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IMPROVING NUTRITION IN TANZANIA IN THE 1980s: THE IRINGA EXPERIENCE

Olivia Yambi[1] and Raphael Mlolwa[2]

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[1] Tanzania Food and Nutrition Centre, Dar es Salaam.
[2] National Planning Commission and the National Coordinating Committee on Child Survival and Development, Dar es Salaam.

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EXECUTIVE SUMMARY

Tanzania began to pursue egalitarian policies during its first decade of Independence through the expansion of social service infrastructure, especially in health care and education. By 1980, 70 percent of the population lived no further than five kilometres from a health-care facility, and by 1989 the adult literacy rate stood at 91 percent and the primary school enrolment rate was 84 percent. The Government financed the efforts behind these accomplishments, while communities, in line with the policy of self-reliance, made in-kind contributions, especially labour.

More recent economic adjustment measures have threatened the gains achieved in the delivery of social services during the past quarter century. Expenditures on health care and education have dropped in absolute terms. The share in total expenditure of health care has been around 6 percent, while that of education fell from 13.5 percent in 1980/81 to 11 percent in 1989/90. Physical infrastructure has therefore deteriorated, and households and communities have been called upon to absorb an increasing portion of the cost of social services.

In order to cushion against further deterioration, the Economic and Social Action Programme has been instituted for the period 1989/90-1991/92. The nutrition status of the population is considered one of the basic indicators to be monitored in this initiative.

A comprehensive nutrition programme has been undertaken in Iringa region since 1984. The main objective of this programme is to reduce child and maternal malnutrition. A principal process objective is to raise capabilities at all levels in the assessment and analysis of the nutrition problem and the design and implementation of resource-relevant actions. The programme combines the supply of key services, training, a nutrition information and monitoring system, child care interventions, food security and water and sanitation. At the start of the programme the rate of severe malnutrition among under-5-year-olds was around 6 percent, while moderate malnutrition was affecting about 50 percent of the under-5 population. Within four years severe malnutrition had been cut to below 2 percent, and moderate malnutrition to 35 percent. These successes have been attributed to the intervention, and they have been achieved despite the overall slump in the economy and in social service financing.

Because of the positive results in Iringa, a number of regional basic service programmes have been reoriented to profit from the "Iringa approach". As in Iringa, malnutrition has subsequently declined in these programme areas despite the relatively poor economic situation.

The core elements for the realization of the Iringa programme have been identified as social mobilization, training and community-based information and monitoring systems. The early provision of critical services has also been found to be important.

Initially, the "ongoing" cost of the Iringa Nutrition Programme averaged $8 per child per year, which is within the range of costs of programmes having a demonstrated nutrition impact. Experience from several area-based programmes in the country has shown that costs can now be lowered, and critical elements can be implemented for approximately $2.55 per child per year.

The Iringa Nutrition Programme has relied heavily on donor support, which covered 82 percent of the total programme expenditure for the period 1984-7. Community contributions have also been very important, amounting to 66 percent of the national input into programme funding.

The success of the Iringa Nutrition Programme has encouraged the appearance of other programmes with clear goals in nutrition. It has also led the Government to allocate growing financial support for such programmes. Meanwhile, a national food and nutrition policy has been adopted. It assigns a major role to nutrition status indicators in the monitoring of development in Tanzania.

I. INTRODUCTION

This paper will review and analyse the experience of Tanzania in its attempt to confront the nutrition problem during the 1980s. The examination will be set within the context of the policy framework in Tanzania and will also include an evaluation of the opportunities for intervention presented by the Iringa Nutrition Programme and the subsequent consolidation and expansion of child survival and development programmes in other regions of the country. While the major focus of this paper is protein-energy malnutrition, national efforts to deal with the problem of micronutrient-deficiency and iodine-deficiency disorders will also be described. Finally, the lessons to be drawn from the experience of Tanzania that are applicable both to nutrition programming and to resource mobilization will be outlined.

Nutrition and Social Services

The social services sector essentially covers the areas of health care, education, water supply, housing and social security. Nutrition is not a sector per se, but rather a process and an outcome which are influenced by actions in the various sectors. In particular, actions in the social services sector are likely to influence the situation in nutrition directly.

The public spending for social sector programmes is liable to cuts, especially during periods of economic adjustment. Many developing countries had to reckon with this fact during the 1980s. That adjustment measures have had serious negative consequences, especially among the most vulnerable groups, is being recognized. Thus, steps have been taken to institute "social funds" and create programmes aimed at "adjustment with a human face", or, as in the case of Tanzania, to develop a "Priority Social Action Programme" to dampen the negative effects of adjustment (URT 1989a).

Lessons emerging from experiences during the 1980s show that efforts to eradicate poverty and sustain human development must focus on progress in the social sector, including especially health care, education and processes for the improvement of nutrition (World Bank 1990a). The reduction of malnutrition, undernutrition and micronutrient deficiencies has been spelled out as a clear goal of the 1990s and forms part of the "Declaration of the World Summit for Children" (UNICEF 1990a). The targets are set for the 1990s: to slash the incidence of protein-energy malnutrition by one-half, to decrease the rate of low birthweight to less than 10 percent, to diminish the incidence of iron deficiency anaemia by one-third and to eliminate iodine deficiency disorders and vitamin-A deficiency

and its consequences. These targets have been established based on experiences in the 1980s that demonstrated the feasibility of programmes designed to address the nutrition problem successfully and lower the incidence of malnutrition significantly (UNICEF 1990b). Such programmes are also generally within the reach of the resources available to communities.

The Nutrition Problem

The emphasis on outcome has helped to shift attention toward the usefulness of "nutrition status" as a key indicator to measure the effects of development. Nutrition as an outcome depends on interacting processes. The relative importance of the various factors which generate poor nutrition status may differ case by case. However, the immediate causes of malnutrition are invariably disease and inadequate dietary intake. Experience with the analysis of the nutrition problem in different settings has shown that disease and inadequate dietary intake are in turn the result of factors which may be grouped into three main clusters: household food insecurity, inadequate health care for women and children, and insufficient health-care services combined with an unhealthy environment. Within these three clusters lie the roots of malnutrition. These underlying causes are themselves conditioned by the availability of resources, including human, organizational and economic resources at the different levels of society.

Obviously, the problem of nutrition is a complex one. But so is the problem of identifying appropriate programmes and resources to meet the challenge of malnutrition in specific country settings. The efforts of the 1980s to understand the nutrition problem contributed to an acceptance of the role of economic, political and social factors in causing malnutrition. In its examination of pertinent actions, the Sub-Committee on Nutrition of the United Nations Administrative Committee on Coordination has determined that agricultural programmes, employment and income generation, health care, social welfare, water and sanitation, social security, "empowerment" initiatives and education are all germane to improvements in nutrition (Gillespie and Mason 1990). Whether nutrition-relevant actions are part of support-oriented development strategies or part of growth-oriented development strategies has been a point of debate in the ACC-SCN discussions. However treated, adequate nutrition and health status needs to be approached as a basic human right for all to enjoy. Improvements in nutrition should therefore not be justified only to the extent that they raise productivity and learning capacity, even though these outcomes are important on their own.

The emerging development paradigm reflects a changing view of the role of the poor, particularly poor women, in poverty alleviation (UNICEF and WHO 1991). This has an application in the area of nutrition improvement that is reflected in the emphasis on the process element in programme implementation.

II. THE CONTEXT: ECONOMIC TRENDS AND POLICY SHIFTS IN THE 1980s

The Policy Environment

The implementation of actions aimed at reducing undernutrition in Tanzania has been guided by national strategies and policies in which health care, education and economic considerations have figured prominently. The emphasis on universal access to basic social services has increased especially since the Arusha Declaration of 1967. Selected indicators of the situation in Tanzania are shown in Table 1.

1. **Health policy** has played a key role in the implementation of programmes designed to improve the nutrition status of the people. Especially since the Arusha Declaration of 1967, development policy in Tanzania has concentrated on rural areas. Thus, the health programme for the period 1972-80 limited further growth in the urban health-care infrastructure. Instead, resources were to be deployed for the rapid expansion of rural health facilities and the training of paramedical personnel to manage and run these institutions. While there was no new investment in hospital construction, the number of dispensaries rose from approximately 1,500 in 1973 to around 2,700 in 1989. A comprehensive maternal and child health programme was started during the 1970s, and 18 schools were opened for the training of maternal and child health aides. By the end of 1989, 4,500 of these aides had been trained. A national primary health-care strategy was adopted in 1983.

Through these steps, a network of health-care institutions with good coverage of rural areas was created. In 1980 over 70 percent of the population was within five kilometres' walking distance of a health-care facility. The primary health-care strategy also provided for the training of village health workers, including the framing of a curriculum. The cadre of village health workers has since become a very important aspect of community initiatives to address the nutrition problem.

Table 1: TANZANIA: SOME BASIC INDICATORS[a]

Area (square kilometres)	945,000
Total population (1988)	22,533,758
Perinatal mortality rate (per 1,000 live births, 1988)	70
Infant mortality rate (per 1,000 live births, 1988)	104
Under-5 mortality rate (per 1,000 live births, 1988)	176
Maternal mortality rate (per 1,000 live births, 1988)	200-400
Percent of 1-year-olds immunized (1988/89)	
Fully immunized	83
Anti-tuberculin (BCG)	85
Oral polio virus (OPV3)	82
Measles	83
Rate of low birthweight (%)	14
Anaemia rate (% of population with Hb < 10g/dl)[b]	32
Iodine deficiency disorders (% of population)	25
Vitamin-A deficiency (% of population)	6
Growth monitoring and promotion (% of children, 1988)	75
Population within five kilometres of a health facility (%, 1980)	70
Primary school enrolment (%, 1989)	84
Adult literacy rate (%)	91
GNP per capita (in dollars, 1988)	160
Takehome pay spent on basic food at minimum wage (%)	55
Average percent adequacy of food energy (kilocaleries/capita/day, 1984-9)	110

Sources: URT and UNICEF (1990), TFNC (1990a).

[a] "Tanzania" officially refers to the union of "Tanzania Mainland" and Zanzibar. However, unless otherwise indicated, "Tanzania" refers throughout this paper, as in this case, only to Tanzania Mainland.

[b] A haemoglobin level below 10 grammes per decilitre is indicative of anaemia.

As part of the strategy to increase access to formal health care, no fees are charged for Government health-care services except for optional admission to Grade 1 and Grade 2 hospital wards. The payment of a minimal fee has also been retained by mission health-care facilities. Reliance on traditional healers remains widespread, and many deliveries are still

assisted by traditional birth attendants. Payment for these services may be in cash or in kind. Rural health-care facilities are furnished with medicines through the essential drugs programme. The cost of these drugs is estimated at $0.50 per person per year. The health-care sector suffers from a general lack of supplies and equipment.

The Government has also worked toward the provision of safe water within easy reach of all. A 20-year programme was introduced in 1971. The share of the population with access to safe water jumped from 13.5 percent in 1970 to an estimated 47 percent in the 1980s. Community participation was significant during the initial construction of the water supply system, but maintenance problems due to inadequate training have surfaced since then.

2. **Education policy**. Great strides have been made in education in Tanzania since Independence in 1961. In the late 1960s, after the Arusha Declaration, development in the education sector was guided by the white paper "Education for Self-Reliance" (Nyerere 1968), which emphasized equitable access to education by all citizens. Primary and postprimary education was expanded. A very ambitious literacy campaign was launched in 1971, and by 1988 the adult literacy rate had reached 93 percent among males and 88 percent among females. The high level of literacy has been an advantage in the communication of health, food and nutrition education messages. Moreover, the materials distributed through the literacy campaign have also included information on food and nutrition.

