
 REVIEW ARTICLES

Rapid Population Growth and its Implication for Malawi

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Worldwide concern has recently focused on the negative aspects of rapid population growth for the future as regards natural and non-renewable resources, energy and the environment. A United Nations sponsored international conference on "Environment and Development" was held in Brazil in June 1992 to focus world attention on the situation. In Sub-Saharan Africa in general, and Malawi in particular, the crucial question focuses on whether technological responses will be sufficient to keep pace with or exceed the growth of the population. By considering only land, water, soil type and technology as constraints on agricultural output, research has suggested that, by using mechanization, modern fertilizers and improved seeds, most countries have substantial capacity to raise production. Of course, the most important factors in determining a satisfactory outcome are the availability of resources required to adopt the improved technologies, but also the policies and institutions created by governments that affect incentives to produce.

In terms of the empirical record, what has been the actual response of agriculture to population pressures, and the ensuing impact on labour productivity? In much of Asia the results have been positive and substantial as the Green Revolution has spread rapidly. With good conditions, acreage yields have doubled or trebled. In sub-Saharan Africa, the outcome has been less than satisfactory. For example, the average annual growth rate of agricultural output was only 1.3% between 1965 and 1980, and 1.8% between 1980 and 1988. In Malawi during the same periods, output grew at 4.1 and 2.7% annually, respectively. In terms of food production per capita using 1979-81 = 100, sub-Saharan Africa's index stood at 94 and Malawi's at 85 during 1986-8¹.

Before considering how current and prospective population growth is exerting intense pressures on

this country's land, food security and nutrition, income and employment, health and education, the complexity of both the causes and consequences of what is happening in many third-world areas needs to be emphasized. As concluded by A.C. Kelly after an extensive review of the theoretical and empirical literature:

*Population's adverse impact has most likely occurred where arable land and water are particularly scarce or costly to acquire, where property rights to land and natural resources are poorly defined and where government policies are biased against the most abundant factor of production-labour . . . Because there is no believable and generally accepted quantitative estimate of population's impact on development, only a qualitative (a direction-of-impact) assessment can be made. This assessment, positive or negative, varies from country to country, over time, and possibly with the rate of population growth. What is clear is that an assessment of the impact of population growth on economic development is highly complex, that problems like unemployment, famine, and malnutrition are caused by many factors (including rapid population growth), and that an emphasis on policies of slowing population growth without simultaneously confronting the other fundamental causes of such problems may well lead to disappointing results"*²

THE POPULATION DYNAMICS OF MALAWI

1. Historical Growth

The population of Malawi has grown rapidly since 1901 when it was estimated to be 737,000, with the crude birth rate at 55.2, the crude death rate at 34.1, and the resulting annual rate of natural increase at 2.2%. By 1987, the population had grown to 7,983,000, of whom about 338,000 were refugees fleeing from the civil war in Mozambique - with an intercensal annual growth rate (since 1977) of 3.3 %, resulting from a crude birth and death rates of 53.6 and 20.9, respectively. By 1991, the number of refugees had risen to 910,000³.

The increased annual rate of growth of the population over time, therefore, is the outcome of an almost constant crude birth rate and a long-run decline in mortality, resulting from better preventive and curative health care. If the total fertility rate of 7.6 in 1987 should remain constant, and mortality continue at its present level, due to the upsurge of

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malaria and the AIDS epidemic (both of which may offset the recent trend of falling mortality), then the number of nationals in the country could reach almost 12 million by the year 2000 (i.e. in 8 years time).

