

Q U A L I T Y O F L I F E
A N A L Y S I S

A BROAD UGANDA POVERTY ASSESSMENT
USING HEALTH AND
WELL-BEING INDICATORS
FOR MAPPING

by

Tom Barton

OXFAM UGANDA

(extract from Health Sector Review)

MAY 1995

APPENDIX 6.1 QUALITY OF LIFE ANALYSIS

Quality of Life Analysis - a composite index

This analysis is an effort to grapple with the large social questions of marginality, poverty, gender and access to resources. In an attempt to approach this concern, the analysis relies on a composite indicator for 'quality of life'. It reflects the relative ranking of 38 districts (Ntungamo was created too recently to have adequate data) based on ten objectively verifiable indicators relevant to health and well-being. These indicators cover a variety of core issues, from age (infants, adolescents and adults) to gender; from death and disease to education and access to resources.

The analysis has been presented in three formats, each of which has different strengths and weaknesses:

- a) Alphabetical order of districts, with actual levels of each indicator shown. This layout is useful for seeing the breadth of differences between districts and the intensity of problem in each district, but it does not easily give an overall impression.
- b) Rank order, based on cumulative rankings by district for each individual indicator. This is a 'natural' ranking, but because certain indicators are at the same level for several districts, the worst cases may be rated only at 20 rather than 38. In effect, therefore, the indicators are not at par in their values.
- c) Rank order by quintiles, based on dividing the ranges for each indicator into fifths. In this way, all indicators have an equal opportunity of representation from 1-5. Note that the indicator for AIDS is, however, based on dividing the districts in order to achieve adequate portrayal of district variation.

The analysis is presented statistically on pages 106-108, with visual maps on pages 113-125.

Appendix 6.1 Quality of Life Index

District	IMR	Pop 5k	Wat	Fert rate	Fem lit	Nev sch	AIDS mil.	Orph %	Fem HoH	Adol pg%
Apac	114	21.4	23.3	7.1	36	45	1786	9.5	30	14.4
Arua	137	48.1	37.1	6.7	28	58	986	10.5	22	9.7
Bundibugyo	150	62.1	17.4	7.5	27	52	282	10.5	22	17.0
Bushenyi	122	46.6	32.6	8.1	46	41	831	10.1	29	6.8
Gulu	172	28.7	29.1	6.9	33	49	4170	16.4	33	10.8
Hoima	91	44.7	35.6	6.9	49	33	1267	9.7	28	14.0
Iganga	125	63.1	9.1	7.0	38	45	545	8.0	23	19.0
Jinja	97	94.1	18.3	6.2	60	31	5366	8.7	24	13.6
Kabale	114	71.1	46.2	8.0	42	46	903	10.1	33	6.0
Kabarole	136	26.1	27.3	8.0	40	47	2114	11.6	30	11.0
Kalangala	98	20.0	10.2	6.3	72	23	919	16.4	24	16.0
Kampala	80	99.3	-	5.2	86	19	13865	12.5	31	11.0
Kamuli	118	41.9	27.4	6.7	34	50	570	7.7	21	17.5
Kapchorwa	104	79.0	14.4	8.4	41	33	205	7.6	28	7.2
Kasese	103	65.6	48	8.1	39	45	3508	7.4	26	15.0
Kibale	122	34.3	26.7	7.8	42	45	136	9.6	25	14.9
Kiboga	138	15.2	4.3	7.4	50	34	71	14.3	27	13.3
Kisoro	105	19.1	13.4	8.4	21	63	388	8.8	36	8.2
Kitgum	165	8.9	32.5	6.9	22	53	2108	15.8	36	8.2
Kotido	145	10.8	23.6	7.9	6	92	423	12.4	55	7.0
Kumi	122	40.1	24.5	6.3	31	45	637	18.3	28	11.6
Lira	127	29.7	25.1	6.6	32	46	1499	12.0	27	11.4
Luwero	117	37.4	37.4	7.2	55	27	3622	15.5	33	13.9
Masaka	107	49.4	8.4	7.5	59	36	9343	14.9	32	10.7
Masindi	118	34.1	31.6	7.2	40	42	661	10.5	27	14.1
Mbale	129	81.0	26.4	7.0	49	36	610	7.6	23	10.6
Mbarara	145	40.6	37.0	7.8	43	43	943	12.0	28	6.3
Moroto	147	24.3	70.6	6.2	6	93	168	13.3	60	6.5
Moyo	143	39.3	49.5	6.8	30	55	2201	16.5	36	5.7
Mpigi	94	56.4	8.9	7.1	71	24	3104	12.6	32	12.0
Mubende	119	30.2	14.4	7.5	54	36	1792	12.1	28	14.1
Mukono	102	44.3	21.4	6.8	57	29	1737	10.9	30	15.6
Nebbi	139	47.3	44.0	6.9	29	58	1997	10.6	28	8.3
Pallisa	124	82.7	9.0	6.5	36	48	87	3.3	18	18.3
Rakai	119	39.3	11.7	7.7	49	39	5301	17.9	33	10.5
Rukungiri	122	67.9	48.7	8.1	50	40	641	12.4	33	7.2
Soroti	116	19.1	43.9	6.4	34	38	1581	18.1	26	13.0
Tororo	138	44.3	25.0	6.9	53	45	1213	9.4	26	16.3
National levels	122	49.0	26.4	7.1	45	30	2761	11.6	26	11.3

Note: Ntungamo not listed due to recent establishment after the latest census (1991)
Source: Barton & Wamai, Equity and Vulnerability 1994; Wamai, 1995.

Appendix 6.1 Quality of Life Index

Rank	District	IMR	Pop 5km	Wat	Fr rte	Fem lit	Nev sch	AIDS /mil	Orph %	Fem HoH	Adol pg%	TOT
1	Kapchorwa	8	05	10	20	15	7	5	3	9	7	89
2	Kampala	1	01	01	01	01	01	38	20	12	15	91
3	Jinja	4	02	12	2	04	6	36	6	5	21	98
4	Mbale	20	04	19	10	11	9	11	3	4	12	103
5	Pallisa	17	03	5	5	19	19	2	01	1	33	105
6	Mpigi	3	11	4	11	03	3	31	21	13	18	118
7	Kalangala	5	31	7	3	02	2	17	27	5	29	128
8	Iganga	18	09	6	10	18	16	9	5	4	34	129
9	Mukono	6	17	13	8	06	5	24	15	11	28	133
10	Hoima	2	16	27	9	11	7	21	11	9	23	136
11	Masaka	10	12	3	14	05	9	37	24	13	13	140
12	Kiboga	23	33	2	13	10	8	1	23	8	20	141
13	Bushenyi	16	15	26	19	12	13	15	12	10	5	143
13	Kabale	11	06	33	18	14	17	16	12	14	2	143
14	Kibale	16	23	20	16	14	16	3	10	6	26	150
14	Kamuli	14	18	22	7	20	21	10	4	2	32	150
15	Mbarara	28	19	28	2	13	15	18	17	9	3	152
15	Rukungiri	16	07	35	19	10	12	13	19	14	7	152
16	Tororo	23	17	17	9	09	16	20	8	7	30	156
17	Mubende	15	25	10	14	08	9	26	18	9	24	158
18	Kisoro	9	32	9	20	29	26	7	7	15	8	162
19	Kumi	16	20	16	3	23	16	12	31	9	17	163
19	Masindi	14	24	24	12	16	14	14	13	8	24	163
20	Bundibugyo	29	10	11	14	27	22	6	13	3	31	166
21	Arua	22	13	29	7	26	25	19	13	3	10	167
22	Kasese	7	08	34	19	17	16	32	2	7	27	169
23	Rakai	15	21	8	15	11	11	35	29	14	11	170
24	Apac	11	30	14	11	19	16	25	9	11	25	171
24	Lira	19	26	18	6	22	17	22	17	8	16	171
25	Luwero	13	22	30	12	07	4	33	25	14	22	182
26	Moyo	25	21	36	8	24	24	4	28	15	1	186
27	Nebbi	24	14	32	9	25	25	27	14	9	9	188
27	Soroti	12	32	31	4	20	10	23	30	7	19	188
28	Kabarole	21	28	21	18	16	18	29	16	11	15	193
29	Kotido	26	34	15	17	30	27	8	19	16	6	198
30	Gulu	31	27	23	9	21	20	34	27	14	14	220
31	Moroto	27	29	37	2	30	28	30	22	17	4	226
32	Kitgum	30	35	25	9	28	23	28	26	15	8	227

Note: Ntungamo not listed due to recent establishment after the latest census (1991)
Source: Barton & Wamai, Equity and Vulnerability 1994; Wamai, 1995.