Legislation passed in 1978 extended compulsory primary schooling to all children aged 7 to 14 years and set the goal of achieving universal primary education by 1989. Primary school enrolments rose, with over 80 percent of all eligible children enrolling in Standard 1. The enlargement of the school system was made possible through the shared effort of the Government and parents, who contributed to the labour for construction.

In order to allow access to schools by the majority, no schools fees were charged. Secondary school fees were abolished in 1965, which means that there were no fees from primary through university education. Parents were still responsible for the purchase of uniforms, and during the 1980s their outlays swelled for books, paper, desks and so on.

The primary school dropout rate is an issue of mounting concern. More than 25 percent of the cohort of children entering school in 1978 had dropped out before graduation in 1984. Among subsequent cohorts, the rate fell to around 20 percent but then climbed back to 25 percent for the group enrolling in 1982 and graduating in 1988. The extent to which this reversal can be attributed to economic pressure on households has not been established.

3. The **macroeconomic policy** framework in Tanzania in agriculture and food security in general and the resulting policy impact on nutrition in particular can be analysed within five main periods: 1961 to 1967, immediately following Independence, when policy more or less held to the status quo; 1967 to 1973, after the Arusha Declaration, when the Government acquired the reins of the economy; 1974 to 1978, when economic shocks alternated with rapid expansion and transformation; 1979 to 1985, a time of crisis and stagnation, and 1986 to 1991, a period of structural adjustment and economic recovery.

During *the immediate post-Independence period*, 1961-7, economic policy focused on maximizing growth. During *the period just after the Arusha Declaration*, 1967-73, an effort was made to maximize and redistribute income through public sector enlargement and the broader provision of social services (Wagao 1990). The economic policies pursued at that time generated a slight drop in GDP growth, which averaged 4.5 percent per annum. Having peaked in 1966, the value of agricultural exports began to decline. On the other hand, due to increased Government expenditure, the volume of imports rose by 7 percent per year. This led to a deterioration in the balance of trade that was somehow offset by greater inflows of capital (Sijim 1990). Inflation averaged 4.1 percent per year between 1961 and 1973.

The period of alternating fortunes, 1974-8, started with shocks. Oil prices more than doubled in 1974, and there was widespread drought and a fourfold boost in world grain prices in 1975. Net cereal imports into Tanzania ballooned from 80,000 tons in 1972/73 to 470,000 tons in 1973/74, while the domestic production of major export crops such as cotton sisal and cashewnuts shrank. The interplay of these phenomena drained resources and foreign exchange reserves and caused the Government to rely heavily on bank credit to finance budgetary operations. Inflationary pressure spiralled dramatically, reaching an average of 22 percent per year.

The crisis highlighted the inherent structural weakness in the economy, notably the poor performance of the export sector and the gradually declining savings ratio (World Bank 1989). While the ratio of real domestic savings to GDP had been about 15.5 percent in 1965, it had dropped to 11.7 percent by 1972 and then fell to below 10 percent each year up to 1975 (Nyagetera and Radke 1989). The external position improved appreciably in 1976 and 1977 due to better weather conditions, which fostered greater yields in agricultural production.

The Government also implemented an industrialization strategy and stepped up import-substitution industrialization. This resulted in a significant shift in the composition

of GDP. Agricultural GDP decreased from 42.3 percent in 1975 to 39.7 percent in 1979, while industrial GDP rose from 11.7 percent to 12.4 percent during the same timeframe.

During *the period of crisis and stagnation*, 1979-85, the economic gains which had been achieved from 1976 to 1978 were quickly wiped out by a multiplicity of external and internal factors. The combination of these factors led to protracted economic deterioration, which was marked by slumping production and exports, erosion in physical infrastructure, intense inflationary pressure, a mounting external debt burden, widening Government budget deficits and a worsening balance of payments position. These trends brought on a reduction in the rate of domestic savings and a sharp curb on import capacity. Sagging imports provoked severe shortages in raw materials, spare parts and consumer goods, causing a further deterioration in production and in the capital stock.

The impact of these developments was manifold:

- Real growth in GDP plunged from 2.5 percent in 1980 to an average 0.4 percent over the next three years.

- The output of both foodcrops and cashcrops dwindled. Joined with nonremunerative producer prices, overvalued exchange rates, unrealistic consumer and producer subsidies, inefficient marketing facilities and the lack of consumer goods, this had a negative impact on intersectoral linkages and effected a shift from the production of tradables to subsistence production. This happened at a time of stepped-up industrialization and urbanization, when agricultural surpluses were essential to feed the growing urban population, raw materials were required for the expanding import substituting industries, and foreign exchange earnings were needed to pay for the importation of raw inputs and spare parts for the highly import-intensive domestic industrial structure (Mlolwa 1989).

- The volume of foodgrain imports jumped from 70,000 tons in 1978/79 to an annual average of over 260,000 tons during the next six years (MDB 1987). There was a corresponding increase in the value of imports. Thus, the value of food imports soared from $30 million in 1977/78 to $100 million in 1981/82.

- Widespread price controls had to be imposed. This had a negative influence on resource allocation and efficiency, as well as on the profitability of most commercial enterprises in the public sector.

- The physical infrastructure eroded throughout the country, affecting the delivery of vital services and contributing to further output declines in productive enterprises.

These developments spawned a serious mismatch between the supply of resources and the demand for them, a widening gap in the trade balance as export volumes and foreign aid inflows tumbled, an excess of budgetary outlays over revenue, and declines in domestic savings and per capita incomes (Mlolwa 1989).

A fresh approach was adopted in 1980/81 through the National Economic Survival Programme, which was designed to stimulate exports and involved discretionary fiscal measures to control expenditures. The Structural Adjustment Programme followed from 1981/82-1985/86. The aim of SAP was to stabilize the economy and trim away structural constraints in order to improve economic performance. The exchange rate was recruited as an instrument of economic management. The scope of price controls was reduced. Domestic trade was partially liberalized. An export-and-retention scheme and an imports scheme funded by the importers themselves were inaugurated. Higher agricultural producer prices were reestablished. Cooperatives were reinstated, and steps were taken to strengthen public finance. These efforts resulted in some economic recovery. The controls on the domestic marketing of foodgrains were eased. Coinciding with the onset of favourable weather conditions, this encouraged a surge in agricultural output, as well as stable food prices. The importer-funded imports scheme generated larger volumes of consumer and intermediate goods for the domestic market.

The period of structural adjustment and economic recovery, 1986-91, opened with the implementation of the Economic Recovery Programme, which ran from 1986/87 to 1988/89. ERP was a continuation and intensification of the policies introduced through the Structural Adjustment Programme. The major objectives of ERP were to:

- Rouse food and export crop production through incentives, more effective marketing structures and more advantageous resource allocation for the agricultural sector.
- Rehabilitate physical infrastructure.
- Raise industrial capacity utilization.
- Restore economic balance through fiscal, monetary and trade policies.

To attain these goals, the Government initiated periodic reviews of producer pricing to assure that farmers received approximate world commodity prices, adopted an active exchange rate policy, undertook discretionary and prudent fiscal measures, reoriented monetary and credit policies in order to check excessive monetary expansion and dampen inflationary pressure, sought to achieve positive real interest rates and further liberalized the procurement, marketing and distribution of goods and services.

The Economic and Social Action Programme 1989/90-1991/92 sets the current economic policy agenda. ESAP embraces aims which are similar to those of the Economic Recovery Programme (URT 1989a). Thus, ESAP macroeconomic policies continue to revolve around producer incentives, exchange rate management, fiscal policies, credit and money supply policies, the balance of payments and population policies. However, in recognition of the impact of the stabilization programmes supported by the International Monetary Fund and the World Bank on vulnerable groups in the country and in order to block further deterioration in the supply of basic social services, ESAP has laid stress on the restoration of these services and on the creation of opportunities for gainful employment for those people who might be affected negatively by recession or the measures activated to rationalize economic management and render public sector operations more efficient. ESAP thereby embodies an awareness not only that social services make an essential contribution to growth in productivity over the medium and long term (URT 1989b) but also that, in the basic philosophy of the nation, man must be the focus of any and all efforts at development.

Producer pricing policy under ESAP has emphasized improvement in the incomes of farmers through progressive reductions in marketing costs and better transportation, processing and storage. The attempt in the production of exports to realize a sustainable edge over import requirements has been carried on by external sector policies through export promotion endeavours, enhancements to the system of foreign exchange allocation and general refinements in foreign-sector resource management. To raise the level of social sector activities in real terms has been a primary objective of fiscal policy. The central Government has therefore been delegating some of its tasks to other agencies in order to concentrate on areas which have been identified as critical in the growth process, namely, infrastructure and social services. Moreover, the public sector is being pruned, and savings are being pursued through cost cutting and through reforms and higher yields in the tax system. Meanwhile, communities and local governments are being helped to boost their capacities so that they can direct their own development programmes and garner the contribution and participation of their own people in development projects.

The major targets of monetary policy have been to maintain real GDP growth, scale back inflation and buttress the balance of payments position through credit limitations and reforms in agricultural marketing and the financial sector. The measures have also included institutional restructuring, better resource management in the financial sector and efforts to establish positive real interest rates.

An additional ESAP instrument is a national population policy, the main purpose of which is to advance human resource development. The policy seeks to accomplish this by influencing population quality, particularly through gains in the health and welfare of women and children. Key to this policy approach are:

- The expansion of maternal and child health and family planning programmes.
- Greater participation of women in mainstream economic and development activities.
- Programmes designed specifically for children, adolescents and the elderly.
- More effective food and nutrition programmes.
- Research in the area of conservation.
- An integrated public awareness, education and communication programme to mobilize public opinion in favour of the population policy and its aims.

4. **The implications for food and nutrition.** The absence of nationally representative data on long-term trends in nutrition precludes a thorough examination of the impact of the various measures outlined above on the nutrition status of the population. An analysis based on the children attending clinics in Dar es Salaam, a limited sample, shows that nutrition status had deteriorated in Dar es Salaam by the mid-1980s (Msambichaka and Maro 1988). Indicative information from other areas suggests that the situation was not changing there. On the other hand, the increase in domestic food production did translate into higher per capita food availability despite the resulting decrease in food imports (Table 2).

A classification of food production and nutrition status by region shows that regions

Table 2: AGGREGATE ENERGY AVAILABILITY BASED ON FOOD BALANCE SHEETS (1984/85-1988/89)

	Daily Kilocalorie Intake per Capita	Percent Adequacy
1988/89	3,395	122.1
1987/88	2,870	103.2
1986/87	3,045	109.5
1985/86	2,975	107.0
1984/85	2,975	107.0

Source: *Food Security Bulletin* (1989).

regarded as surplus food producers, especially Rukwa, Ruvuma and in earlier years Iringa, also exhibited elevated rates of malnutrition despite their relatively high GDP per capita and moderate variation in food prices (Kavishe et al. 1990). According to food balance-sheet estimates for regions with nutrition monitoring systems, no direct relationship exists between per capita food availability and the level of malnutrition (Table 3). This should not be surprising since several essential elements must be active in order for good nutrition to be present. In Tanzania the crucial element of health care has been identified as a weak link.