2. Fertility and Mortality

Fertility is extremely high in Malawi, with the national total fertility rate (TFR) estimated to be 7.6 births per woman in 1977⁴. Given the minimum changes that have taken place in underlying socio-economic structures since then, and that the 'modern' contraceptive prevalence rate is estimated to be still very low - at no more than 4% of women of child bearing age - it is unlikely that the TFR has fallen in the intervening years (Indeed, the 1982 Malawi Demographic Survey estimated the TFR to be 7.6). To endorse this claim, all the existing evidence shows a pattern of proximate determinants inducing high fertility. For example, marriage for women is early, stable, universal and largely monogamous. Almost all marry, half by the age of 18; remarriage is common and rapid following divorce and widowhood; and only one in five men over the age of 40 report having more than one wife. Child bearing begins early and the incidence of sterility is very low. While breast feeding is lengthy (average 18 months), post-partum abstinence is even shorter (6 months). Nearly a quarter of birth intervals are shorter than 2 years and 60% are less than the minimum 3 years recommended by the World Health Organization⁵.

Life expectancy at birth is estimated to have risen from only 37 years in the late 1950s to 41 years by the early 1970s, and is now put at 49 by the World Bank. Recent evidence from the Demographic Survey in 1982 and the Family Formation Survey in 1984 suggests that childhood mortality began a significant decline from the mid-1970s, extrapolated by the World Bank to give estimated current infant mortality and child mortality rates of 150 and just under 250 (one-quarter), respectively. They remain amongst the highest in the world, and are indicative of the widespread deprivation prevalent among large sections of the population. The causes of such high levels and their geographic variation have not been adequately researched, but they are, no doubt, partly attributable to the localised prevalence of malaria as well as the malnutrition caused by inadequate food supply of certain socio-economic groups in some hard pressed areas.

The normally expected decline in mortality may be temporarily interrupted by the speed and intensity of the AIDS epidemic, which is likely to have a major demographic impact even if the population changes its behavioral pattern in the next decade or so. The current HIV prevalence rate among

adults is conservatively estimated by the Ministry of Health to be about 10%, with the urban figure at double the overall average. The trends of recent past and near-future incidence rates of HIV infection will help to determine the nature of demographic change for decades to come.

All projections for the years 2000-2005 indicate a significant increase in the population of Malawi (Table 1), although their wide range is indicative of the great uncertainty entailed in any such exercise. Even with the lowest projection, the population would be over one-and-a-half times greater at the beginning of the twenty-first century than in 1987.

The population is unevenly distributed across the country with the Southern Region, containing one-third of the total land area and 39% of the arable land area, supporting almost one-half of the total population. Meanwhile, the Northern Region, containing 29% of all land and 20% of arable land, had only 11% of the total population in 1987. There are large district differences in population densities according to persons per square kilometre of arable land, ranging from a high of 299 in Blantyre district to a low of 44 in Mwanza district in 1977. Because of rapid population growth these densities are expected to have more than doubled over the subsequent 23 years to the year 2000. Persons per square kilometre of land will then be 126, ranging from 435 in Blantyre district to only 30 in Rumphi. In terms of arable land, this density is expected to have risen to 229 nationally and to range from 641 in Blantyre to 96 in Mzimba.

Table 1 Population projections for Malawi

Fertility & mortality assumptions	Projected population	Date
AIDS: constant Fertility and almost constant mortality (World Bank)	14,120,000	2005
No AIDS: constant fertility and moderate decline in mortality (House and Zimalirana)	12,823,000	2002
No AIDS: constant fertility and slow decline in mortality (National Statistical Office)	12,537,255	2002
AIDS 'Best Case': Constant fertility and moderate decline in mortality (House and Zimalirana)	12,332,000	2002
AIDS 'Worst Case': Constant fertility and moderate decline in mortality (House and Zimalirana)	12,092,000	2002

Sources of these projections are World Bank, 1991, Malawi Population census, 1977, and WJ House and G Zimalirana, Malawi's population dynamics: future prospects, Lilongwe 1992

Such rapid population growth, together with its concomitant changing age/sex structures and geographic redistribution, will exert tremendous press-

ure on the country's limited natural resources and essential services, as well as on the ability of its labour market to absorb so many newcomers into productive employment. In addition, such pressures will change the range of constraints and incentives facing individual households and whole communities and can be expected to influence demographic outcomes, albeit with a considerable time lag.