Rank	District	IMR	Pop 5k	Wat	Frt rte	Fem lit	Nev sch	AIDS /m**	Orph %	Fem HoH	Adol pg%	Total score
1	Kampala	1	1	1	1	1	1	5	5	2	2	20
2	Jinja	1	1	4	2	2	1	5	2	1	3	22
3	Kapchorwa	2	2	5	5	3	1	1	3	2	1	25
3	Mbale	3	1	4	4	3	2	2	3	1	2	25
4	Kabale	2	2	2	5	3	2	3	4	2	1	26
4	Kalangala	1	5	5	2	1	1	3	3	1	4	26
4	Pallisa	3	1	5	3	4	2	1	1	1	5	26
4	Rukungiri	3	2	2	5	3	2	2	4	2	1	26
5	Hoima	1	4	3	3	3	1	3	3	2	4	27
5	Masindi	2	4	3	4	3	2	2	2	1	4	27
6	Bushenyi	3	3	3	5	3	2	3	3	2	1	28
6	Kasese	2	2	2	5	3	2	5	2	1	4	28
6	Mpigi	1	3	5	4	1	1	5	3	2	3	28
7	Arua	4	3	3	3	4	3	3	3	1	2	29
7	Kibale	3	4	4	5	3	2	1	2	1	4	29
7	Mukono	2	4	4	3	2	1	4	3	2	4	29
7	Nebbi	4	3	2	3	4	3	4	3	2	1	29
8	Iganga	3	2	5	4	4	2	2	2	1	5	30
8	Kiboga	4	5	5	4	3	2	1	2	1	3	30
8	Lira	3	4	4	3	4	2	3	3	1	3	30
8	Masaka	2	3	5	4	2	2	5	3	2	2	30
9	Kisoro	2	5	5	5	5	3	1	2	2	1	31
9	Kumi	3	4	4	2	4	2	2	5	2	3	31
9	Moyo	4	4	2	3	4	3	4	4	2	1	31
9	Soroti	2	5	2	3	4	2	4	5	1	3	31
9	Tororo	4	4	4	3	3	2	3	3	1	4	31
10	Bundibugyo	4	3	4	4	4	3	1	3	1	5	32
10	Kamuli	2	4	4	3	4	3	2	4	1	5	32
10	Luwero	2	4	3	4	2	1	5	5	2	4	32
10	Mbarara	4	4	3	5	3	2	3	5	2	1	32
11	Kabarole	3	5	4	5	3	2	4	3	2	2	33
11	Moroto	4	5	1	2	5	5	1	4	5	1	33
12	Apac	2	5	4	4	4	2	4	3	2	4	34
13	Kitgum	5	5	3	3	5	3	4	4	2	1	35
13	Mubende	3	4	5	4	3	2	4	4	2	4	35
14	Rakai	3	4	5	5	3	2	5	5	2	2	36
15	Gulu	5	4	4	3	4	3	5	5	2	2	37
16	Kotido	4	5	4	5	5	5	2	5	4	1	40

[** The range for AIDS is from 71-13,865 -- too wide to be meaningful with quintiles of ranges. Instead, it is ranked on quintiles of districts to give a better scatter.]

Note: Ntungamo not listed due to recent establishment after the latest census (1991)

Source: Barton & Wamai, Equity and Vulnerability 1994; Wamai, 1995.

Indicators

In order of list, the indicators are;

IMR - infant mortality rate, shows the number of deaths among children under the age of one year per 1,000 live births. Is a broad indicator of health, dependent on many underlying factors, including access to health care, nutrition, prevalent diseases, immunisation coverage, etc. Maternal education and household incomes are also important. While quite variable by regions, the level has not changed much in Uganda over the past two decades. (1991 Census data)

Pop 5 km -proportion of the population living within five kilometres of a health unit. In this case, health unit was specified as one offering essential drugs (curative care) and/or immunisation (prevention). Considerable investments have been made in the last decade by major donors and government to upgrade and construct more health facilities in Uganda. Showing access to infrastructure, this indicator is generally weakest in areas where populations are quite dispersed. (1992 MoH/HPU inventory)

Wat - proportion of the population with access to safe water, especially in rural areas. This indicator is affected by the natural environment, as well as social attitudes and financial resources. Some areas of the country, e.g., Kisoro and Karamoja, rate their water problems higher than 'health', although the two are closely linked. Water is essential for personal hygiene, for drinking and for the preparation of safe food. One limitation for this indicator is that it is based on numbers of boreholes times 300 persons divided by district population. As such, it does not adequately represent proportions of the population within a reasonable distance or time from safe water sources. (1993 UNICEF inventory)

Frt rte - total fertility rate; this is a measure of the average expected number of children a woman in this region would bear in her reproductive lifetime. Like the IMR, it is affected by many other influencing factors, e.g., perceptions about the value of children, access to safe and effective means of delaying or spacing pregnancies, poverty, etc. Lower fertility rates are generally linked to lower rates of infant and maternal mortality. (1991 census data)

Fem lit - the proportion of women (10 years and above) who are literate (able to read and write with meaning) in at least one language. This indicator is gender specific, and shows societal willingness and/or capacity to invest in the education of girls. Many studies

have shown a very strong link between maternal education levels and preventive care of children as well as use of family planning. (1991 census data)

Nev sch - the proportion of 6-12 year-old (school-age) children eligible to attend school who have never attended any formal schooling.

This indicator is influenced by household investments in education, as well as societal investments in the provision of sufficient schools. In addition to being a proxy for poverty in these ways, it is also linked with lower anticipated skills and earning power when these children grow into adulthood. (1991 census data)

AIDS/mil - reported AIDS deaths (cumulative data by end 1994) per million population (for simplicity, the 1991 census levels were used without adjustment for estimated population growth). Reflects the history of the epidemic in Uganda; but does not indicate which areas are being most affected by new infections. Does give some indication of which areas are suffering the biggest socio-economic impacts and are currently being affected most by health and home care needs for persons with AIDS. (1994 ACP surveillance data)

Orph 1-% - the proportion of children under age 18 years who have lost one or both biological parents through death. Most of these children have lost their parents to AIDS or to the consequences of public insecurity. Either way, increased numbers of orphans mean more dependents for their relatives, and can result in foreshortened schooling, nutritional deficits, or early sexuality and marriage. The representation as a proportion helps to understand the intensity of the situation, e.g., with regards to preservation of social and cultural ways of life. (1991 census data)

Fem HoH - the proportion of homes headed by women. This is another gender specific indicator, and one related to poverty. Such households tend to only have one economic provider and their pattern of health care utilisation is more dependent on self-treatment (see Barton and Bagenda, 1993). (1991 census data)

Adol pg% - the proportion of girls between 12-18 years at the time of the census who had already born a child. Adolescent mothers face many health risks personally and their children are much less likely to be immunised or cared for properly (e.g., see Bachou, 1993) (1991 census data, as extracted by Wamai, G.)

Commentary

There are, of course, some limitations in the interpretation and use of this analysis. For example, it relies on proxies for the gradient of poverty versus affluence. There are presently no district disaggregated data sets for income and household expenditures, only a regional data base (the 1989 NHBS, and the 1992-93 IHS survey). Just because districts like Kampala or Kapchorwa are high on the list does not mean that they are without problems or poverty. Moreover, this analysis does not give a picture of what the costs would be to modify the ranking, either per capita, per district, or per indicator. It also remains to be seen how sensitive the overall index would be to project-induced change since so many of the indicators are affected by the collective input of multiple factors.

Another solution would be an assessment of indicator significance with a suitable multiplier factor for its rankings, e.g., IMR may be more important than AIDS in terms of life years lost. One could also argue that certain of the indicators are 'harder' or more 'direct' in their association with quality of life and others are 'softer', e.g., IMR versus Female Head of Household. The problem is in determining the size of the multiplier factor.