It is also important to address the issue of food access. The Consumer Price Index climbed by 1,500 points between 1980 and 1989. The Food Price Index jumped by 1,600 points over the same period. The surges in the CPI and FPI were comparatively high during the second half of the 1980s, the period of structural adjustment. Since 1985 the gap between food prices and overall prices has been small but widening, with food prices generally higher. Purchasing power has eroded. In 1980 the minimum wage bought 12.8 kilogrammes of the basic staple, maize flour, but in 1989, when the minimum wage was about fives times greater than it had been in 1980, it bought only 3.5 kilogrammes. Estimates indicate that, at minimum wages, individuals would have to spend up to 55 percent of their takehome pay in order to

Table 3: REGIONAL PER CAPITA ENERGY AVAILABILITY AND LEVELS OF MALNUTRITION (1988/89 And 1989)

Region	Kcal./Capita/Day (1988/89)	Malnutrition among Under-5-year olds (%, 1989)	
		Severe (<60% Weight/Age)[a]	Total (<80% Weight/Age)[b]
Kagera	5,530	1.7	38.7
Ruvuma	5,530	3.8	38.9
Shinyanga	5,530	3.0	37.1
Iringa	4,060	2.4	40.3
Mtwara	3,920	9.2	56.1
Morogoro	3,255	5.2	49.4

Source: Kavishe et al. (1990).
[a] The column indicates the proportion of under-5-year-olds weighing less than 60 percent of the standard weight for their age.
[b] The column indicates the proportion of under-5-year-olds weighing less than 80 percent of the standard weight for their age.

fill basic food needs. While one might be tempted to argue that this problem would affect only those employed in the formal sector, in large parts of the country the basic staple represents the principal source of cash income as well, so that the tie between consumption and income is absolutely straightforward. Moreover, the pressure on the population to meet the cost of many services has been rising, and practically the only way for people to raise the money is to sale food since there is a general lack of alternative sources of cash income.

5. **Some conclusions regarding policies.** The policies which Tanzania has followed since Independence have emphasized the development of rural areas. In the creation of infrastructure and basic social services, a compromise has sometimes had to be made between quality and quantity and between the desire to reach all the people and the necessity to establish a framework which is effective, efficient and within the compass of the financial capabilities of the country. For example, the choice has been made to focus on the expansion of the network of dispensaries and on the training of paramedical personnel rather than on referral hospitals and the training of doctors. Likewise, the primary school system has been enlarged at a faster pace than has university education. The implementation of these policies has not occurred without problems or controversy. Thus, in view of the economic hard times and the high dropout rates in primary schools, some have questioned the approach adopted in education. The primary health-care referral system and the scheme to have communities pay village health workers have not always functioned smoothly. Nonetheless, these policies have generally been successful in satisfying the needs of a greater number of people.

In its attempt to improve nutrition during the 1980s, the country had several definite advantages. The population is literate; a rural health-care infrastructure and trained extension-service personnel are in place all the way down to the community level, and a tradition of community action and participation exists among the people.

Government macroeconomic policies have played a significant role in the evolution of social sector activities since Independence. Although the economic problems which beset the country from the late 1970s to the mid-1980s and the deleterious impact of the subsequent structural adjustment programmes on vulnerable groups threatened to erode achievements in education, the provision of safe water and health care, in no way did they impede the effort to meet the basic needs of the population. Indeed, this effort involved a real attempt to deepen a basic tenet of the philosophy of the nation: that the development process must be judged first and foremost in terms of its benefit to all men and women.

The Financing of Social Services

By the mid-1980s, but especially with the implementation of the Economic Recovery Programme during the last half of the decade, it had become clear that new financing strategies had to be devised to assure the delivery of social services, particularly because of the difficult economic situation and the fact that the population was growing rapidly. Thus, by the beginning of the 1990s, within the context of the Economic and Social Action Programme, a shift in social sector financing was being effected that modified even the once invulnerable belief that basic social services should be free.

The principal sources for the financing of social services are the central Government, local governments, donors, voluntary agencies and communities.

1. Through a very progressive tax structure, the **central Government** is able to generate enough revenue to provide more than 70 percent of the financing for public social services.

2. **Local governments** consist essentially of district and urban councils. The major sources of revenue of these councils are the development levy (a poll tax assessed all adults), property taxes, taxes on produce and various fees and licensing charges. While property taxes generally furnish the majority of the funds for urban council activities, district councils usually rely on the development levy. Among social sector operations, councils are responsible for primary education, including physical-plant maintenance and the procurement of teaching materials, primary health care and the construction and maintenance of district roads and water supply systems. The involvement of the central Government in these services is limited to the provision of subsidies to cover operating costs, the salaries of teachers and medical personnel and one-half the salaries of key council officials.

3. **Communities** support social sector activities through money payments for services rendered and through payments in kind. Thus, communities assist in the construction and maintenance of schools, health-care dispensaries, rural roads and wells. While the opportunity to pay in kind has been an important feature of the policies of socialism and self-reliance, direct and indirect money transfers by communities for these services have become more common in recent years. Communities now normally undertake to cover the costs of the operation and maintenance of water supply systems, primary and secondary school fees

(which have been reinstated) and school supplies, some types of drugs and the services of traditional medicinemen. This shift to cash payments has placed a considerable burden on households. In addition to purchasing school uniforms and paper, parents must now also pay an annual school fee of 200 shillings for each of their children, although no child is denied admission to school by reason of poverty. It has been estimated that in 1985 the average family spent 58 percent of its per capita income on education (Wagao 1990). It has also been calculated that in 1987/88 the voluntary contributions of parents toward the cost of school supplies, over and above school fees, totalled 1.48 billion shillings, which equalled 81 percent of the overall revenue of local governments that year (Semboja and Therkildsen 1990).

4. Although hard to gauge precisely, **donor support** for the social sector has been significant and sustained. It has financed the bulk of the capital budget, including the cost of machinery, equipment and the construction of schools, hospitals, health centres and water supply systems. Donors have also been channelling growing funds to the rehabilitation of existing facilities. Thus, they accounted for 83 percent of the 1987/88 development budget of the Ministry of Health (URT and UNICEF 1990). In the face of deteriorating Government revenue, the financing of important components of recurrent expenditure, such as the provision of teaching materials, the supply of essential drugs (financed through UNICEF by the Danish International Development Agency and the Overseas Development Agency of the U.K.) and preventive health care, especially the expanded programme of immunization, has been made possible in great part by donor support. The World Bank estimates that, in the health sector alone, donors furnish between $11 million and $12 million in pharmaceuticals annually (World Bank 1990b). Over the next few years the World Bank will provide approximately $10 million per year for ten districts in order to raise the coverage, quality and effectiveness of health-care and family planning services and control the incidence of micronutrient deficiency through critical interventions (World Bank 1990b). An examination of nutrition-related programmes also reveals the substantial contribution of donors. Of the total allocation of 744.4 million shillings for regional and national programmes of this sort in 1991/92, donor support represents 77.3 percent (URT 1991a).

5. **Voluntary agencies**, principally religious organizations, offer mainly primary education and health-care services. While these organizations receive considerable subsidies from the Government, they also mobilize their own resources for the various activities they

perform. About one-third of voluntary agency funds for health care comes from user fees which are regulated by the Government.

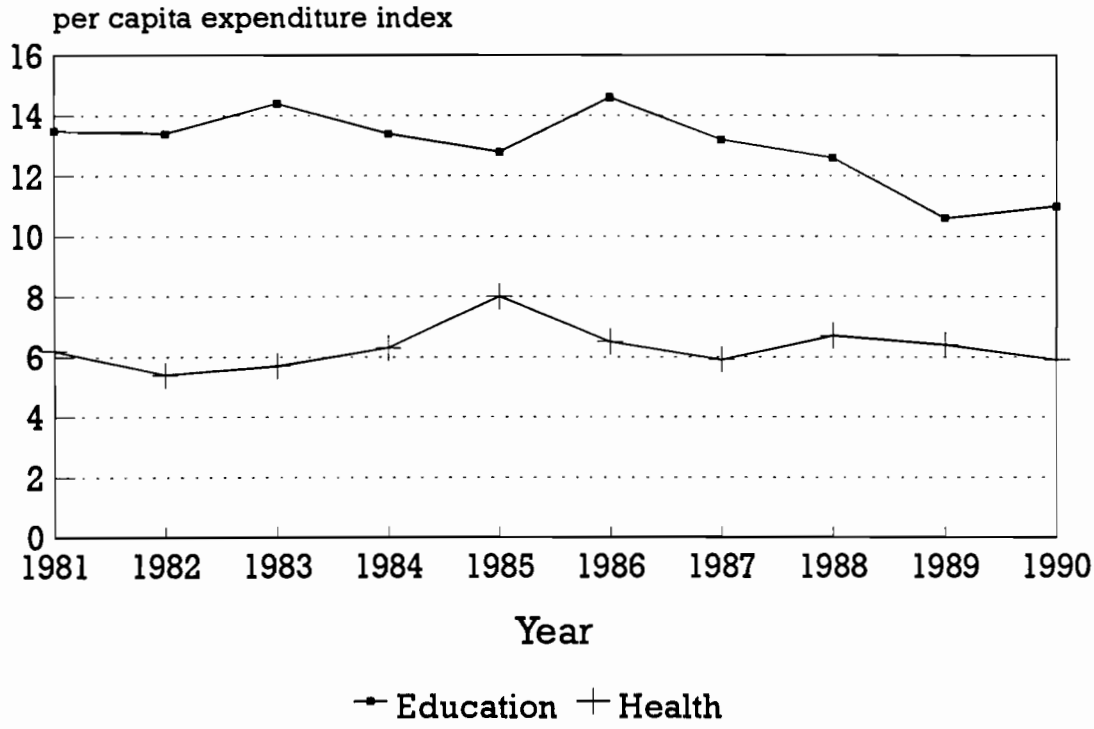
The public sector financing of social services has suffered because of the economic deterioration which began in the late 1970s. The share of local, regional and central government expenditure allocated to education oscillated between 12.8 percent and 14.6 percent from 1980/81 to 1986/87 before dropping to only 10.6 percent in 1988/89, the lowest level of the last two decades (Table 4 and Figure 1). The share of expenditure on health care fluctuated around 6 percent with a rise to 8 percent in 1984/85. The declines in the allocations for health care and education are more evident in terms of real per capita expenditures, which plunged from 13.9 shillings and 30.2 shillings in 1980/81 to 9.9 shillings and 16.4 shillings in 1988/89, respectively (Table 5 and Figure 2). Among those sectors which have exhibited falling spending ratios in recent years, the sharpest slumps have been in water and electricity, agriculture and "other services". Meanwhile, the share of public debt in total Government expenditure increased from 11.3 percent to 26.5 percent during this period.

Table 4: PUBLIC EXPENDITURES IN SELECTED SECTORS
(In Percentages Of Total Expenditure, 1970/71-1989/90)

	Education	Health Care	Agriculture	Water and Electricity
1970/71	13.7	6.2	11.3	5.0
1980/81	13.5	6.2	9.7	4.2
1981/82	13.4	5.4	7.4	3.7
1982/83	14.4	5.7	6.4	3.4
1983/84	13.4	6.3	7.4	3.3
1984/85	12.8	8.0	6.0	2.7
1985/86	14.6	6.5	5.5	2.1
1986/87	13.2	5.9	6.4	2.4
1987/88	12.6	6.7	5.3	3.4
1988/89	10.6	6.4	5.4	3.0
1989/90	11.0	5.9	4.8	1.9

Sources: *Economic Survey* (various years), URT (1990a).

Figure 1: THE SHARE OF EDUCATION AND HEALTH IN PUBLIC EXPENDITURES
(In Percentages At Current Prices, 1981-90)



Sources: *Economic Survey* (various years), URT (1990a).

The cuts in real expenditures and the growing imbalances in the spending within sectors are therefore basic problems in the provision of services. For instance, the World Bank has calculated that around 85 percent of primary education funding goes to meet teacher salaries (World Bank 1989). Given the extensive educational infrastructure which has been established throughout the country and the teaching materials which must be supplied for the primary school system, it is easy to understand why the remaining 15 percent of primary school funding is simply inadequate even for maintenance. Hence, the World Bank (1989) has offered three reasons for the introduction of cost recovery measures as a fundamental component of a sustainable public expenditure strategy:

- To enhance domestic revenue, which is an important consideration when the resource base is limited and few alternative sources of revenue are available.

- To maintain greater consistency with decentralization and more community involvement in the provision of services, thus also encouraging more self-reliance.