POPULATION GROWTH AND RELATIVE DEPRIVATION

According to a 1989 World Bank study, poverty in Malawi is 'predominantly rural' and 'conservatively encompasses about half of the population'⁶.

1. Nature and Extent of Poverty

The World Bank identifies two categories of poverty: the poor and the 'core poor'⁷. Since the poverty line is based on minimum nutrition requirements from food - estimated at 200 kg/year of the staple maize for an adult, costing roughly \$40 per capita per annum - 55% of the population can then be categorised as poor, including the 'core poor' who total 20%.

The poverty line is constructed for three types of households: smallholders, estate workers, and urban. About 60% of the first group fall below the poverty line, including over 20% that can be classified as 'core poor'. In the absence of income data about smallholders, poverty is estimated on the basis of the size of their agricultural plots. The 'core poor' farm less than 0.5 hectares, while other poor households are defined as those with 0.5-1 ha. plus one-half of those farming between 1-1.5 ha. About 50% of both labourer and tenant estate households are classified as poor. However, because they are generally larger in size than other households, the poor make up about 65% of the total population in this category. Meanwhile, about 7% of urban households and 9% of urban residents are classified as poor, based on the latest figures in the 1979-80 Household Expenditure Survey⁸.

Thus, according to these nutrition-based poverty lines, about 51% of all households and about 55% of persons are poor, while about 20% form the core poor, implying that they attain at least one-third less than the minimum recommended nutritional intake. Equally significant, female-headed households are over-represented among the poor and 'core poor'.

2. Causes of Deprivation

Six major contributing factors can be hypothesized to cause relative deprivation in Malawi.

- Limited employment opportunities in the labour market;
- Low physical productivity of land and labour, which entails restricted quantities of co-operating factors of production, such as capital and technology, to accompany the rapidly growing labour force;
- Low levels of human capital, which includes nutrition and health status, basic education, training and cognitive skills;
- Limited access to land and economic rents, the latter emanating from the restriction on smallholders growing burley tobacco, the country's principal cash crop and foreign exchange earner;
- Minimum income and in-kind transfers from the state to the most vulnerable; and
- Rapid population growth which exerts pressure on land resources, the labour market and the provision of social services.

Let us now consider how past and current population dynamics have contributed to the generation or alleviation of poverty by adversely or otherwise interacting with the economic and social sectors of Malawi. How has rapid population growth at the macro-level affected the poorest segments of the population, and to what extent has it been responsible for their plight? And, despite the lack of empirical documentation at the micro-level, how have households responded to their poverty status in terms of their demographic behaviour? What are the implications of the on-going demographics for the future?

POPULATION GROWTH AND THE SECTORAL IMPLICATIONS

1. Land, Food Security and Nutrition⁹

The projected numbers of small holder households in each category of land size in Malawi have been arrived at as follows. The Malawi citizen population according to the 1987 census is 7.65 million, projected to reach 8.4 million in 1990. Since five is believed to be the mean size of all households, they total 1.68 million, of which 89% or 1.5 million are in rural areas. After subtracting the estimated 200,000 households of tenants and wage-earners on estates, the number of smallholder households in rural areas is 1.3 million - confirmed by a 1989 World Bank study⁶. According to these calculations the total land cultivated by smallholders in 1990 is 1,431,000 hectares which is a little less than the 1,440,000 hectares of

1,474,000 hectares as the area under customary land for crop production¹⁰.

How will changes in the size of the population affect the holdings of small farmers, and how much more land needs to be brought under cultivation? The World Bank's projected population of almost 12 million (assuming a slow decline in fertility and a small rise in life expectancy, and no AIDS) with a mean household size of five, gives a national total of 2.4 million households, or 2.0 million in rural areas (assuming that 85% of the population lives there, 4 percentage points less than in 1990 due to rural-urban migration). Given that 15% will be living on estates (another assumption), the total number of rural smallholder households will be 1.7 million by 2000.