A further limitation is that the value for AIDS deaths may be somewhat skewed in a few districts, e.g., Pallisa, Kibale, and Kiboga, all of which are among the younger districts and thus have had less time depth in recording such deaths (there has been no system to reassign deaths by specific locality for districts which split off from others during the period of surveillance).

In the realm of health, some indicators which might be helpful are not available for all districts, e.g., latrine coverage, numbers of village health committees, numbers of trained TBAs, numbers of births assisted by a trained attendant, HIV infection incidence rates, etc. District spending per capita in the health sector, whether PHC or curative, is also not yet available as an organised data set, largely due to the transfer from central management to decentralisation. Life expectancy has only been calculated at a national level. Reported levels of morbidity (illnesses) in the HIS have been discounted by many observers, including the MoH itself. Immunisation levels have also been called into question, and therefore have not been used in this index.

Population density is certainly a factor affecting quality of life, but it needs to be combined with other indicators such as level of urbanisation. For example, Jinja is densely populated at 428 persons per square kilometre; but it is also 28% urban. Kisoro, on the other hand, which is also densely inhabited at 301 persons/sq km, is only 4% urban. There would be several anticipated effects of this difference. For example, salaried employment is

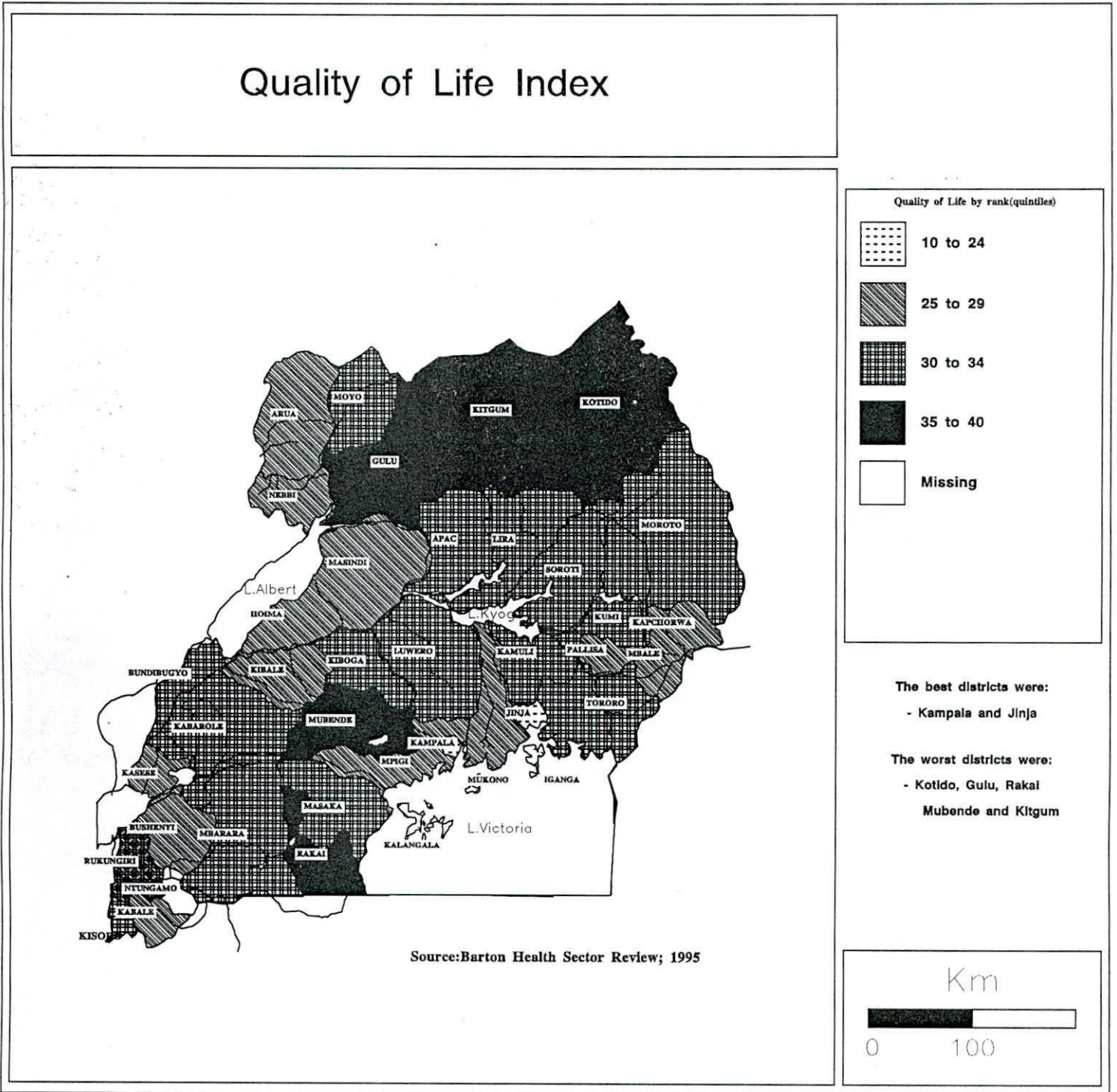
likely to be very low in Kisoro compared to Jinja. On a related issue, listings of natural resources and the anticipated life span for those resources at present consumption rates are not yet available by district. For example, while urban areas have some kinds of socio-economic resources like schools and shops, they are simultaneously rapidly depleting natural resources like water, fuelwood, etc. from the immediate surroundings.

Uses For the Index

This 'quality of life' index can certainly be of value in helping to direct projects that are seeking to address the poorest and most marginal regions of the country. Of course, it would also be important to look at current and future project involvement in the different districts in order to do strategic planning (see appendix on project activities). Even for projects already located in certain districts, it is also possible to look at individual indicators and assess whether their project activities are addressing core issues affecting quality of life in that district.

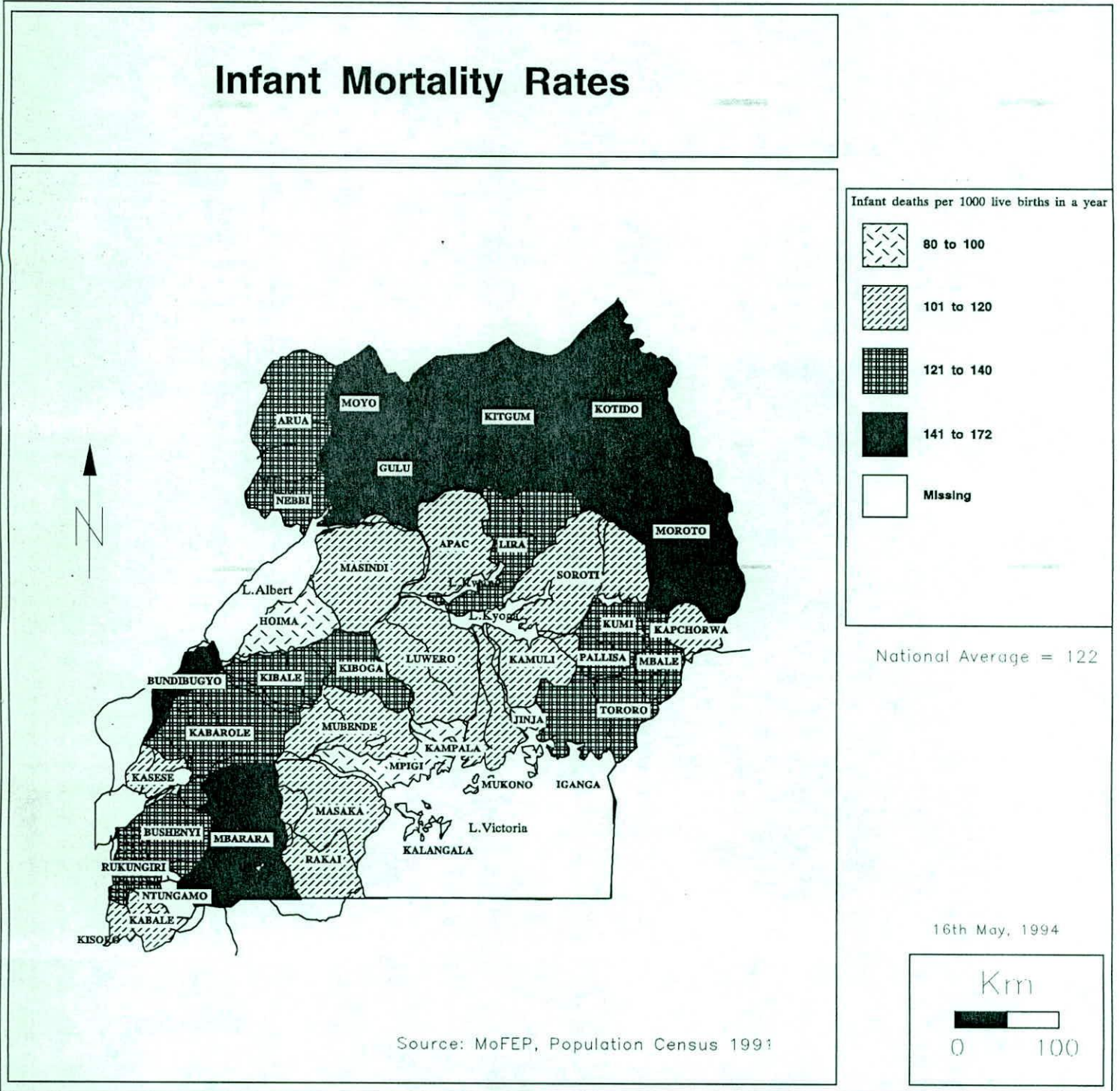
MAP 1.

