.V.B.D.A. to conduct multi-purpose surveys that would gauge opinions of the population on what they would like included or deleted in changing the face of the floodplain and rendering it permanently habitable. Now is the time for implementing lessons learned over the past decade or so on pilot irrigation schemes vis-a-vis subsistence economy in the region; it is the opportunity to re-settle inhabitants of the area while making them retain their land rights or receiving compensation in the process of developing agro-industrial transformation of their region. This re-settlement programme should be effected against the background that further expansion of settlement in the two flood-prone areas is conscripted by the encroaching sugar-belts, now given greater emphasis than ever before in the regional economy. Sugar, sugar and sugar everywhere; but will there be its limits?

Which leads us to consider the current over-emphasis on sugar growing in the area at the expense of other cash crops and food production. A major question is whether the sugar industry takes into account interrelated problems land tenure and use, for instance, the diminishing and fragmented land acreages per household which are grossly uneconomic but most of which have been mortgaged as land title-deeds for agricultural and other loans, thereby intensifying land use - human settlement competition.

Indiscriminate expansion of the sugar industry has far-reaching agro-industrial, political, economic and social repercussions, particularly with regard to increasing population densities and handicapping other development efforts. Unless some system of "vigilisation" is adopted to re-distribute population in accordance with the development programme, the haphazard distribution of population, land uses and other activities stands to disrupt regional planning priorities.

In the lake region savannahs a cloud of fear still hangs over the formerly tsetse fly-infested areas. These include the Lambwe Valley, accordingly turned into a wildlife reserve but in parts used as farmland; low-lying parts of Siaya and Busia districts. It will be imperative for the L.V.B.D.A., in conjunction with the International Centre for Insect Physiology and Ecology (I.C.I.P.E.) operating from its base at Mbita Point in South Nyanza (a former tsetse fly "colony"), to wipe out this menace, dispel the myth of its existence and convince the population as to the suitability of the whole region for settlement. Population moved from the floodplains or densely populated parts could be re-settled in these areas. Alternatively, those areas could be turned into agricultural land as determined by ecological conditions and developed by appropriate scientific and technological approaches.

The highest parts of the lake basin which now experience population pressure pose another development challenge within the L.V.B.D.A. Kisii and Kakamega districts have become classical examples through newspaper reports, scholarly researches, government reports and even in the perception of the local population. Sizeable chunks of land in these districts are also too rocky to be cultivable, albeit more productive than expansive farm units in the lower ground. Re-settlement is necessary in this area whose re-organisation into respective land uses as ecological conditions permit could be the source of nutritional resources for the whole lake basin. Part of the re-settlement stream could be directed to parts of the former "Scheduled Areas" where lower population densities are experienced, and where much of the land is not utilised effectively.

Urban centres in the lake basin share one common problem, namely persistent water-shortage irrespective of location, size or infrastructural base. Apparently, all of them still depend upon water reservoirs constructed during the colonial period, when the colonial administration readily asserted that the African population were but temporary urban dwellers, returning to their rural homes as soon as their labour was no longer required. The colonial policy devised an appropriate policy to regulate

rural-urban and the counter-migration streams. But since independence practically every urban centre in the country has experienced an expanding influx of population, augmenting urban population more rapidly than anticipated before. Which urban centre in the lake basin has no water problem? Simply none. Water shortage in Kisumu has nearly crippled domestic consumption and industrial uses in a town where the famous Kisumu Cotton Mills (KICOMI) nearly closed down recently because of the problem and where the plants for Kenya Breweries as well as the Molasses industry now under construction will demand water twice the present domestic consumption; the Kibos stream near Kisumu is too small and fluctuating volume to be the source of water supply for the town. Kisii in the heart of heaviest rainfall is the area faces frequent water crisis; it is, indeed, one of the filthiest towns in the country, part of the story being the piling garbage of green produce from the immediate hinterland with no water to drain it away to the sewage terminal. This poses an environmental problem in an area where an epidemic of any disease would decimate a considerable proportion of the population. Kakamega town in another heavy rainfall area suffers from persistent water shortage. Smaller urban centres such as Bungoma, Homa Bay and Migori experience a most pathetic situation,

despite their sprawl around their initial extent. Both Kapsabet and Kericho are much better than all the other urban centres thanks to less rapidly increasing volumes of migrants into them. This paper would like to argue that Lake Victoria should be the major source of gigantic water reservoirs which should be constructed to supply water to rural as well as urban areas in the basin. As the nodes of industrialisation, urban centres are soon going to exert a commanding demand for water which only the lake can be its most dependable source. Harnessing the lake water in such reservoirs would also facilitate irrigation and other uses in the raparian areas of the drainage system within the basin.

Population Policy for the Lake Basin Districts

The basic connotation of population policy relates to regulating fertility as a means of reducing the rate of population growth thereby enhancing prospects for socio-economic advancement of population. But this seems a parochial and myopic concern, at least in the face of demographic profile as well as trends in the lake basin districts. These are high fertility, densely populated and population problem districts where population policy ought to encompass dynamics of fertility-mortality interplay, population movements and development process in the urban hierarchy in the region.