Assuming the percentage of households in each land size category is the same as in 1990, a total of 1,859,410 hectares will be required for the projected population by the year 2000. An additional 437,520 hectares will be needed to be brought under cultivation in order to keep the same land distribution.

Given this increase in the number of Malawians, and assuming that there is no possibility of raising the total availability of land to smallholders, the projected mean holding of each land category provides an indication of future pressure due to population growth. In this case, mean land holding falls from 1.09 Ha to 0.84 Ha with all categories experiencing a decline in farm size. In practice, however, the smallest are likely to experience the largest reduction, with severe implications for poverty generation. One likely outcome is that the number of landless persons will rise dramatically. Even then, the 442,000 households with a mean landholding size of only 0.19 Ha will be effectively landless and very likely in a state of poverty. Unless other underlying factors should change - e.g. greater access to land for the smallest landholders, or more off-farm employment - this is a clear case where rapid population growth will add to the severity of the poverty problem.

2. Population and Food Sufficiency

Given that each adult requires about 3 bags (90 kg) of maize per year to meet the minimum food requirements with adequate calories, this amounts to 945 kg/year/household with two adults and three children. With a population of almost 12 million by the year 2000, as much as 2,268,000 tonnes of maize will be needed annually for national food self-sufficiency; namely 841,000 tonnes more than the current output. How can this be derived? From past production trends it is believed

that 70% of the total cropped area is under maize, of which hybrid varieties account for 8%. Thus:

Total land held by smallholders	=	1,421,890	hectares
70% of this land is under maize	=	995,230	
8% of this maize is hybrid	=	79,630	
The local maize hectareage	=	915,690	

Using national average yield figures of 961 kg/Ha for local maize and 2,587 kg/Ha for hybrid maize the production of maize is as follows, assuming a normal year:

Local maize	=	79,980	tonnes
Hybrid maize	=	206,000	tonnes
Total output by smallholders	=	1,085,980	tonnes

Given the projected requirement of 2,268,000 tonnes of maize by the year 2000, and assuming the smallholder farmers continue to be responsible for 76%, they will need to produce 1,724,000 tonnes; namely, an additional 638,000 tonnes from their same land resources. If hybrid continues to be grown on 8% of all hectareage under maize and to contribute one-fifth of total output, then smallholders will need to produce not only 326,900 tonnes of hybrid, but also 1,396,700 tonnes of local maize; namely 59% more than their present 879,980 tonnes.

Evidently, without major technological changes in this sector, including new varieties of seeds and additional fertilizers, there will not be enough staple food to meet the subsistence demands of a rapidly growing population. In other words, there will be even more than the 1 in 2 smallholders already identified as poor.

On the other hand, a partial switch into hybrid maize by smallholders could alleviate most of the shortfall. For example, since the yield of hybrid (2,587 Kg/ha) is as much as 1,626 kg/ha more than local maize (961 kg/ha), the additional 516,700 tonnes of local maize to be produced by smallholders by 2000 could be achieved by bringing another 317,840 hectares under hybrid cultivation. Such an expansion of 300% in just 10 years would still only amount to 22% of all the land currently available to smallholders.

Increases in the use of fertilisers and irrigation could be analyzed in a similar fashion, since they would also help to counteract the negative effect of a rapidly growing population and the concomitant impact on poverty. Such improvements would, of course, help to reduce the need for hybrid expansion to a level less than that projected here.

3. Income and Employment Opportunities

Rather obviously, the key to poverty alleviation in Malawi lies in the realization of a rapid increase in income and employment opportunities. Indeed, for a number of years the creation of jobs will need to exceed the rate of growth of the labour force in order to make good the backlog, and to absorb the 50% or more of smallholders already identified by the World Bank as living below the subsistence or poverty level.

The future size of the country's labour force can be calculated by applying the most reliable and latest available participation rates of age and sex (as given 1977 census) to our population projections. Assuming moderate mortality decline, constant fertility and unchanged rates of participation, the nature of the employment problem facing Malawi is illustrated by the growth of over one-third in the size of the labour force in the 1987-1997 period, from 2,870,000 to 3,930,000. Where are newcomers likely to find productive employment? What is likely to be the absorptive capacity of the various sectors by, say, 1997?