Quality of Life Index



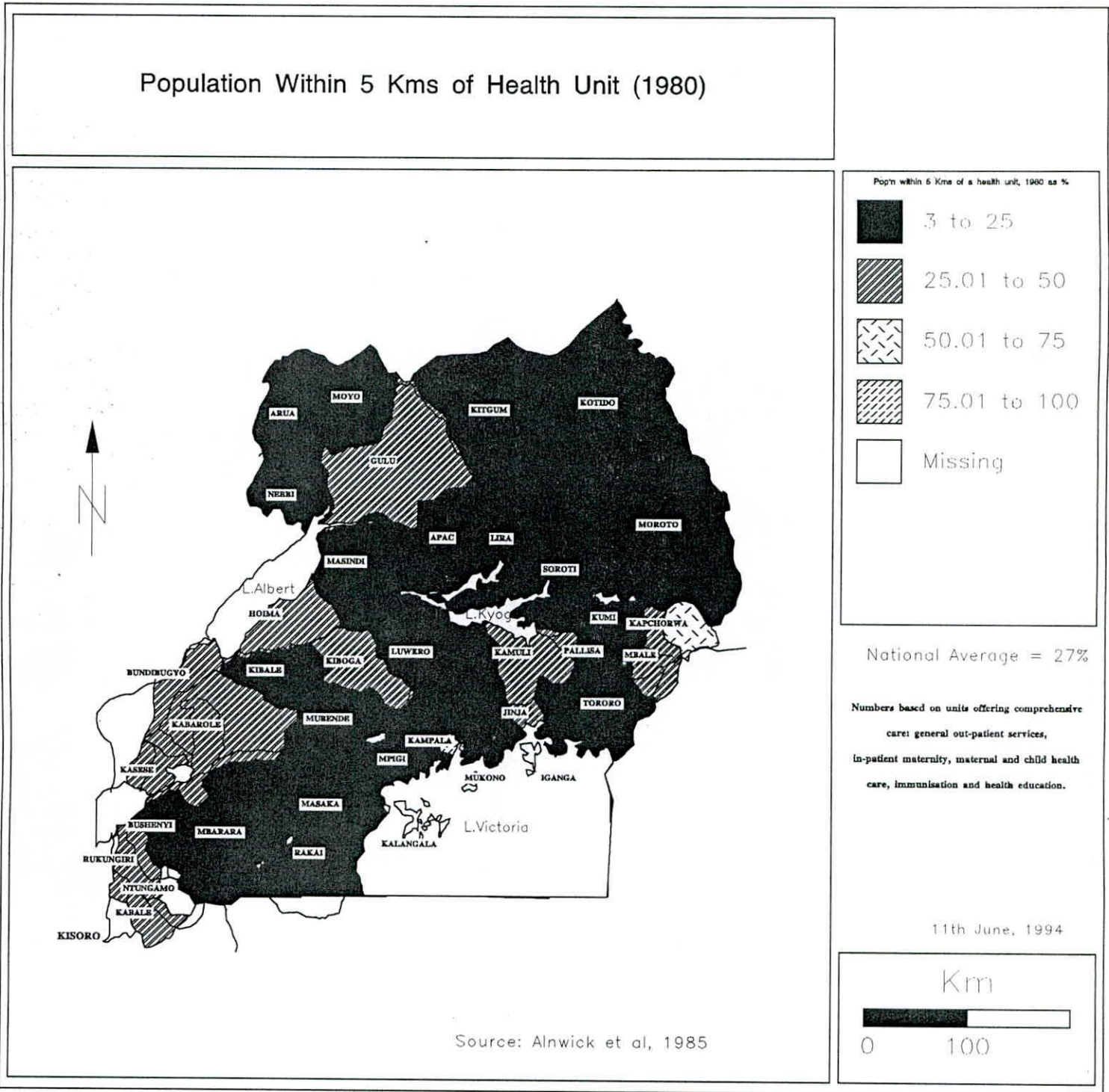
MAP 2.

Infant Mortality Rates



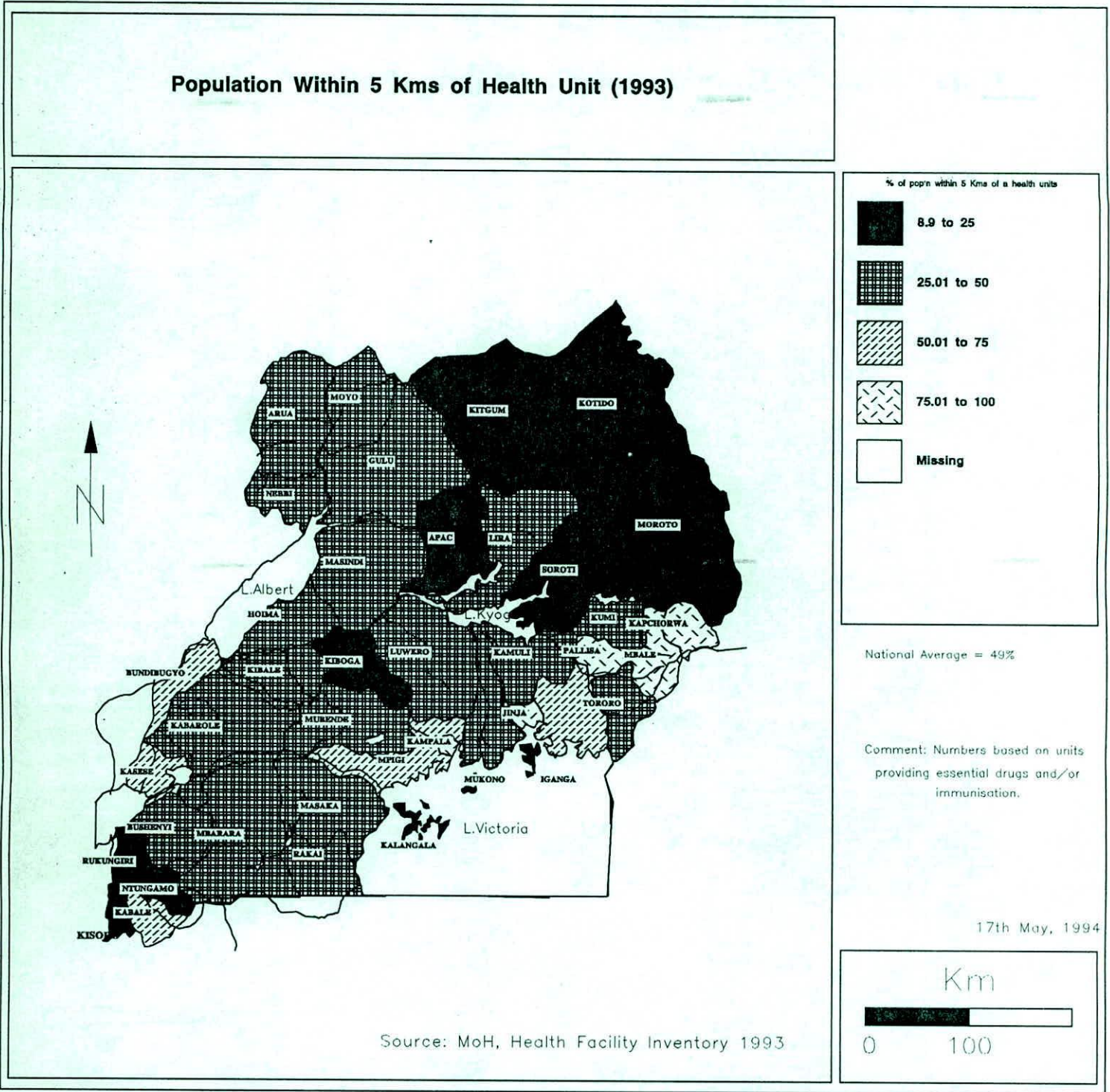
MAP 3.