That the natural increase of the lake basin population exceeds the national average suggests it is a pocket of population cum resource problem. Fertility regulation, popularly known in the country as family planning, is therefore inevitable in the area. However, it must incorporate both traditional and modern tendencies particularly in an area where the local ethnic groups are known for their strict adherence to spacing of births, the cardinal emphasis in the family planning programme. It is common knowledge, now even documented, that the Luo, the Luhya, the Kisii, the Kuria, the Teso and the Kalenjin are some of the few Kenyan African peoples still cherishing traditional norms and values of fertility regulation: post-partum abstinence encouraged by polygamy, avoidance of coital relations of husbands and wives and governed by traditional rituals; coitus interruptus whenever deemed necessary; and other traditional techniques of family planning.¹⁵ In the modern setting family planning has adopted modern techniques (the condom, the intra-uterine devices, pills, spermicidals, etc,) with no regard whatsoever to traditional techniques and, more important, without mounting before-hand KAP/fertility surveys on the basis of which viable family programmes could rationally be developed. Using the demographic and other appropriate units the L.V.B.D.A. could mount family planning within

the framework of planning in totality, placing greatest emphasis on a "blended approach". Then alternative paths of fertility-mortality performance, with or without the effect of migration, could be graphed and population projections made against which the L.V.B.D.A. development would be considered.

Movements of population is another area which demands population policy. The laissez faire trend in the phenomenon has persisted, and several attempts to regulate migration have been unsuccessful; the Vagrancy Act is a telling case in point. The basic policy should be to encourage intra-regional migration and discourage out-migration. A strategy already being adopted is the "growth centre" approach which urban and regional development plans emphasise to create a coherent centre - periphery relationship. The present urban centres should now develop a broad infrastructure to service their peripheral regions, reduce intra-regional inequalities and maintain relationship with "lower order" centres within the "urban-regional hierarchy. The L.V.B.D.A. could also design a dossier for every person in the region, a device that facilitates following migration histories of the population.¹⁶ This idea has the advantage of giving a more accurate picture of population movements than net-migration estimates made from census or survey data.

Other Population Characteristics

It is not an easy exercise to identify all the characteristics of population that affect or are affected by regional development. Those given above are perhaps the most basic in any given situation. But other characteristics may arise depending on different items of planning and development in the lake basin. This is precisely why the demographic unit will have to work in close collaboration with other components of the L.V.B.D.A. Yet a peculiar feature of the demographic unit is perhaps its capacity to give development programmes the sketches of population characteristics which constitute an integral aspect of broadly designed planning and development.

CONCLUSION

The length of this paper may be justified by the last statement in the preceding section. Throughout the paper it has consistently been maintained that demographic information is crucial for development of the Lake Victoria Basin. It is therefore imperative that a demographic unit will have to be set up along other units in an autonomous, self-reliant but "open systemic" Lake Victoria Basin Development Authority. On the basis of demographic - resource considerations, planning and development in the L.V.B.D.A. may group the nine districts into four categories. First, there are the two "population problem" districts of Kakamega and Kisii where demographic trends pose significant

challenges to development planning in the lake basin. These need to be examined more closely if a meaningful solution is to be found. Second, the generally low lying parts, basically Siaya and Busia districts as well as the immediate lacustrine South Nyanza and Kisumu districts, require more detailed study of demographic-ecological implications for the L.V.B.D.A. Third, Bungoma and much of South Nyanza district, large parts of which have promising prospects for development, fall in a category of their own. Their potentials put them in good stead for this regional development programme thanks to modest distribution and density of population. Finally, Nandi, Kericho and the sugar-belt in Kisumu district constitute an area of greatest economic potential and may well be the economic backbone of the L.V.B.D.A. Already, sugar-belts in the three are merging forming one of the most extensive commodity landscapes in a region. It is tempting to conclude that these micro-regions have great scope for the transformation of the entire lake basin and for ensuring the existence of a comprehensive regional planning cum development in the aegis of the Lake Victoria Basin Development Authority.

A study of the drainage system demonstrates the capacity of the Lake Victoria Basin for domestic water supplies, hydro-electricity, fishing, irrigation, etc. /42
Basin of Lake Victoria, in S.E. Colaba (ed.) Studies in East African Geography and Development. London: Heinemann, 1971, pp. 19-40.

Notes and References

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2. Fair, F.J.D. "A Regional Approach to Economic Development of Kenya," South African Geographical Journal, vol. 45, 1963, pp. 55-77.
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10. One of the most useful studies has been made by Henry Rempel on inter-district transfers of population. See Rempel, H. An Analysis of the Information on Inter-District Migration provided in the 1969 Kenya Census. Discussion Paper No. 244, Institute for Development Studies, University of Nairobi, January 1977.
11. Quoted in W.C. Robinson population and development planning (ed.) (New York: The Population Council, 1975), p.3.
12. The Population Studies and Research Institute has been organising regional seminars on the population data needs for planning, starting with Nyanza/Western to Central/Eastern and later other areas where provincial and district officers discuss a wide range of issues raised in publications prepared by the Institute itself. Publications so far cover provincial population data, their uses and abuses. Population projections for provinces, districts, urban centres on alternative fertility paths, etc., have also been published.

13. Brass, W. Population Data Needs for Development Planning, in S.H. Ominde and C.N Ejiogu (eds.) Population growth and economic development in Africa (London: Heinemann, 1972), p. 343.
14. Insight into the determinants of out-migration has revealed that flooding, which ranks highest, is a menace to development efforts in the area. See Ayiemba, E.H.O Inter-censal Population Change: A Comparative Study of Kano Plains and the Sugar-belt. (Unpublished M.A. Thesis, University of Nairobi, 1974).
15. In a survey of about thirty tribes in East Africa, Angela Molnos has examined the knowledge, attitudes and the practice (KAP) of family planning among different African population groups. See Molnos, Angela. Cultural Source Materials for Population Planning in East Africa, Vols I-IV (Nairobi: East African Publishing House, 1972).
16. Sweden is one country which has successfully used dossiers and parish registers to study migration of population which is then easily related to the development programme.