Assuming optimistically that employment in the formal sector grows at 5% per annum (higher than the 3.7% realized between 1977 and 1986), as shown in Table 2, then 202,800 new jobs would have been created by 1997, with 212,300 unsuccessfully trying to find work if the rate of unemployment is maintained at its 1983 level of 5.4%. This would still leave as many as 543,600 seeking new jobs elsewhere. Of these, only about 55,300 would be found in the informal sector if this also expanded at 5% annually over the 7 year period to accompany increasing urbanization. The balance of 488,300 additions to the labour force would need to be absorbed in the already overcrowded smallholder farming where over half fall below the poverty line.

These data suggest that the subsistence sector will need to find almost half a million places for new entrants over a 7-year period. If each household (averaging five persons, three of whom are in the labour force) were allocated a minimum of one hectare (considered to be the absolute minimum to grow enough staple maize to be self-sufficient), then the amount of land accessible to smallholders would need to rise from its present 1,422,000 hectares by almost 12% by 1997. This ought to be thought of as the absolute minimum increase, since the growth in formal and informal employment may not match the rather optimistic scenarios suggested above; nor is one hectare really adequate to ensure a satisfactory quality of life, given present technology.

Table 2 Absorption of new labour force entrants by 1997

Sector	Number	Assumed/IMPLIED annual percentage growth rate (% pa)
Formal Sector (including Estates)	202,800	5.0
Unemployed	42,600	3.3
Informal Sector	55,300	5.0
Residual - Absorbed in Smallholder Farming	488,300	2.8
Total Increase in Labour Force 1990-1997	789,000	3.3

4. Population Growth and Education

Education develops the skills necessary for sustainable economic growth and for a better quality of life. But despite significant achievements since independence in 1964, especially in the absolute level of enrolment in primary schools, the education system in Malawi faces an unprecedented challenge. For example the World Bank estimates net enrolment to be only 43% of children of primary-school age, compared with 70% in sub-Saharan Africa⁷. Rapid population growth has resulted in more children than ever seeking places in schools already pressed for resources because of the financial constraints of the 1980s which led the country to embark on an IMF/World Bank Structural Adjustment Programme (SAP) of economic recovery. According to the Education Development Plan 1985 - 1995, demand currently exceeds supply - not least because of the positive response of parents to appeals by political leaders and educators to send their children to school - and this pattern is likely to persist well into the next century. Nonetheless, even with a 53% net enrolment rate, as estimated by the Ministry of Education, the quality of education has fallen as classrooms have become overcrowded and teaching materials more scarce. Dropout and repetition rates have also increased over time.

There has been a modest but steady increase in enrolment of girls over the past decade, from 40.5% of the total in 1978-9 to 44.3% in 1987 - 8¹¹, but they continue to leave earlier and in greater numbers than boys because of lack of guidance and/or school fees, biased parent/teacher attitudes and early pregnancies. About 29% of girls drop out after Standard 1, compared to 23% of boys. In addition, there are many 'repeaters' every year. Indeed, by Standard 8, nearly 51% of girls and 77% of boys are likely to have repeated at least once in their school career, assuming entry at age 7. As for the next step in the educational ladder, since 1979

only 4.5% of all those of secondary-school age have gained entry to Form 1.

Constraints in the system are widespread, especially at the primary level. Apart from shortages of desks, other furnishings, and text books, the training of teachers, although dramatically expanded, has simply not kept pace with increases in enrolment, so that the staff/pupil ratio is around 1:88 pupils, reaching as high as 1:120 in urban areas - so that schools often operate on morning and afternoon shifts, and even then some classes have to meet outside under trees. It is not unusual for Standard 8 to have two or three streams just for 'repeaters', worsening the lack of accommodation and furniture.