Population Within 5 Kms of Health Unit (1980)



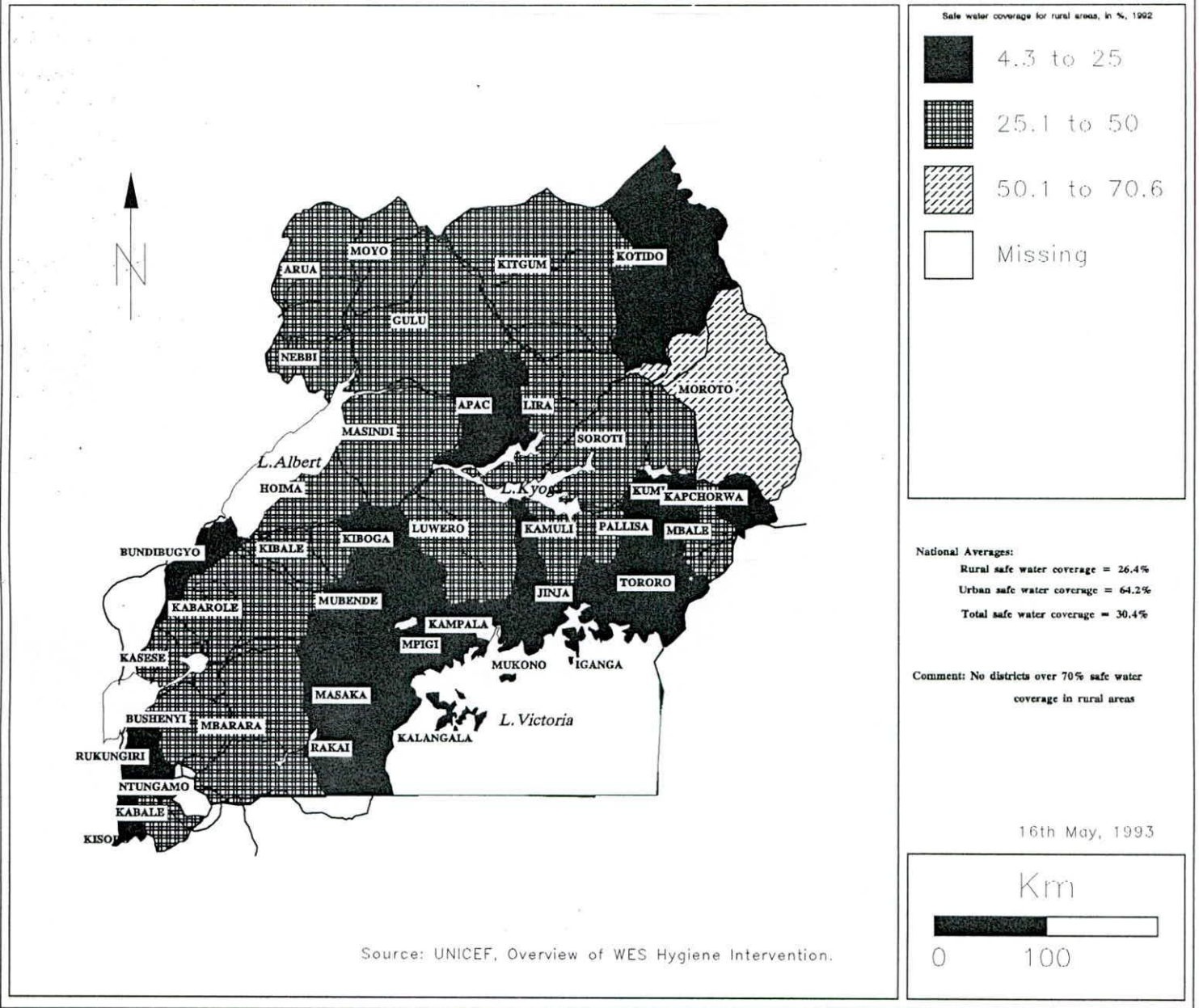
MAP 4.

Population Within 5 Kms of Health Unit (1993)



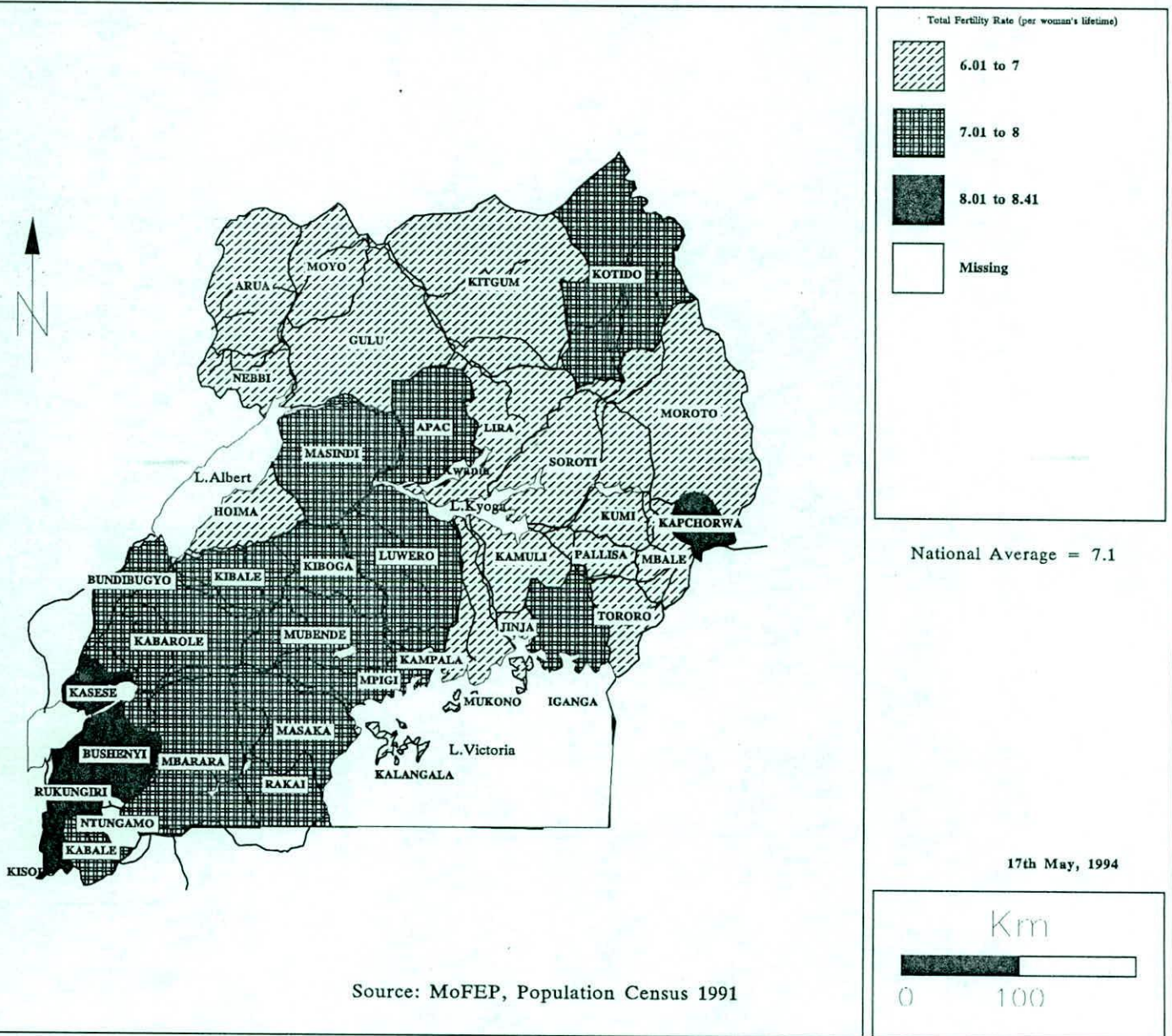
MAP 5.