Table 5: REAL PER CAPITA PUBLIC EXPENDITURES IN SELECTED SECTORS
(In 1970/71 Shillings, 1970/71-1989/90)

	Education	Health Care	Agriculture	Water and Electricity
1970/71	25.6	11.5	21.1	9.3
1980/81	30.2	13.9	21.7	9.3
1981/82	29.0	12.6	14.4	7.9
1982/83	24.0	9.8	11.1	5.8
1983/84	19.0	8.9	10.5	4.8
1984/85	16.6	10.3	7.8	3.5
1985/86	16.5	7.3	6.2	2.4
1986/87	16.4	7.3	8.0	2.9
1987/88	17.3	9.2	7.3	4.6
1988/89	16.4	9.9	13.0	4.6
1989/90	20.6	11.0	8.9	3.5

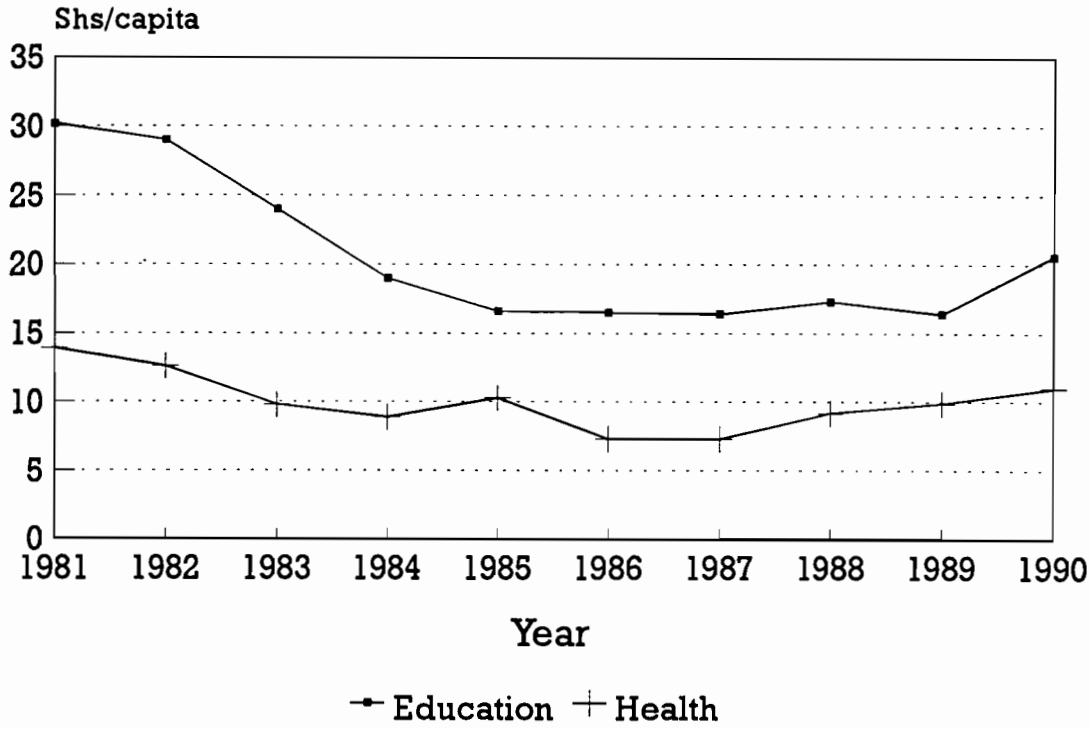
Sources: *Economic Survey* (various years), URT (1990a).

- To promote the more efficient use of resources.

Very strong arguments weigh against the imposition of user fees for social services. Fees would mean that the search for equity would be much more difficult (Wagao 1989, Stewart 1990). Thus, part of the decline in public primary school enrolments may be attributable to the lack of resources available to poorer households (see earlier), despite the fact that no child is denied admission to school because of poverty.

However, equally valid arguments suggest that the longstanding commitment to free basic services should be reviewed. It has been pointed out, for example, that the number of hospitals, health centres and dispensaries has advanced only marginally since 1980, while the patient base has increased by over five million individuals. The physical infrastructure already in place must be reinforced in order to meet the demand pressure. Furthermore, evidence exists to support the contention that the increased participation of people and communities in the maintenance and operation of social services should be encouraged. An analysis by the Government and UNICEF (URT and UNICEF 1990) states that, "additional contributions from villagers, in time and other forms, ...are more likely to be made if there

Figure 2: PER CAPITA PUBLIC EXPENDITURES IN EDUCATION AND HEALTH
(In 1970/71 Shillings, 1981-90)



Sources: *Economic Survey* (various years), URT (1990a).

is visible improvement in the situation as a result of their contribution." In other words, people are willing to pay for services which help enhance their lot.

This might also be the cause of the recent surge in new private secondary schools. Student enrolment in private secondary schools has surpassed that in public secondary schools. Preliminary estimates for 1990 put total private secondary school enrolment at 84,613, compared to 65,672 in public schools (URT 1990b). For the same reason, the number of private hospitals and clinics has mounted, particularly in urban areas. This seems to confirm the contention that people are willing to support programmes which benefit them. They are paying for private secondary school education for their children even though the fees are much higher than those for public secondary schools. More patients are paying for prescription drugs which are not readily available from hospital pharmacies. People are even willing to pay for water. On the other hand, the reliance on private services does depend on the degree of affordability.

III. THE IRINGA INITIATIVE

Public projects and programmes focusing on nutrition are implemented in Tanzania through various sectoral ministries. During the early 1970s, the era of multisectoral nutrition planning, the Government created a national institution, the Tanzania Food and Nutrition Centre, which was charged, among other tasks, with coordinating food and nutrition activities and providing leadership in the improvement of nutrition status in the country. TFNC is not responsible for the implementation of nutrition programmes. Rather it identifies approaches, tests feasible alternatives and passes its findings on to the relevant departments for broader application. Through its years of experience, TFNC has expanded its understanding of the nutrition problem in the country and evolved a conceptual framework which helps it determine the causes of malnutrition in specific contexts. It is also responsible for the drafting of a nutrition policy for the country.

The development of expertise among its staff and within institutions in general is among the priorities of TFNC. Thus, it trains extension-service personnel from other sectors and encourages local and regional governments and institutions outside agriculture and health care to be aware of the nutrition problem. In its early efforts in this direction, TFNC posted one of its staff members on a full-time basis to collaborate in the establishment of a nutrition information system in the Iringa region, the first region where TFNC had taken such a step.

The regional staff in Iringa had already been exposed to the concepts of nutrition. Multisectoral nutrition planning had previously been undertaken, and an institutional and technical resource base existed and was accessible. A number of programmes, including agricultural development projects and several water projects, that dealt at least indirectly with nutrition had been implemented in Iringa, yet the average rate of severe malnutrition stood at nearly 6 percent in the region, and over one-half of the children were underweight.

Meanwhile, a national consensus was emerging on new strategies to address the nutrition problem through communities. At around this time international funds were being made available through the World Health Organization and UNICEF under the auspices of the Joint Nutrition Support Programme. Tanzania was one of three countries selected for early field implementation.

Thus, all the elements were in place for a new approach on a large scale.

The Development of the Iringa Nutrition Programme

Under the coordination of the Prime Minister's Office, a national ad hoc planning committee was established in April 1982 to prepare a proposal for a regional nutrition programme. TFNC provided the technical leadership for the committee. The committee set six criteria for the selection of programme activities. The activities had to:

- Improve the living conditions of women and young children, including the alleviation of the heavy workload of women.
- Promote self-reliance and the use of local and national resources.
- Reach the poorest and generally favour social equity.
- Integrate and focus services on the same target population.
- Offer priority for services and activities at the household and village level.
- Involve and include villages directly in planning and implementation.

Iringa region, in the Southern Highlands, was chosen by the Prime Minister's Office as the site for the programme. There were three major reasons for this choice. First, nutrition surveys in various parts of the region had shown a high prevalence of malnutrition (Table 6). Second, Iringa contains a range of socioeconomic and ecological "zones" which mirror many other areas of Tanzania, and this would be important if the programme were to be replicated. Third, the institutional infrastructure for training is relatively well developed in Iringa. Iringa presented additional advantages because TFNC had already created a link with the region and a UNICEF-supported basic services programme was being carried out there.

Iringa is one of the 20 administrative regions of mainland Tanzania (see footnote "a", Table 1, page 4). It covers an area of 56,946 square kilometres. The region is subdivided into 5 districts, 31 divisions, 112 wards and 600 villages. In 1978 Iringa had a population of 925,000 and an estimated population growth rate of 2.7 percent, which was below the national rate of 3.3 percent. The number of under-five-year-olds was estimated at 179,000. The 1988 census indicated that the regional population had risen to just over 1.2 million, with 240,000 under-5-year-olds.

One of the four so-called "surplus grain" regions in Tanzania, Iringa is a very well-endowed agricultural zone. Of the 30,000 square kilometres of arable land, only 7 percent are actually under cultivation. The average farm size is 1.4 hectares, compared to a national average of 1.2 hectares. The major graincrops include maize, wheat, sorghum and paddy. Maize, tea, pyrethrum and tobacco are the important cashcrops. Maize production in Iringa

Table 6: SURVEYS OF MALNUTRITION AMONG UNDER-5-YEAR-OLDS IN IRINGA REGION (1978-83)

Survey	Sample Size	Percent Malnutrition	
		60-80% Weight/Age[a]	<60% Weight/Age[b]
August 1978	900	44-62 per village	2-6 per village
June 1979	391	51	6.0
October 1979	1,519	38	5.0
October 1980	1,759	59	6.0
June 1982	1,705	48	4.0
August 1983	733	43	2.0

Source: URT and UNICEF (1990).
[a] The column indicates the proportion of under-5-year-olds weighing between 60 percent and 80 percent of the standard weight for their age (moderate malnutrition).
[b] The column indicates the proportion of under-5-year-olds weighing less than 60 percent of the standard weight for their age (severe malnutrition).

suffered a decline from an estimated 574,500 tons to 424,400 tons between the 1984/85 and the 1987/88 seasons. Production in 1988/89 stood at 565,500 tons, still below the output recorded in 1984/85.

Maize is the main component of the average diet. Food balance sheets calculated on the basis of production ranked Iringa fifth in 1988/89, with an energy adequacy of 146 percent, compared to a national average of 122 percent. Even if trade is taken into account, it is likely that, in terms of gross availability, Iringa is not a food deficit region. However, there are drought-prone areas in the region, and Pawaga, one of the divisions included in the initial nutrition programme, has had to receive food assistance because of drought.

The average per capita GDP of Iringa was 1,103 shillings in 1984, compared to a national average of 1,154 shillings. In 1980/81, regional development expenditure as a share of total development expenditure was 12.4 percent in agriculture, 3.2 percent in health care and 4.1 percent in education, compared to national proportions of 5.3 percent, 4.7 percent and 3.4 percent, respectively.

The substantial involvement of women in tea estate farming has been identified as one of the factors constraining child care. In 1978 the infant mortality rate in Iringa was 152 per 1,000 live births, and the child mortality rate was 257 per 1,000 live births, far above the

respective national rates of 137 and 231. Child malnutrition was also very high, with over 50 percent of under-5-year-olds falling below 80 percent of the standard weight-for-age.

The initial implementation of the Iringa Nutrition Programme covered only seven of the 31 regional divisions and 168 of the 600 villages in the region. The number of under-five-year-olds in the initial programme area has been estimated at 46,000.

The original proposal for the Iringa Nutrition Programme contained the following priority areas of focus:

- Family and village food production and preservation.
- Food consumption and young children.
- Health sector activities.
- Support by regional and national institutions for household and village activities in the above areas.