Out of the 110,987 who sat in 1988-9 for their Standard 8 Primary School Leaving Certificate, 65.9% passed and laid claim to the 7,046 available Form 1 places. In other words, only 6.3% of those in Standard 8 were able to begin their secondary education. What happens to the unsuccessful 93.7% of total entries for the examination is a crucial question that remains unanswered. Even if the 'distance education' absorbs some, and others go into private schools, the system still leaves the mass of the population under 14 years of age grossly under educated. Not surprisingly, significant numbers of Malawians are illiterate. In 1987 only 55% of the population could read and write, the majority of whom were men¹². The implications for socio-economic development must surely be profoundly negative.

Despite heavy investments in education during the 1980s, real per capita spending on education fell by 40 per cent, mainly because of the rapid rate of population growth. Meanwhile, the Government has recently committed itself to increasing education's share of its recurrent budget from less than 10 to 15% by 1995/6. It should be noted that the share of this sector in the GDP at market prices has been declining over time: 3.0% in 1980-1, 2.6% in 1983-4, and only 2.4% in 1989-90. Education is recognized as being absolutely essential for the attainment of certain national strategic objectives, such as increasing agricultural productivity and employment, reducing infant/child mortality and morbidity, and increasing life expectancy at birth. In contrast, inadequate education means that people cannot learn to absorb new information, to formulate and evaluate alternatives, and apply knowledge to solve problems, thereby retarding the opportunities of many demographic groups to enter the more productive segments of the labour market. It looks as if those who do not gain a minimum of 3 or 4 years of basic primary education - the great majority of Malawians at the present

time - will be condemned to a life of severe deprivation.

Set in the context of limited natural resources and restricted opportunities to raise revenue to spend on social services, Malawi's rapid population growth ensures that the goal of universal primary education will remain unattainable for the foreseeable future, as for the rest of Africa. For example, the relevant age cohort will have grown from 1,720,000 in 1987 to at least 2,500,000 by the year 2000. Just to maintain the currently low enrolment rate the number of places will need to increase by 52%; for all to be in school in 2000 would require the number of places to be expanded by almost 200%, or 8.5% annually, a near impossible task.

5. Population Growth and Health Services

The Government has stated that three variables will determine the development that can take place in this field during 1987-96: 'the current health and population situation, the resources which can be made available to this sector, and the implementation capability of the Ministry of Health'¹³. Given the ubiquity of health problems as reflected in the high incidence of preventable morbidity and infant and child mortality, what is the relationship between the rapid rate of population growth and its negative impact on possibilities of achieving widespread access to quality services?

About 80% of the population is estimated to live within eight kilometres of a health facility and utilization is high. Immunization coverage is over 80%, children under five years visit the health system not less than four times a year, and 85% of pregnant women have at least one antenatal examination¹⁴. However, there are shortages of essential drugs from time to time, an acute need for more trained doctors, registered nurses, and medical assistants, and much overcrowding in most hospitals. It seems that the system is falling short of meeting the demand for 'child spacing', so essential in reducing the prevailing high level of fertility, as evidenced from the Family Formation Survey carried out in 1984¹⁵. Thus, despite such a sound infrastructure on the ground, health conditions are still unsatisfactory.

Malaria and inadequate nutrition are the major factors causing the high infant and child mortality, the reduction of which would go a long way towards improving overall life expectancy. In recent years the prevention of AIDS has become an urgent priority for the government: the number of reported cases has reached 15,000 (considered a gross underestimate), with HIV-infections amounting to over 450,000.

Progress in the health sector needs to be supported by intensive efforts to alleviate undernutrition, and to raise the level of literacy, particularly for women. Educated mothers tend to have healthier and better nourished children, lower fertility and higher productivity. There is need to control malaria, and various water-related diseases, to encourage community-based preventive treatments, and to promote 'child spacing' as the most cost effective approach to reducing infant and maternal mortality, as well as the rapid rate of population growth.