Rural Water - Good Enough to Drink?



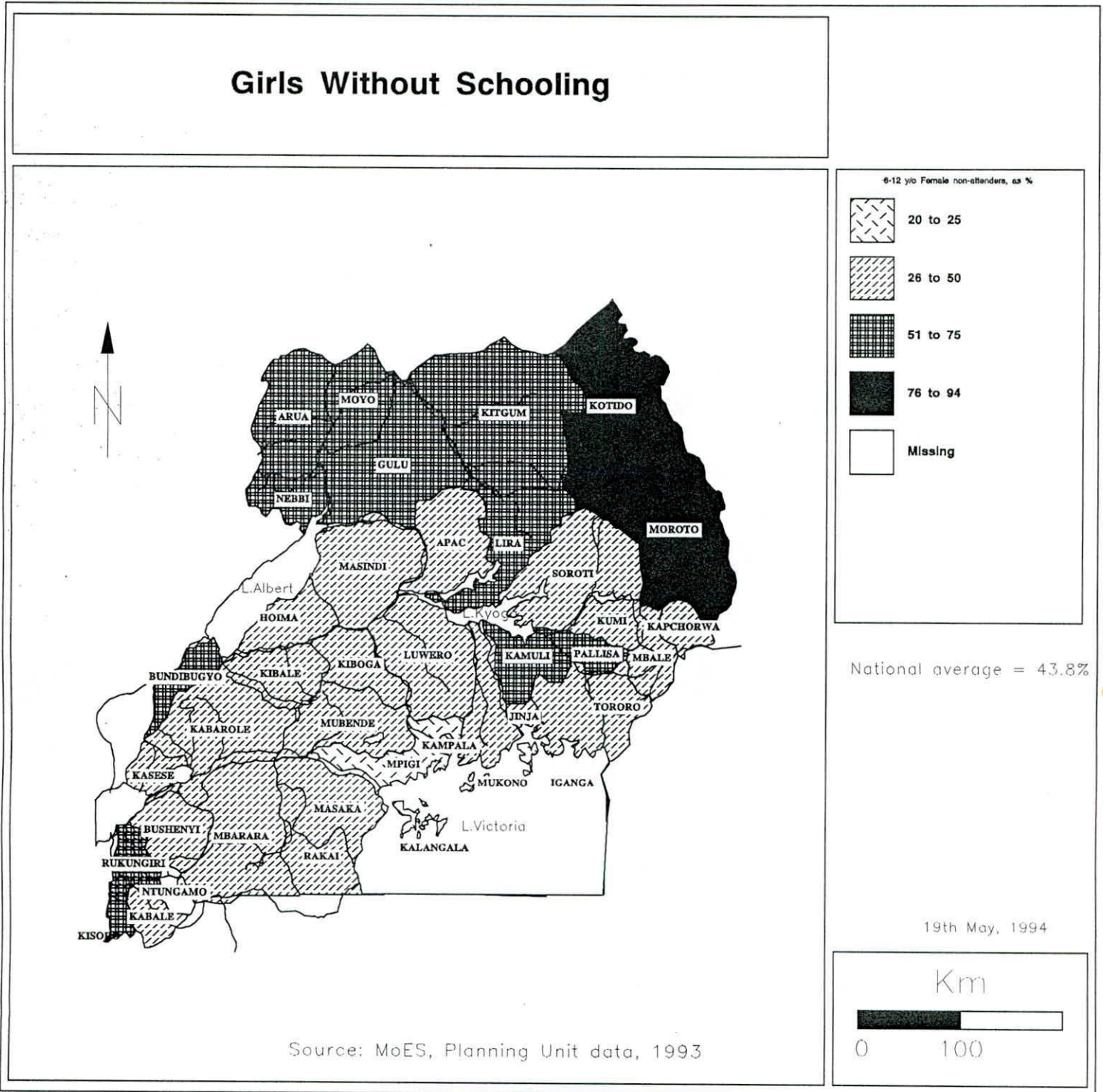
MAP 6.

Fertility Rates



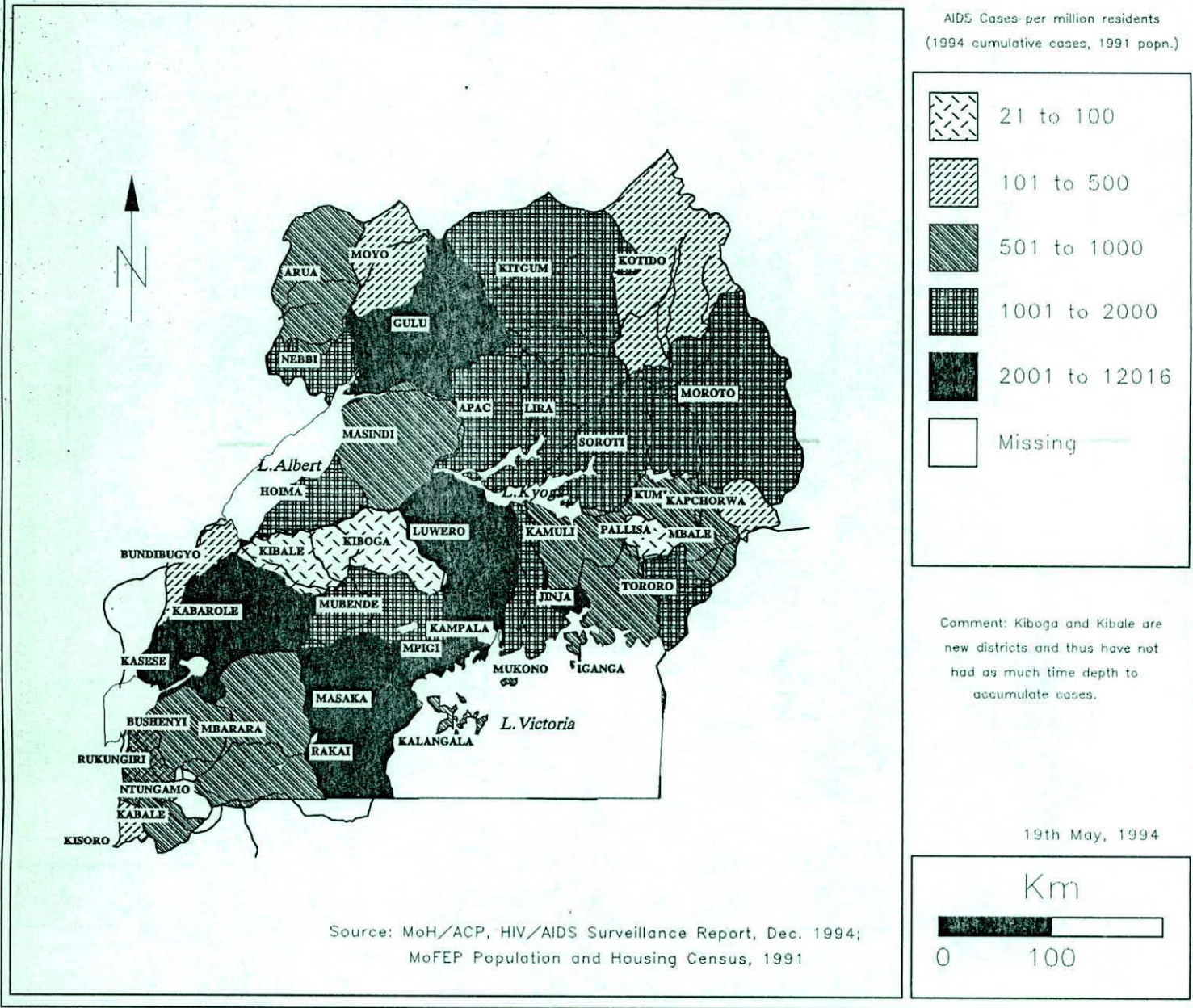
MAP 7.