The original proposal was approved, and $5,663,000 was allocated for a period of five years. The national ad hoc planning committee was restructured into a national steering committee consisting of national and regional representatives and the country representatives of the World Health Organization and UNICEF. At its first meeting in February 1983 the national steering committee established a "project preparatory team", with five full-time members, to develop a plan of action. The committee and the team attracted the involvement of a large number of people from the regional, divisional and village levels in this planning stage. The years of discussion among key actors in Tanzania had created an environment which rendered conceptual development and practical efforts strongly interactive, and the intensive contact with the reality of the nutrition problem furnished an important input into the refinement of a conceptual framework. Concept and practical application became two aspects of the same process.

The plan of action, which was finalized in May 1983 and approved the following July, modified the original proposal substantially. An explicit technique was introduced to distinguish the key factors associated with malnutrition, and a procedure for assessment, analysis and action was suggested. This procedure was designed to offer opportunities to alter or redirect the programme whenever needed. It was to be instituted throughout the programme, but with two preconditions: the existence of appropriate assessment and analysis mechanisms which could function over an extended period, and the availability and some command of resources which could be used to assure that the programme would not be interrupted because of lack of action. A close link between the experience garnered through

the assessment-analysis-action cycle and the conceptual framework of the programme would offer a path for the identification of solutions in a process of "reflection in action".

The Initial Phase of the INP: Social Mobilization

The Iringa Nutrition Programme was launched in December 1983. The commitment and enthusiasm manifest in the keynote address given by the then prime minister, the late Edward Sokoine, have become sustaining elements in the work of the INP. The inaugural ceremony was itself a major demonstration of social mobilization. It involved communities and local, regional and national leaders; cultural groups and school children delivered the nutrition message through songs and traditional dances. It heightened Government awareness of and commitment to the programme, a commitment which is necessary even if the major focus of the INP is communities.

The first year of implementation, 1984, was dubbed the "Year of Mobilization". It was clear that information and public awareness would be important components in the creation of the assessment, analysis and action process in communities. The programme consisted of 11 projects and 38 subprojects, including support for the health sector, environmental health-hazard control, education and training, child care and development, technology development, household food security, food preparation, communications, monitoring and evaluation, research and management. However, the detailed plan of action was never viewed as a static entity. This was the most important achievement of the first year of implementation. Different activities and different combinations of activities were initiated in different villages. Some projects and subprojects were perceived as experimental, and some were begun as research studies. While some were implemented in every or nearly every village, others were not undertaken at all.

In order to reach the 168 villages targeted by the programme, a systematic village campaign was begun. Because of the successful launching and the very large number of people involved in the preparation of the programme, individuals and officials at all levels were willing and eager to work on the programme. More than 1,000 leaders attended one-day training sessions during the campaign.

A film, "The Hidden Hunger", was produced at an early stage to explain that the situation in Iringa represented a problem that required an immediate solution. The film highlighted the prevalence of "invisible", moderate forms of malnutrition and outlined the

major causes of this predicament. The film was shown in each of the 168 villages on the eve of a scheduled "health day". During that day all children were weighed, and their growth performance was reviewed; seminars were held on immunization and oral rehydration therapy, and the creation of a village-based growth monitoring system was discussed. As a result of the early interest in the programme, the general understanding of the nature of the nutrition problem and the participatory method adopted by the programme staff, a strong demand for growth monitoring and promotion quickly emerged among communities. By the end of 1984 about 80 percent of all under-5-year-olds in the programme area had participated regularly in a growth monitoring activity.

Refinement of the Assessment-Analysis-Action Approach

One of the major objectives of the Iringa Nutrition Programme is to improve capabilities in the assessment and analysis of nutrition problems and the design and execution of appropriate actions. An aspect of this is the generation of information specific to given environments on the causes of malnutrition and on the nutrition situation. This information is needed to guide decision making and to monitor changes effectively. Furthermore, since the aim of the programme is to benefit communities first and foremost and because the approach of the programme is participatory, communities have been encouraged to join directly in the conceptual groundwork for the production and collection of this information. The INP has thus offered the first real opportunity in the country for the development of a community-based nutrition information and monitoring system.

The first step in the creation of the system was to reach a consensus on the range of indicators to be processed and analysed. It was agreed that the weight-for-age indicator should be used to measure nutrition status. Because one of the goals of the programme was to reduce child mortality, it was also decided after long discussion that village leaders should convince their communities of the importance of fully recording the circumstances of all child deaths. This was not necessarily an easy task since longstanding taboos surround the subject of child death in these villages.

The village leaders suggested that it would be possible to gather data and analyse them in their villages if the people chosen to do this work received proper training. This suggestion was followed, and the villages selected community members to attend training sessions organized in each of the divisions that were to implement the programme. These

trainees included village secretaries, school teachers and village health workers or those who had already been designated to become village health workers. Health committees were formed and charged with the management of the information and monitoring system and any follow-up action required within communities. A village registration system was also developed. A first village population registration was completed in time for the initial nutrition campaign marking the start of the programme in the respective communities.

Following the campaign, it was agreed that child growth monitoring would be carried out in the villages once each quarter, but that regular clinic-based growth monitoring and promotion activities would not be replaced. A village health day was set aside by each village to undertake growth monitoring activities, including measurement of the weight of every child and discussions on individual cases. During these village health days, health workers from nearby dispensaries provide immunization services and hold special health and nutrition education seminars. Because important services are furnished through health-care facilities, parents are encouraged to continue to go to clinics, especially if their children still require immunization.

A summary of the health and nutrition situation among village children is presented to the entire community for discussion and included in a quarterly report. This report is submitted to the village government for review and the identification of any necessary action. Village health workers maintain close contact with families, especially those households experiencing problems and those children particularly at risk. Village registers are updated each quarter, and any important summaries are included in the village quarterly report.

During the first two years of implementation in Iringa, it became obvious that the assessment, analysis and action method already existed throughout society. "Coping strategies" were very elaborate, supple and resource-relevant components of this method. The challenge was to "discover" these strategies and to find a means to reinforce them through the participatory approach. This led to a heightened appreciation of the crucial role of information and, indeed, of advocacy. Advocacy encouraged awareness and commitment, and information improved the assessment, reassessment and analysis process.

It also became obvious that fresh resources had to be constantly and rapidly mobilized or existing ones had to be reallocated swiftly to support new priority actions that had been identified. Village committees regularly discussed problems and the best ways to solve them; they passed their analyses and data directly along to the division, district and regional levels, where decisions had to be made on how best to support these village initiatives. However,

the desire to act quickly and in a flexible manner was not conducive to the relatively centralized management organization of the programme. The districts had not been adequately included in the process. In 1985 and 1986 several attempts undertaken to break down this barrier failed to decentralize the programme.

Expansion within Iringa and to Other Regions

The Iringa Nutrition Programme was reviewed during 1987. The structure of the programme was changed in accordance with the recommendations of this mid-term review. All subprojects were regrouped into five project areas, and one new project area was added. The focus of the programme thus became:

- Systems development and support (policy and programme communications, monitoring and evaluation, integrated training and infrastructure support).
- Maternal and child health (dispensaries, maternal and child health services, the village health worker programme, the training of traditional healers and birth attendants, the programme for the control of diarrhoeal diseases, the expanded programme of immunization, the programme for the control of acute respiratory infections, the programme for the control of malaria, nutrition rehabilitation, maternity care and the programme for the control of micronutrient deficiency disorders).
- Water and environmental sanitation.
- Household food security (food and nutrition planning, agro-forestry, crop promotion, home gardens, small-animal husbandry, food preparation and food processing and preservation).
- Child care and development (village child care organizations, child-to-child actions and support for technology development).
- Income generating activities, the new project area.

Expansion and decentralization were the most important challenges following the 1987 review. The district implementation committees were strengthened, and by the end of the year each of the five districts had prepared their own situation analyses and detailed plans of action for 1988. The management committee was replaced by a programme support team, which was expected to assist the districts in their work.

During 1987 the programme was augmented to cover the whole of Iringa region. This meant that more than 400 new villages were joined to the original 168 villages. An additional

150,000 children now benefited from the programme. This enlargement was overseen by staff from Iringa region and from the initial INP areas, with little outside technical support.

The effort was initiated with a village campaign, similar to the one which had been undertaken in the original 168 villages of the programme. Emphasis was placed on explaining to communities the importance of growth monitoring and promotion, the most significant and most likely causes of malnutrition, the critical significance of feeding frequency during the weaning period, the establishment of village-based information and monitoring systems and the provision of several key primary health-care services, such as immunization, oral rehydration therapy and nutrition education.

The immediate impact was impressive. Immunization coverage quickly reached 80 percent in Iringa region, the highest rate in Tanzania at the time; participation in the monitoring system was very high, and the prevalence of malnutrition was decreasing. The system of fixed "catchment" areas and outreach services for immunization that was part of the Ministry of Health national strategy for immunization was taken more seriously in Iringa and was implemented. The advantages of decentralization for the districts and the generally high public awareness after the three to four years of advocacy help explain this strong response of villages.

The general mobilization of the villages in Iringa and the very extensive training of cadres began to show benefits in other fields as well. The threefold broadening of the coverage of the INP was a challenging test of replicability. The expansion of key elements, such as growth monitoring and promotion, the village campaign and immunization, was achieved in only four months.

In March 1987 a large group of staff from the ruling political party, Chama cha Mapinduzi, and national and regional government personnel from all over Tanzania met to analyse the experience in social mobilization in Iringa in order to identify the major components of a strategy to spread the "Iringa approach" to the rest of the country. The group agreed that the analysis should centre on advocacy, information and communications, education and training, the provision of key services, mobilizing agents ("strategic allies"), social organizations and relationships, and programming for social mobilization. The group drafted a set of conclusions concerning the most important interventions in Iringa and recommended procedures to accelerate the process. It also examined methods to sustain the process once the current external funding had been exhausted, and it explored ways to adapt the Iringa experience to the needs of other regions and other countries.

In the early 1980s there was a shift from basic services to child survival and development in the strategy focus of some international and bilateral organizations, notably UNICEF and the U.S. Agency for International Development. The principal ingredients of the basic services programmes of these organizations had included water and sanitation, health care and education. They had been designed mainly to enhance coverage. The improved nutritional status of a population had not been an explicit objective. Because of the shift, around 1985/86, a number of regions in Tanzania that had been receiving support as part of basic services programmes undertook a reorientation to concentrate on child survival and development. This reorientation benefited from the initial results of the effort to reduce malnutrition that were emerging from Iringa at the time. Thus, the regions of Kagera, Mtwara, Ruvuma and Shinyanga and Hai district in Kilimanjaro region instituted programmes which emphasized social mobilization and community-based information systems. Later on, Mara and Singida regions began programmes which stressed community-based information systems, and Zanzibar started a substantial nutrition programme which reflected many of the fundamental features of the "Iringa approach".

IV. RESOURCE ALLOCATION FOR THE IMPROVEMENT OF NUTRITION

Resources and Resource Control

Actions to reduce malnutrition must address the issues of resource availability, resource allocation and the control of resource needs. The resources may be financial, human or organizational. The control of resource needs involves an understanding of the extent to which resources are deployed to meet certain needs. For example, an analysis of the time resource under the conditions obtaining in Tanzania reveals that, especially among women, the availability of time is constrained by competing tasks. Thus, at the expense of their health, many women must overwork in order to fulfil their expected social roles.

A resource analysis including time has helped to orient programmes in Tanzania so as to avoid an additional workload for women. An important intervention among the nutrition-related actions has been the community organized feeding of children. This has satisfied the food needs of children without placing extra strains on the time availability of mothers. Installing services directly within communities by, for example, training local village

health workers also economizes on the time of mothers since they no longer have to walk to distant health facilities. Another important approach involves the reduction of the time required to complete various tasks. While efforts have been undertaken to develop labour-saving technologies and make them available, much more is required on this front.