The health services in Malawi are provided by a cadre of workers ranging from doctors to supporting staff of all kinds. In 1984, about 85% of all established posts were filled, namely 4,233 out of a total of 4,962, but the situation has deteriorated since then, especially in laboratory and pharmaceutical services. The Government's National Health Plan 1987 - 1996 broadly outlines basic minimum manpower requirements by 1995. These indicate a need for the following percentage increases: doctors (27); laboratory technicians (60); clinical officers (74); nursing (95); and dental staff (139); and pharmacists (370). Considering the rate of population growth, these projections will need to be revised upwards if improvements in the quality of the services provided are to be realised. Given the limited resources available, including the constraints on local training facilities, the staffing outlook is not very promising. Indeed, the planned targets appear to be conservative bearing in mind that there will be nearly two million children requiring basic services provided to the under-fives, as well as nearly 600,000 pregnant women seeking pre- and post-delivery care.

The first batch of final year medical students returned in 1991 in order to complete their medical training in Malawi, and others are expected to follow at the annual rate of 20 during the next five years¹⁶. Although this will dramatically improve the number of doctors, Malawi will have to continue to expand its middle-level health manpower training for a long time to come. This could be successfully completed only by enlarging some existing paramedical programmes, and by revising the curricula to suit the needs of the nation, notably by greater and more detailed attention being given to 'child spacing'. Indeed, all training institutions should help to disseminate greater knowledge about the problems of population expansion in relation to the social services.

How can the health system be expected to provide adequate care given that expenditure per capita was MK 12.9 (US\$4.45) in 1991, and only planned to rise to MK 13.1 for 1995-96? How will this sector perform in the face of the current rapid

growth of population? According to fiscal analysis of the 1983 to 1987 health budgets, 82% was spent on hospital-based care, 12% on administration, and only 6% on preventive programmes. This classification of expenditure, however, does not reflect a true picture in the sense that many hospital-based services include immunization, health education and child spacing campaigns, and that all the hospitals and rural clinics with in-patient facilities also serve as referral centres for peripheral primary health-care units. Nevertheless, the relative budgetary share of curative health care activities needs to be increased.

As part of a reorganization of the health system the government has proposed basic changes in the administrative structure as well as a number of policy reforms, some dictated by on-going SAP measures. One of the most important proposals is to revise the fees for private patients, and to implement cost sharing in all health units, thereby helping to meet the planned budgetary increases. Other suggested changes include the appointment of health educators in all districts, decentralisation of planning and budgeting, and expansion of the health-surveillance training programme.

If deprivation, as measured by the mortality and health status of Malawians, is to be reduced, more resources of all kinds will be required. But their attainment requires integrating the country's population dynamics into national health planning, and this means that various future scenarios be considered, particularly those for the remaining years of the twentieth century. Only then can adequate plans be made to meet the need for enough manpower, institutional facilities and supplies adequately to protect and treat the ever increasing number of inhabitants. The prevailing poverty of the majority of households means that they will be unable to pay for the most basic and essential health services.

CONCLUSIONS

Given Malawi's lack of resources and present stage of development, it is fairly safe to conclude that the rapid growth of population is exerting extreme pressures on land, employment, education, and health and hence on the nation's ability to satisfy the most basic of human needs. Other areas of concern which need to be more fully investigated include urbanization, forestry, wood energy resources and the environment, housing, transport, and water and sanitation. All are experiencing intense pressures from the increasing population, thereby adding to the number of households whose condition is sufficiently vulnerable for them to fall

below the poverty line. A mere description of the existing situation is not enough; the socio-economic and demographic characteristics of the poor have to be identified and just as importantly, attempts must be made to unravel the main causes of their poverty. This needs to be analyzed in a conceptual framework that emphasizes, among other things, the importance at the household level of population dynamics and their complex interrelationship with other socio-economic factors. No doubt many of these complexities cannot be documented, let alone explained, because of the need for more facts and figures. But such a finding merely endorses the significance of the on-going research that is taking place in Malawi, including that initiated by the authors in the Population and Human Resources Development Unit in the Office of the President and Cabinet.

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