Girls Without Schooling



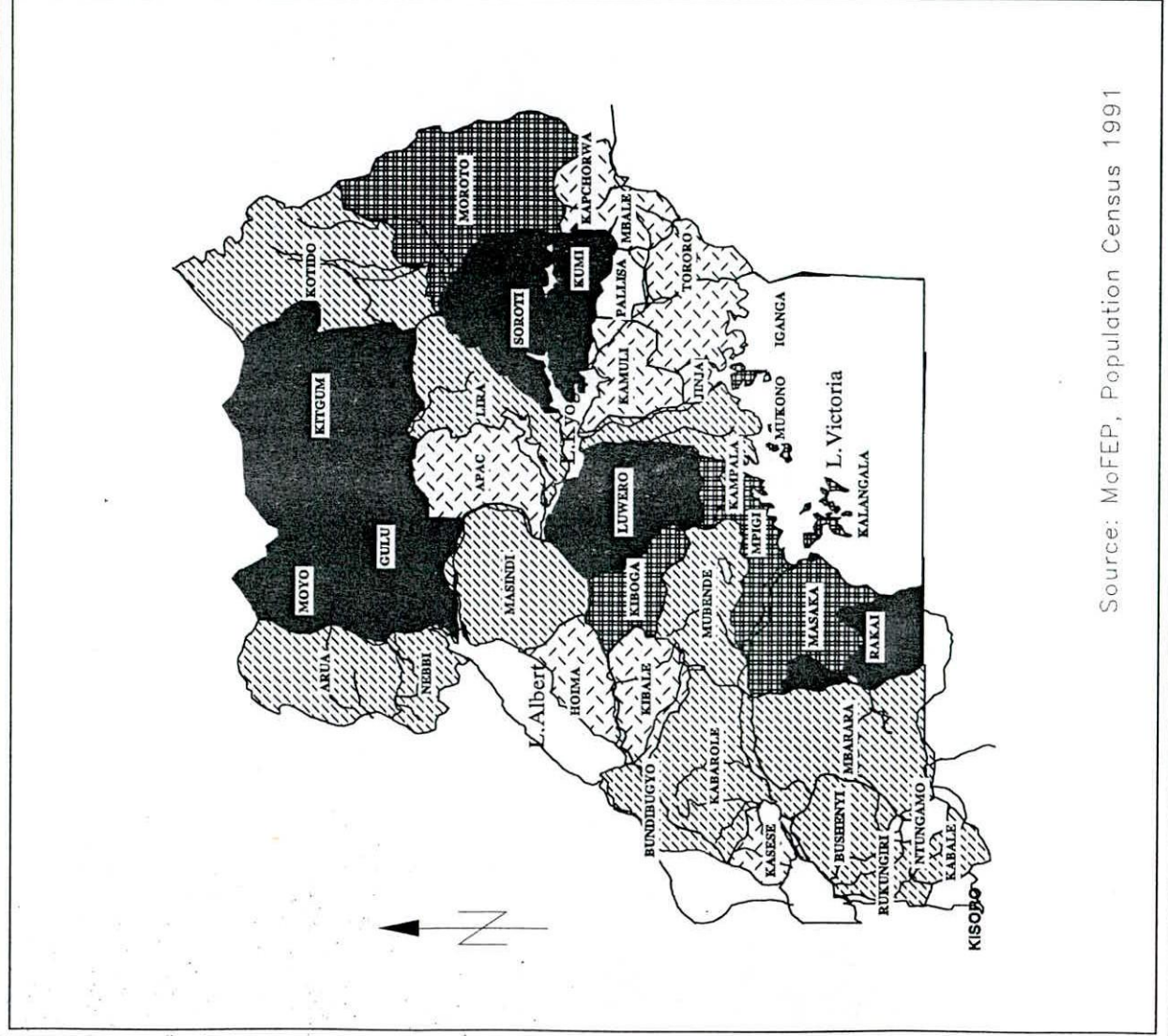
MAP 8.

Distribution of AIDS Cases per Million



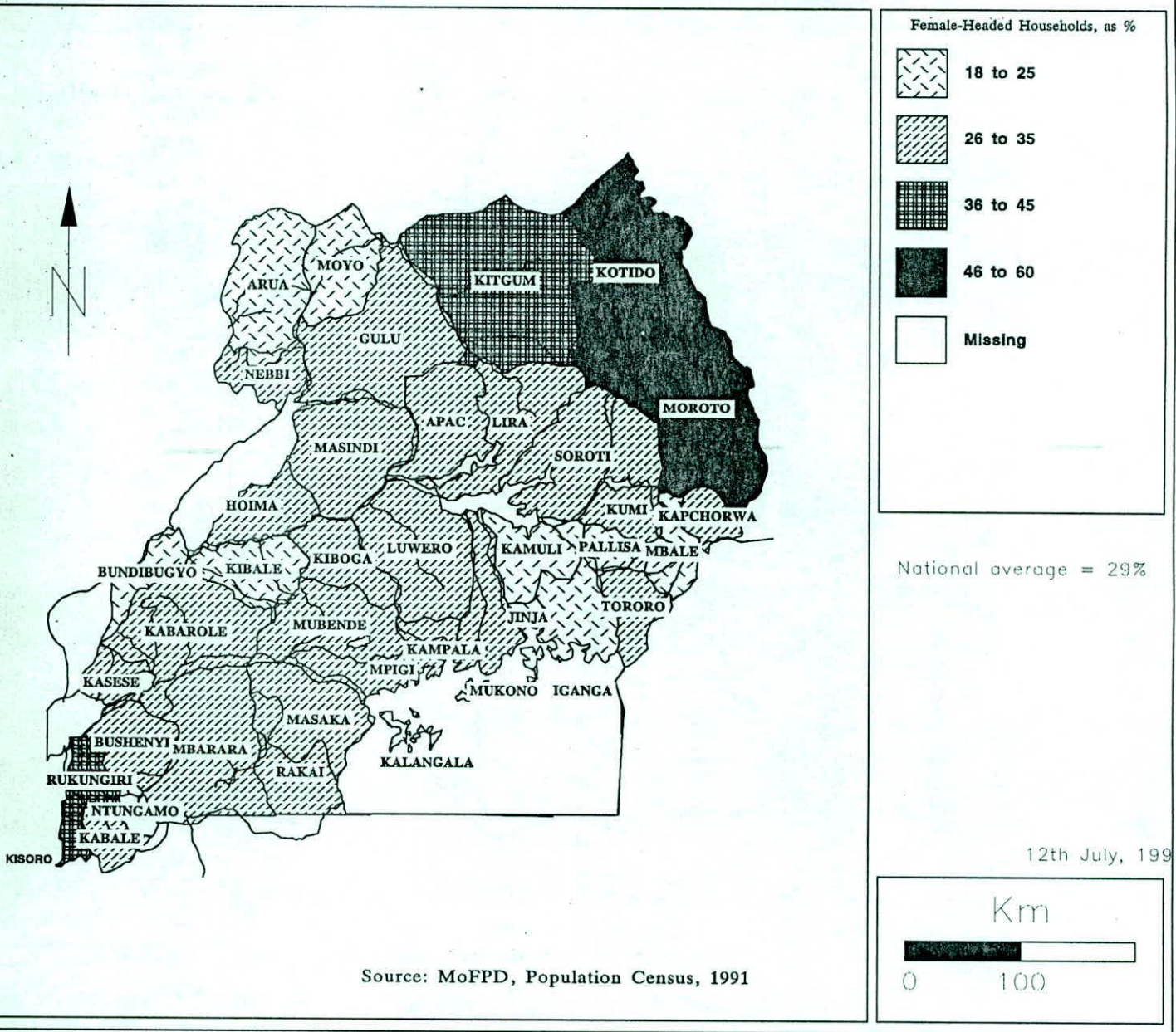
MAP 9.