Resource analysis is also important in determining the best ways to employ external support to bolster critical inputs. It can make an essential contribution in any attempt to strengthen the empowerment of communities and to cultivate sustainability and replicability (Jonsson and Toole 1991).

A Resource Analysis of the INP

The nutrition-related programmes of the 1980s were made possible through a combination of external financing, central and local government resources and community inputs.

1. **Economic resources**. A total of $5,663,000 was made available to the INP through external donors at the start of the programme. While the internal contribution from local, regional and national sources had not been calculated in dollar terms in advance, the Government was committed to provide personnel and financial support through existing budgets to the extent necessary. The Government infrastructure was also used for programme implementation. By the end of Phase I of the programme, 1984-7, a total of $3.48 million of the allocated funds had been expended. Programme management, including personnel support, accounted for the largest share, around 20 percent (Table 7).

The Tanzanian outlays for the INP during this first phase have been estimated at 47,245,000 shillings, which equals approximately $744,000 at the 1987 exchange rate (URT, UNICEF and WHO 1988). While this may appear small compared to the international donations, other socially and politically significant contributions were also made by the central and local governments and the communities. It has been calculated that, of the Tanzanian funds for the programme, 1 percent came from the national level, 12 percent from the district level, 21 percent from the regional level and 66 percent from the community level. The contribution of communities was mainly in kind, food for the children and labour for brickmaking and construction, for instance. Moreover, communities were responsible for the wages of village health workers and daycare attendants. Around 70 percent of the villages paid these people in cash. Thus, of the total expenditure during the first phase of the INP,

Table 7: THE INP: THE DISTRIBUTION OF EXPENDITURE BY COMPONENT (1984-7)

Programme Component	% Expenditure
Management support	21.5
Infrastructure support	11.5
Community-based health care	11.1
Construction/renovation of dispensaries	9.0
Construction of multipurpose training centres	7.9
Communications	7.5
Household food security	7.2
Monitoring and evaluation	6.1
Child care	4.0
Training	3.3
Courses and study tours	2.6
Sanitation	2.4
Research	2.1
Income generating activities	2.1
Facility-based health services	1.8

Source: URT, UNICEF and WHO (1988).

5.9 percent came from government, 11.7 percent from communities and 82.4 percent from donors. The reliance of the programme on donor resources was clearly heavy.

The calculation of per capita costs in the financial analysis of the INP is based on the estimate that 46,000 under-5-year-olds were reached by the programme annually in the 168 villages during the period from 1984 to 1987 (URT, UNICEF and WHO 1988). In the analysis the concepts of startup, expansion and ongoing costs are employed. "Startup costs" represent expenditures for one-time inputs which were not necessarily exclusive or specific to the INP at that moment, such as the research and production of materials. "Expansion costs" are expenditures for one-time inputs in each of several geographic areas; thus, in a given geographic area these inputs were equivalent to "startup costs", but they had to be generated again in the next area. An example is the cost of the construction of a dispensary. "Ongoing

costs" are recurrent programme expenditures. Examples are the outlays for salaries and supplies. According to the analysis, startup costs accounted for 18 percent of total Phase I spending, while expansion and ongoing costs accounted for 40 percent each. In terms of actual average annual per child expenditures, total startup costs were estimated at $3.60, expansion costs at $5.30 (annualized) and ongoing costs at $8.05. This leads to a total average annual cost for the programme of about $17 per child.

The analysis of average costs must be qualified in that other children also benefited. Not only were children 5 years old and older touched by the programme, but INP services were expanded in 1987 to include other communities, and some of this expansion was supported through the original funds. The assumptions on the number of children reached by the programme are therefore conservative, and the average-cost estimates tend to be too high (URT, UNICEF and WHO 1988).

The average annual ongoing cost of around $8 per child can be examined for what it reveals about the sustainability of the INP. For a similar purpose, the Sub-Committee on Nutrition of the United Nations Administrative Committee on Coordination has attempted to decipher comparative data on the costs of various programmes (Gillespie and Mason 1990). The comparison has been difficult because the various programmes have different goals; they are not the same in scope or coverage, and the extent of their integration with existing programmes is not identical. The per capita costs of programmes which include growth monitoring and promotion, health-care services and the provision of food have diverged widely. For example, the cost per beneficiary for the Tamil Nadu Integrated Nutrition project has been estimated at $7 or $12, depending on whether food is included; in the Dominican Republic the cost of a programme involving supplementary feeding, health-care services and growth monitoring and promotion has been estimated at $25 per beneficiary. The cost of furnishing integrated services is estimated at $20.76 per beneficiary in the Tamil Nadu project and $49.91 in the Narangwal project, both of which are in India (Kennedy and Alderman 1987). Nonetheless, the ACC-SCN analysis indicates that, in monetary terms, the minimum level of effort before an impact on nutrition will begin to be apparent is around $5 for interventions which do not provide food and around $10-$20 for those offering food. The average annual ongoing cost of the INP of $8 per child is therefore quite appropriate. Moreover, it is higher than the Government per capita expenditure on the social sector as a whole (see earlier). Indeed, it is higher than the overall Government per capita expenditure in all sectors, which was 154 shillings (less than $3 at the 1987 exchange rate) in 1988/89.

In order to expand the INP to other areas, it has been necessary to identify the core elements of the programme that are critical for success and to explore ways to save money. The cost of the village campaign and the mobilization activities in Iringa has been estimated at 100-200 shillings per child ($1.60-$3.15 at the 1987 exchange rate). By the time the programme was being extended to new areas in the region the corresponding initial cost had been reduced to 40 shillings per child ($0.63). However, this also reflects the fact that various startup inputs from the original programme, such as communications materials, could be reused during the expansion (UNICEF-Tanzania 1991). The core elements which have been identified include social mobilization, training and the establishment of community-based information and monitoring systems. It has been estimated that these programme components would cost an average $2.55 per child to implement (UNICEF-Tanzania 1991).

2. **Organizational and human resources**. Some resources for the programme have had to be used to strengthen the support capacity of existing institutions. Community institutions which are conducive to decentralized and participatory actions have facilitated programme implementation. Village health committees have played a very important role. Training has been necessary in order to reinforce the human resource base. A total of 634 village health workers, 479 daycare attendants and over 2,000 artisans have been trained. The costs for instruction have usually been borne through programme budget funds. Communities have had to pay these workers for their services. The average compensation for child attendants and village health workers is estimated at 400 shillings per worker per month. The cost to a village for the normal team of two village health workers and one child attendant is therefore around 1,200 shillings per month. Villages which cannot afford this sum typically pay in kind, mainly other types of labour or food. During the initial stages of programme implementation, a great deal of supervisory support is required; this means that fuel and transport costs must also be covered. These costs are reduced wherever programme supervision has been decentralized to districts.

V. IMPACT ASSESSMENT

Programmes whose main thrust is the reduction of undernutrition have effects which go far beyond nutritional improvement alone. Thus, the Iringa Nutrition Programme has influenced

the programming of nutrition activities nationally, the local organization of services and local and national capacity-building and resource mobilization.

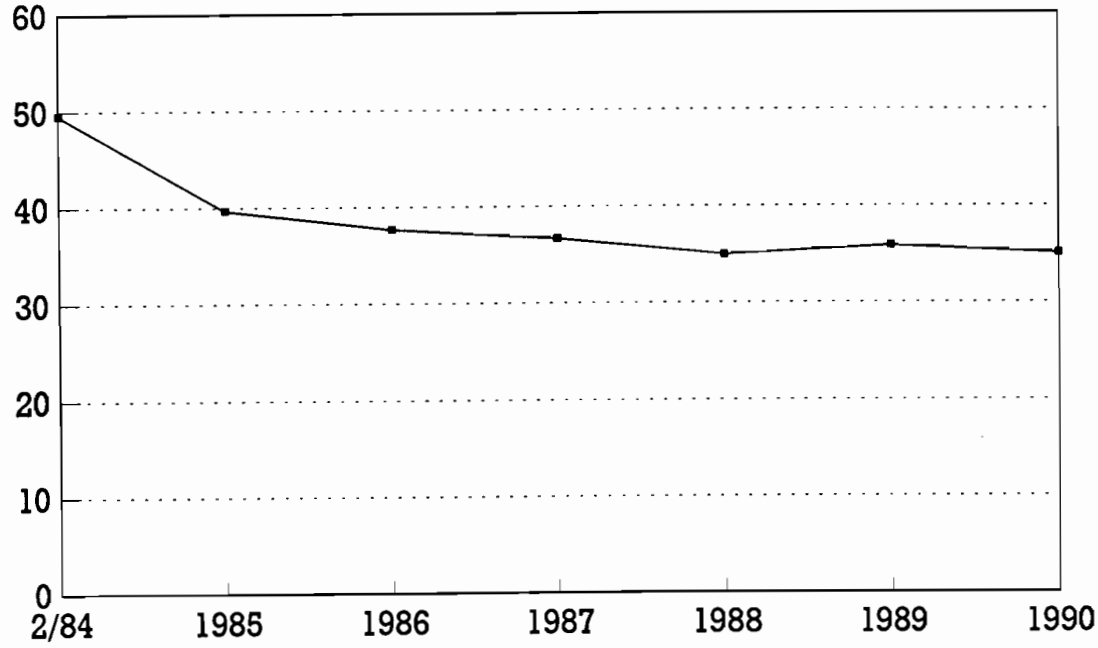
The Impact on Nutrition

According to nutrition status information reported through the maternal and child health system and by over 30 surveys in various parts of the country, malnutrition was fairly constant over time and among different geographical areas in Tanzania up to the early 1980s (URT and UNICEF 1985). Likewise, many experts in the country believe that overall nutrition status was not modified during the entire decade of the 1980s, including the period of economic adjustment. While the validity of the system-based information is questionable and the same communities were not necessarily covered by each of the 30 surveys, the apparent lack of significant changes in nutrition status does offer a limited means to gauge any changes in the communities of the Iringa Nutrition Programme.

The 1988 evaluation of the INP determined that the programme had helped to lower the level of malnutrition (URT, UNICEF and WHO 1988). The evidence for this conclusion had been drawn from the INP monitoring system, which provides data on trends in malnutrition that can be used for before-and-after comparisons, and from an assessment of malnutrition in the original 168 INP villages (cases) and in non-INP villages (controls) in 1987. Baseline data on all 168 programme villages had been collected during the second quarter of 1984. Severe malnutrition (weight-for-age less than 60 percent) had declined from 6.3 percent at baseline to 1.8 percent in 1988. Moderate malnutrition (weight-for-age between 60 and 80 percent) had dropped from 49.6 percent in 1984 to 37 percent in 1988 (Figure 3). By the end of 1989 severe malnutrition had fallen to 1 percent, and moderate malnutrition to 36 percent (Table 8). The seven divisions implementing the programme exhibited different degrees of success (Table 9). The curb in severe malnutrition in Mlolo division between 1984 and 1988 was impressive. The heavy floods and high rates of malaria experienced in Pawaga division, which also happens to be extremely resource poor, may partly explain the smaller decrease in malnutrition there.

The examination of trends for Iringa region shows an overall reduction in both malnutrition and the seasonal variations in malnutrition. The latter drop indicates that the seasonal increases in malnutrition due, for example, to household food shortages or a higher incidence of diarrhoea can be controlled through appropriate interventions. The downturn

Figure 3: THE TREND IN MODERATE MALNUTRITION IN THE INP
(Second Quarter Of 1984 To 1990)



Source: URT, UNICEF and WHO (1988).

in the rates has been more rapid for severe malnutrition than for moderate malnutrition. This can be explained by the fact that, at the start of the INP, it was necessary to focus attention on the severe cases in order to avert deaths and other serious consequences. Thus, intensive feeding was undertaken in communities. All under-5-year-olds were fed at fixed locations, where food was available through household contributions. This intervention was intended to raise feeding frequency even if parents or guardians were not at home during the day. The smaller decrease in the rates of moderate malnutrition suggested that a separate set of interventions, mainly addressing the underlying causes of malnutrition, was needed. A relatively longer amount of time was required to implement these measures.