Orphans (1 or 2 Parents dead)



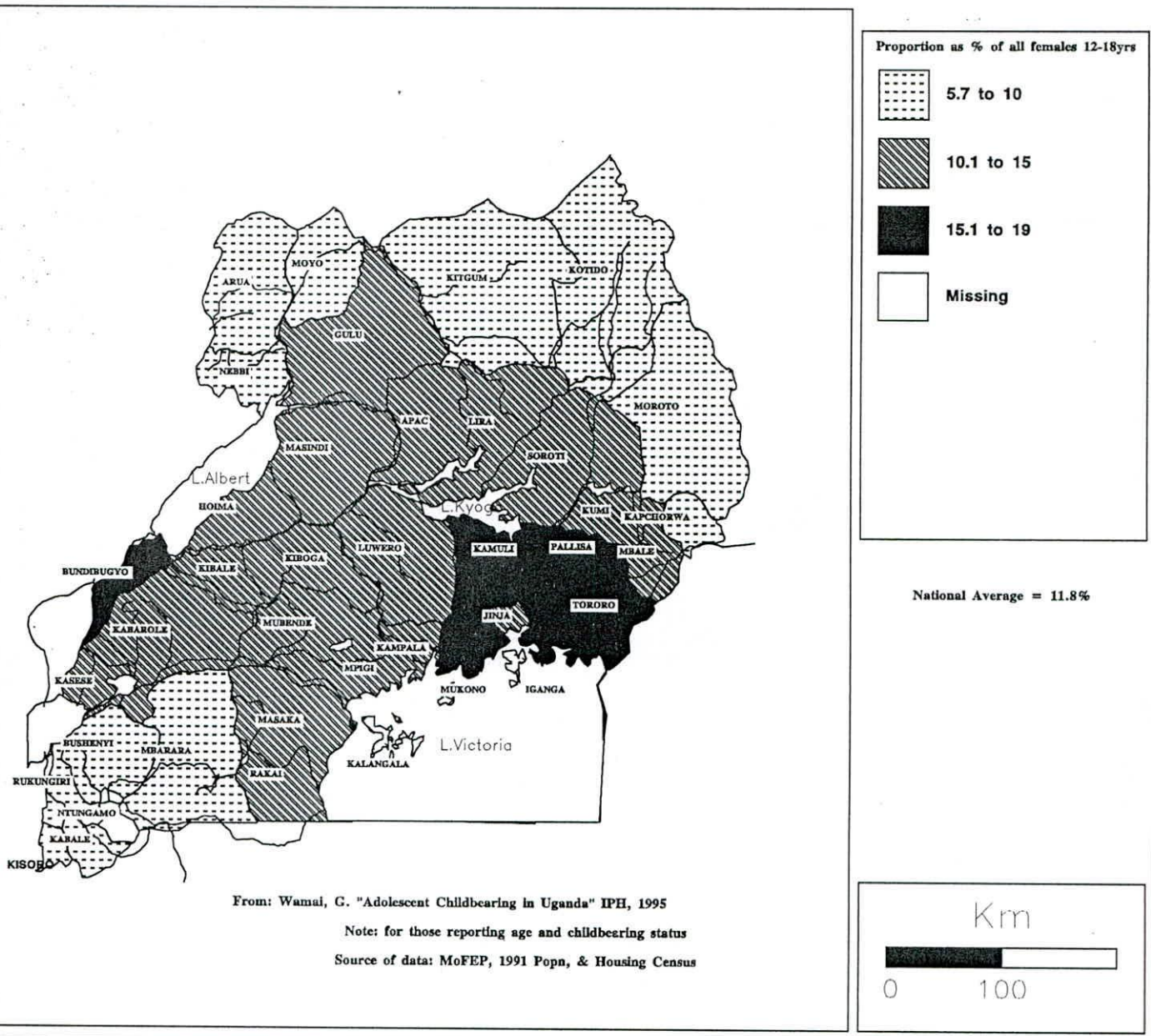
MAP 10.

Percentage of Female-Headed Households



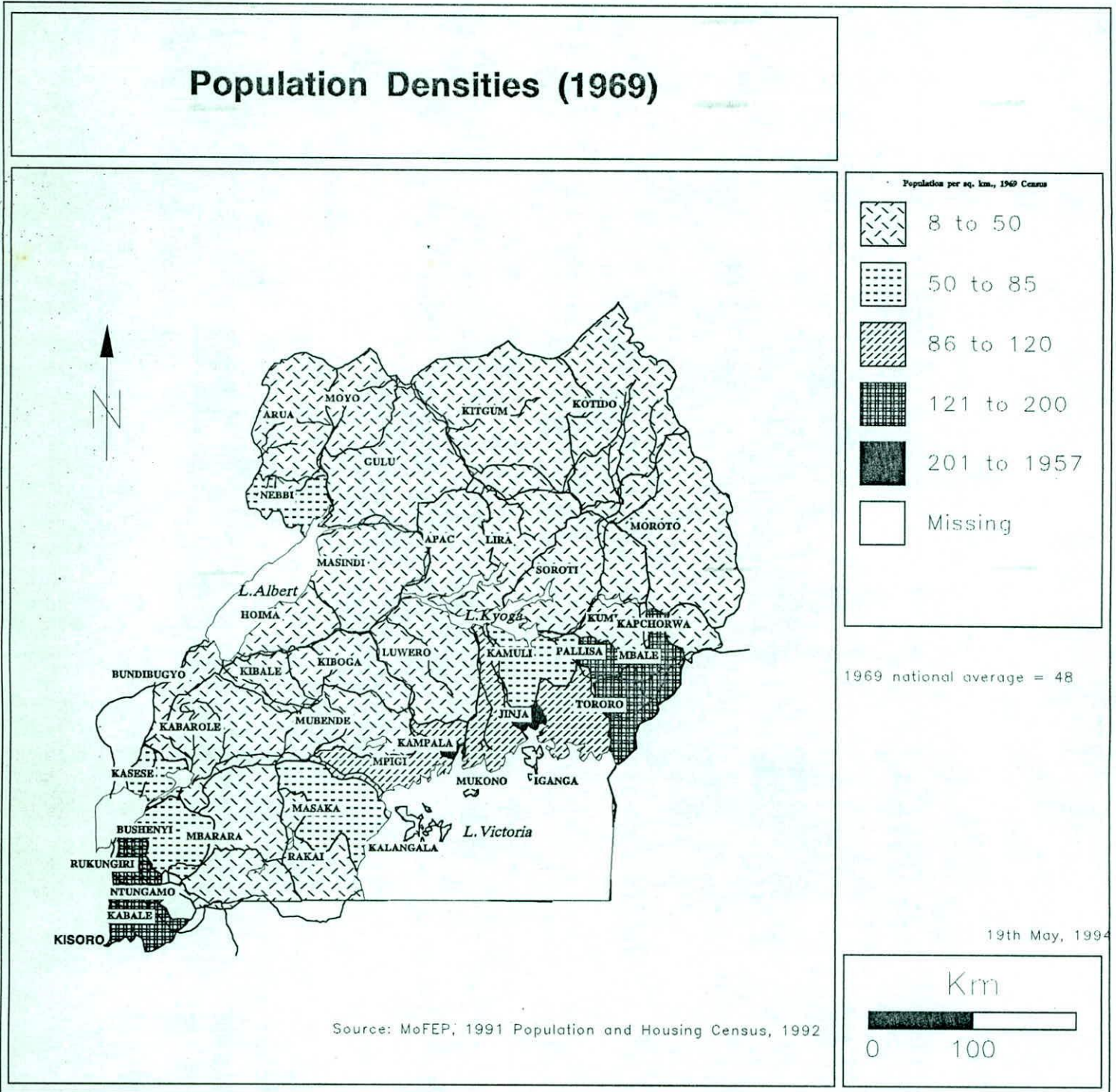
MAP 11.

Proportion of Adolescent Females (12-18Yrs)
Who reported having borne a child



MAP 12.

Population Densities (1969)



MAP 13.

Population Densities(1991)