In 1987 the programme was expanded to cover all villages in the region. Data collected in more than 400 expansion villages during the third quarter of 1987 have been used to compare the prevalence of malnutrition in the original INP villages and that in the expansion villages over the same time period (Table 10). Severe malnutrition was reported at 5.7 percent in the expansion villages and 1.7 percent in the INP villages, while moderate malnutrition was reported at around 45 percent in the expansion villages and 36.2 percent

Table 8: THE PREVALENCE OF MODERATE AND SEVERE MALNUTRITION IN IRINGA
(Among Under-5-year-olds In INP Areas, By Quarter, 1984-90)

Quarter/Year	Prevalence of Malnutrition (%)	
	60%-80% Weight/Age	<60% Weight/Age
2/1984	49.6	6.3
3/1984	41.5	4.7
4/1984	40.6	4.0
1/1985	41.5	4.5
2/1985	41.2	3.7
3/1985	39.3	2.6
4/1985	36.8	2.3
1/1986	37.9	2.6
2/1986	38.5	2.2
3/1986	37.6	2.1
4/1986	36.7	2.5
1/1987	37.6	2.2
2/1987	37.8	1.9
3/1987	36.2	1.7
4/1987	35.1	1.9
1/1988	36.1	1.7
2/1988	36.2	1.8
3/1988	34.0	1.3
4/1988	34.0	1.5
1989	35.9	0.8
1990	35.1	1.4

Sources: URT, UNICEF and WHO (1988), URT (1990c).

in the INP villages. Data on severe malnutrition in three districts also show consistently lower prevalence among the INP villages (Table 11). Even though the expansion villages cannot be regarded as strict "controls" since the situation in these villages was probably affected by the INP initiatives in neighbouring communities in the original programme area,

Table 9: THE PREVALENCE OF MALNUTRITION AMONG UNDER-5-YEAR-OLDS IN INP AREAS (1984 And 1988)

Division	<60% Weight/Age		60%-80% Weight/Age	
	June 1984	June 1988	June 1984	June 1988
Ifwagi	6.1	1.6	51.3	34.4
Kalenga	7.2	2.7	45.1	37.5
Lupalilo	5.8	1.8	55.0	38.6
Mlangali	4.4	1.8	51.1	36.9
Mlolo	8.6	1.0	50.5	48.4
Pawaga	9.2	6.2	41.1	38.7
Wanging'ombe	5.8	1.7	46.7	33.4

Source: The nutrition surveillance database of Tanzania Food and Nutrition Centre.

the positive impact of the INP on nutrition status is rendered still more plausible because the prevalence which was found in the expansion villages in 1987 was similar to that measured three years earlier in the original 168 INP villages. Moreover, data on trends reveal a general decline in prevalence in the original 168 villages.

The overall performance in agriculture in Tanzania improved during the 1980s (see earlier). However, many studies have tried but failed to find a clear relationship between child malnutrition and aggregate food availability even at the household level. This is mainly because care practices mediate in the translation of household food availability into adequate food intake among children. In other words, ample food availability alone is not sufficient to assure that the nutrition status of children is satisfactory.

Table 10: THE INP: MALNUTRITION IN ORIGINAL AND EXPANSION VILLAGES (Among Under-5-year-olds, In Percentages, 1987)

<60% Weight/Age		60%-80% Weight/Age	
Original Villages	New Villages	Original Villages	New Villages
1.7	5.7	36.2	45.0

Source: WHO and UNICEF (1987).

Table 11: MALNUTRITION IN ORIGINAL AND EXPANSION AREAS IN THREE INP DISTRICTS (Among Under-5-year-olds In Percentages, Iringa Region, 1987)

District	Original INP Areas	INP Expansion Areas
Iringa	1.7	5.2
Ludewa	1.7	3.4
Njombe	2.2	5.6

Source: WHO and UNICEF (1987).

On the basis of food balance sheets, an analysis of national food security (*Food Security Bulletin* 1989) has estimated that the adequacy of energy availability between 1984/85 and 1988/89 varied from about 103 percent to around 122 percent, with the low recorded in 1987/88 (see Table 2, page 10). The index for the estimation of adequacy is the 2,780 kilocaleries per person per day recommended by the Food and Agriculture Organization, the World Health Organization and United Nations University in 1985, rather than the 2,300 kilocaleries recommended by FAO and WHO in 1974. Thus, the actual adequacy would be higher if a disaggregation by age group and by the assumed level of activity of the various groups had been applied. (The 1985 recommendation is based on the energy needs represented by the level of physical activity of a hypothetical average subsistence farmer.) If better nationwide aggregate food availability were really enough to explain the decrease in malnutrition, than regions which established monitoring systems after Iringa had done so should have exhibited less malnutrition than had Iringa at a corresponding stage. In six regions implementing child survival and development programmes no correlation existed between the severe or total malnutrition observed in 1989 and regional per capita energy availability (see Table 3, page 11).

Other regions which have been undertaking nutrition-oriented programmes have had varying degrees of success in the fight against malnutrition (Table 12 and Figure 4). For example, the rate of severe malnutrition in Kagera region, which began a programme in 1985, went from around 8 percent in that year to below 2 percent in 1989. Moderate malnutrition fell from 48 percent to around 40 percent. Mtwara region, where severe malnutrition dropped from 8 percent in 1987 to just under 6 percent in 1989, had the lowest rate of reduction. However, Mtwara suffered both serious drought and heavy flooding during 1988/89. There

Table 12: SEVERE MALNUTRITION IN REGIONS IMPLEMENTING CSD PROGRAMMES[a]
(Among Under-5-year-olds In Percentages, 1984-90)

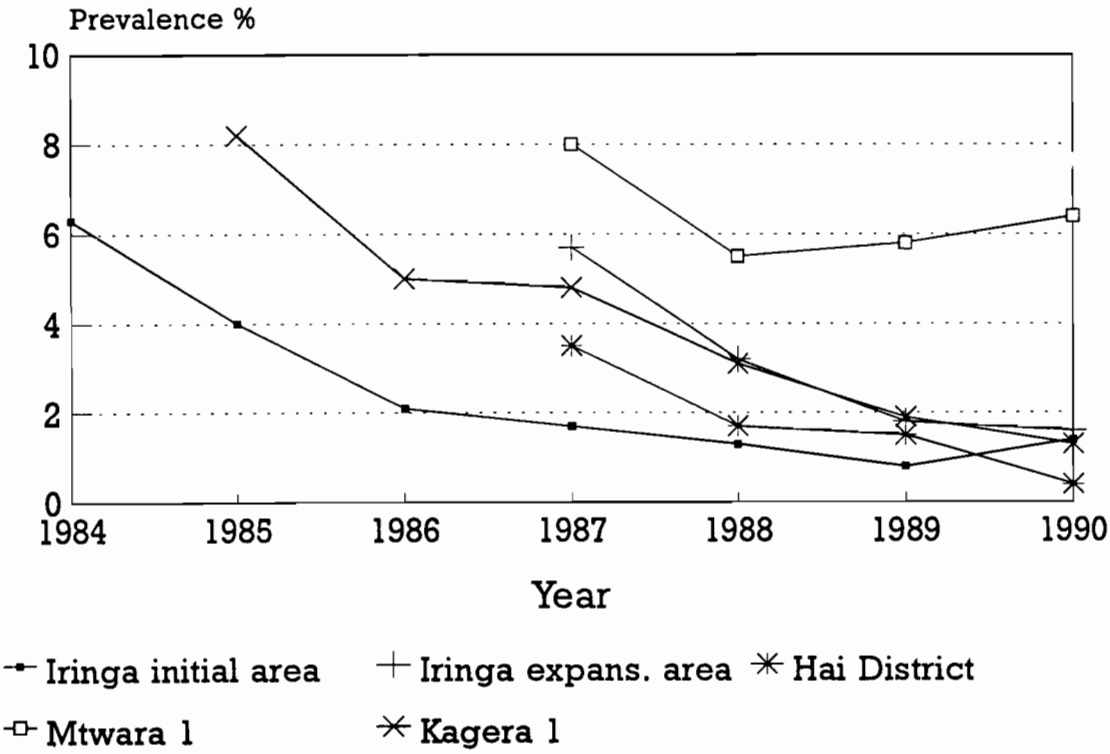
	Iringa[b]	Iringa[c]	Hai[d]	Mtwara[e]	Kagera[f]
1984	6.3	--	--	--	--
1985	4.0	--	--	--	8.2
1986	2.1	--	--	--	5.0
1987	1.7	5.7	3.5	8.0	4.8
1988	1.3	3.2	1.7	5.5	3.8
1989	0.8	1.8	1.5	5.8	1.9
1990	1.4	1.6	0.4	6.4	1.3

Source: TFNC (1990b).
[a] "CSD" = child survival and development. The data represent annual averages based on quarterly assessments. The programme starting dates varied.
[b] The original 168 INP villages.
[c] Expansion areas starting in 1987.
[d] Hai is a district in Kilimanjaro region.
[e] Phase I of the Mtwara programme; includes Masasi, Mtwara Rural and Newala districts.
[f] Phase I of the Kagera programme; includes Ngara and Biharamulo districts.

would perhaps have been no reductions whatsoever in Mtwara if the monitoring system had not been available to rouse the necessary relief efforts. In Kilimanjaro region, only one district, Hai, has been implementing a child survival and development programme. Before the programme, the malnutrition rates in this district were lower than those in other parts of the country. Nonetheless, severe malnutrition shrank from 3.5 percent in 1987 to 1.5 percent in 1989, and the rate of moderate malnutrition plunged from 31.5 percent to 16.5 percent over the same period.

A comparative analysis in the six divisions of Njombe district in Iringa has found no direct relationship between rates of severe malnutrition and per capita maize availability (Table 13). For example, Wanging'ombe division exhibited the lowest per capita availability of maize grain, an estimated 117 kilogrammes (1.3 bags), as well as the lowest rate of severe malnutrition, 1.5 percent, but Igominyi, with the highest maize availability, had the third highest rate of severe malnutrition. Assuming that households have no access to sources of cash, Wanging'ombe, Lupembe and Mdandu divisions would be classified as "foodgrain insecure" based on the availability estimates. Meanwhile, in a study of 2,500 children in 16

Figure 4: TRENDS IN SEVERE MALNUTRITION IN INP AND CSD AREAS (1984-90)



Source: URT, UNICEF and WHO (1988).

INP villages that included the collection of anthropometric data and data on household food production, a univariate analysis has shown a statistically nonsignificant relationship between child nutrition status and the household production of basic staples (Yambi 1988).

Some generalizations can be made on the impact of the INP on nutrition. The struggle against malnutrition has been quite successful in most regions in the first two to three years of INP implementation. This is very important in sustaining enthusiasm for the programme. Thus, in Iringa region severe malnutrition was cut by two-thirds within the first two years, and severe malnutrition was halved in Kagera region during the first three years. That initial interventions have focused on children at high risk may explain why severe malnutrition has diminished so rapidly (see earlier). Moreover, the zeal generated by the mobilization campaigns has meant that these initial activities have produced appreciable results almost immediately. In contrast, rates of moderate malnutrition are still above 30 percent although

Table 13: MAIZE AVAILABILITY AND SEVERE MALNUTRITION IN NJOMBE DISTRICT* (1989)

Division	Maize Production 1988/89 (000s tons)	Sales to Cooperatives (000s tons)	Net Available Output (000s tons)	Kilogrammes Available per Person**	Severe Malnutrition 1989 (%)
Wanging'ombe	11.0	4.2	6.8	117	1.5
Lupembe	10.0	4.3	5.8	162	1.8
Makambako	29.0	6.4	22.6	280	2.0
Igominyi	26.0	4.9	21.1	342	2.9
Imalinyi	18.0	2.9	15.1	315	3.8
Mdandu	10.0	2.8	7.2	189	4.1

Source: URT and UNICEF (1990).
* Some rows may not sum due to rounding.
** Bags of maize converted to weight at 90 kilogrammes per bag.

the majority of regions have reached at least the fifth year of programme implementation. Perhaps fresh and innovative resources must now be employed to address this problem, or perhaps more time is required to deal with the subtler underlying causes of malnutrition.

The INP has also had a clear impact on immunization coverage. Full immunization coverage in the initial programme area in Iringa stood at 92 percent in 1988, compared to 80 percent in the region as a whole. A survey by the Ministry of Health in 1987/88 found that Iringa region had the highest coverage among all regions in Tanzania (URT 1988a).

The number of deaths covered by the monitoring system is too small for the derivation of precise estimates of mortality rates. However, because of the lack of stark improvements in the situation of mothers, it is unlikely that the infant mortality rate has been curbed significantly. A rise in the number of recorded deaths in programme areas in 1987 has been attributed to an upsurge in malaria.

The Impact on Capacity Development

The 1988 evaluation of the INP concluded that all structures in Tanzania were benefiting from the Iringa Nutrition Programme (URT, UNICEF and WHO 1988). The involvement of national institutions in various studies in Iringa was contributing to the development of

research capabilities, and the ruling political party, Chama cha Mapinduzi, was profiting from the practical experiences in social mobilization and participation.

The INP has also introduced a new style of integrated planning and management that has already been replicated in other regions. It has shown that decentralization below the regional level is possible, provided the districts are mobilized and supported. Several innovations of technical and operational value have been introduced through INP, such as methods for the low-cost construction of multipurpose training centres, the "VIPs" (ventilated improved pit latrines), bulk-reducing dietary techniques, village-based nutrition rehabilitation and the acceleration of immunization programmes. The training of local craftsmen through the INP has increased the skill base in Iringa, as well as in other regions.

The Impact on Programming

The development and use of an explicit conceptual framework, the assessment-analysis-action approach and the social mobilization strategy have been identified as key to the achievements of the Iringa Nutrition Programme. Based on this experience, the national strategy for the design and implementation of nutrition-related programmes has been consolidated. Moreover, the experiences of the 1980s also furnished the impetus for final approval in 1991 of the national nutrition policy.

Two fundamental changes have occurred because of the positive experiences of the 1980s. First, as a concept, nutrition is no longer confined to discussions among health-care specialists. Because the National Planning Commission and other central coordinating bodies are now using nutrition status indicators to monitor national development, the nutrition problem has entered the consciousness of the public. This means that the improvement of nutrition status must henceforth be an explicit objective of relevant programmes. Second, in many parts of the country, parliamentarians, technocrats and others are demanding that the nutrition problems in their areas be seriously confronted. This demand has emerged mainly because it has become evident that results are within reach.

Information, advocacy and training are vital to the success of nutrition initiatives. Locally based information systems are fundamental to community efforts to address the nutrition problem and are therefore an essential component of all regional and district programmes. An important goal of the nutrition surveillance system is to strengthen local information systems, as well as information delivery to national decisionmakers.

The Impact on Budgetary Allocations

Convincing the Treasury, the Ministry of Economic Affairs and Development Planning and the regions to allocate resources for nutrition-related programmes used to be a daunting challenge since the problem of malnutrition was largely invisible to them. Today, because of the experiences and accomplishments of the 1980s, government leaders and administrators, as well as the public, have become deeply aware of the nutrition problem; nutrition status is used as an indicator of district, regional and national development, and the requests from regional governments for technical support in the design of nutrition programmes have increased tremendously. Likewise, districts and regions have been allocating more budgetary resources explicitly for actions aimed at reducing malnutrition, and central Government funding for national nutrition-related projects has risen (Table 14).

Table 14: GOVERNMENT ALLOCATIONS FOR NUTRITION-RELATED PROGRAMMES*
(In Thousands Of Shillings At Current Prices, 1988/89-1991/92)

	Local and Regional Government				Central Government			
Region	88/89	89/90	90/91	91/92	88/89	89/90	90/91	91/92
Arusha	--	--	--	--	--	--	--	1,000
Coast	--	--	1,000	--	--	--	--	645
Iringa	--	6,041	18,918	16,025	--	2,000	3,200	3,500
Kagera	--	1,175	3,246	3,990	--	1,000	3,367	5,513
Kilimanjaro	--	--	--	500	--	530	--	679
Lindi	--	--	--	600	--	--	--	--
Mara	--	--	--	--	--	8,207	10,000	13,000
Morogoro	--	--	--	--	235	7,800	--	8,000
Mtwara	1,807	5,279	4,246	11,430	1,300	4,500	8,556	10,000
Mwanza	--	--	1,200	--	--	--	1,000	2,401
Ruvuma	--	600	--	2,100	--	253	800	2,700
Shinyanga	304	--	200	3,000	--	--	--	--
Singida	--	--	4,200	4,900	--	10,000	10,000	11,000
Total	2,111	13,095	33,010	42,545	1,535	34,290	36,923	58,438

Source: URT (1988b), (1989c), (1990d), (1991b).

Thirteen of the 20 mainland regions have made such allocations, with Iringa region allocating the most significant amounts. Overall, regional and local government allocations have increased from 2.1 million shillings in 1988/89 to 42.5 million shillings in 1991/92. Meanwhile, central Government allocations have jumped from 1.5 million shillings to 58.4 million shillings. Although the funding by some of the regions is still quite limited, that they have begun to dedicate more explicit attention to the nutrition problem is important.

Several bilateral and international organizations have either already committed funds toward the reduction of malnutrition in Tanzania, or indicated their interest in doing so. These organizations include the World Bank, the European Economic Community, the International Fund for Agricultural Development, the International Development Agency of Norway, the Swedish International Development Authority and the Overseas Development Agency of the U.K. The test will be to find ways to channel these resources to finance critical inputs which will support sustainability.

VI. THE LESSONS OF THE EXPERIENCE OF THE 1980s

The Lessons for Nutrition Programmes

Several lessons emerged from the efforts to reduce malnutrition in the 1980s. An important one is that it is possible to achieve improvements in nutrition within the constraints of available resources. However, a clear understanding of the difficulties of communities must be attained through the involvement of the communities themselves. The awareness of the nutrition problem must be raised within communities and at higher administrative levels if actions are to be facilitated. Several analyses have highlighted community participation as a key to positive results (Shrimpton 1989, Pelletier 1991, Kennedy and McGuire 1990).

Thus, social mobilization is vital in any attempt to deal with the nutrition problem. This mobilization must demonstrate the seriousness of the problem so that communities will willingly organize their resources to confront it. This must also be accomplished in districts and regions and within national institutions.

A straightforward conceptual framework is essential to guide the analysis of the nutrition problem. The development of information systems which can serve as a foundation for assessment and analysis is a crucial element of success. These systems promote

cooperation and the coordination of community-based activities and those initiatives and approaches supported by government. Capacity-building in assessment and analysis and in the design and implementation of initiatives aimed at reducing malnutrition must therefore be a major process goal of programmes.

For communities and government entities to play an active role, existing institutional structures must be strengthened. Training must form an integral part of this endeavour. Government must also provide certain basic services like immunization, health care and the training of village health workers. If they are promoted properly, such services help to create and maintain enthusiasm while more difficult issues are being addressed.

The initial design of the Iringa Nutrition Programme focused on numerous aspects of the nutrition problem. There was a desire to address the many causes of malnutrition. However, actual implementation taught the lesson that not all actions have to be undertaken simultaneously. Indeed, no community executed all the programme components. Other than some of the basic health-care interventions like immunization and the promotion of oral rehydration therapy, most actions were chosen after careful assessment and analysis. It therefore became a great challenge for communities to select the sequence of actions that would furnish the maximum benefit under the given conditions. A few communities began with child-feeding activities, and other communities followed suit when they realized the positive outcome. Some communities assigned absolute priority to the training of village health workers and the construction of dispensaries.

Thus, another lesson emerged: there is no fixed package of initiatives that will work best under every circumstance. Each community, district and region has to identify, adapt or develop a set of interventions that is appropriate to it.

The Lessons for Financing, Resource Mobilization and Sustainability

The experience of the 1980s helped in the identification of a group of elements that all programmes must contain if they are to have a real impact on nutrition, namely, community information and monitoring systems, advocacy and mobilization, and training. These elements can produce improvements in nutrition even before physical infrastructures are in place. Moreover, they are not the most expensive programme ingredients.

For these reasons, regions have been encouraged to begin their nutrition programmes in these areas. Because they are so important and because they are less costly, these

components also generate financial support more readily and thereby permit districts and regions to use their own inputs in other ways.

By mobilizing communities around issues of primary concern like the survival of children and better nutrition and by demonstrating that many of these issues can be tackled with available resources, the Iringa Nutrition Programme has garnered strong community commitment. Obviously, communities wish to employ their resources for those activities which they believe will benefit them the most. In fact, the nature of community demand for certain programme inputs appears to change when it becomes clear that most of the inputs must come from the communities themselves; in a sense the identification of targets becomes more realistic. While external funds are used for critical equipment if a dispensary is being built in a village, the village must provide the labour for brickmaking and pay the local mason. Thus, cost sharing among communities, the central Government and international organizations occurs throughout the programme. As is evident from the quarterly reviews and assessments of the programme, this also means that there is a serious and quite definite demand for accountability and cost-effectiveness.

VII. CONCLUSIONS

In the early 1980s Tanzania activated a series of economic adjustment measures which affected the level of wage employment and income. Although the proportion of Government expenditure on the social sector, notably health care and education, did not change appreciably, the absolute per capita expenditure in the sector declined. Because of the financial squeeze, it became necessary for the Government to explore alternative funding mechanisms. The burden of meeting the rising cost of social services, especially education, shifted to communities and households, and efforts had to be undertaken to attract donor support. Despite these problems, there is no firm evidence pointing to a deterioration in nutrition status in Tanzania during the first half of the 1980s.

The Iringa Nutrition Programme has proven that it is possible to attack malnutrition on a large scale. The data show that the programme has been successful in decreasing malnutrition. As in the case of Iringa, reductions in malnutrition have also been demonstrated in subsequent regional programmes relying on the "Iringa approach" despite the overall negative trends affecting the economy.

A combination of donor support, Government resources and significant community inputs were used to pay for all the nutrition impact programmes initiated during the 1980s. While the data from the Iringa programme indicate an average "ongoing" cost of $8 per child per year, it has been estimated that core programme elements can be implemented for $2.55 per child per year. Given available resources, it is unlikely that the Government can absorb the total cost. Nor can the full burden be transferred to communities and households since the contribution they are now making, though small in absolute terms, represents a substantial portion of household incomes. Because of the positive results in Iringa, the commitment to mobilize resources for the improvement of nutrition has been increasing. Internal reorientation in resource allocation, joined with donor assistance for critical inputs, especially those requiring foreign currency, and a continued search for cheaper alternatives, is planned. Communities will also have to maintain their inputs in these programmes.

The economic constraints will probably be as severe in the 1990s as they were in the 1980s. However, the political economy of nutrition has changed dramatically. Nutrition is no longer a marginal issue in Tanzania. It has become a key political concern. The rhetoric of "political will" has been replaced by clear Government strategies driven by popular demand. The Iringa Nutrition Programme has become a movement.

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International Child Development Centre
Piazza S.S. Annunziata, 12
50122 Florence, Italy
Tel. 3955-234-5258 - Fax 3955-244817
Telex 572297 UNICEF I