

FOOD SYSTEMS UNDER STRESS (FSUS) PROJECT

Country Profile:

ZAMBIA

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BACKGROUND TO THE STUDY

This paper is one in a series of five from participating countries in the Food Systems Under Stress (FSUS) programme, the initial phase of which began in May, 1993. Other participating countries in this programme are Botswana, Tanzania, Uganda and Zimbabwe. Among the objectives of the FSUS programme are:-

- To develop with regard to areas where food systems are particularly stressed, a cross disciplinary base and research approach for innovative, field-based inquiries into natural resource management and food production/acquisition and consumption;
- To stimulate research into the often neglected socio-economic and institutional dimensions of food systems under stress; and
- To assist in the creation of strategies that will empower resource poor communities to articulate their needs clearly and effectively so that they become co-authors of the policies that affect them.

The FSUS programme is expected to run for 3 years during which it is envisaged to achieve these objectives. One of the activities of the first phase of the programme is for the participating countries to document the current situation in their countries with regard to food security, to trace the evolution of national food policy and national nutritional policy; and to draw the linkages between the two. These are some of the objectives of this paper.

INTRODUCTION

At independence in 1964, Zambia inherited a buoyant economy with a GNP per capita of over US\$500, with over 80% of those persons qualifying for employment in the formal sector employed and with a daily supply of food calories per capita at 2100 (Food and Agricultural Organization, 1991). Over the years, GNP per capita has steadily declined to a low of US\$250 in 1990. Average annual GDP growth rate was negative and below the average for the Sub-Saharan region between 1974 and 1985, and in 1990 (The Global

Coalition for Africa: 1992, World Bank: 1990, 1992). While the labour force has been expanding rapidly, formal employment has never absorbed more than 30 percent of the total labour force and actually declined from 23 percent in 1980 to 9 percent in 1990 (The Economist Intelligence Unit, 1993). Zambia has slid from classification as a middle income to a low income country. It is estimated that roughly one third of the population lives in absolute poverty (Food and Agricultural Organization, 1991).

Agricultural food production has generally been increasing. The food production index has been increasing since 1979 (1979-81 = 100) from 118 in 1987 to 146 in 1991 (United Nations, 1993) while per caput food production has been fluctuating between 88.9 in 1990 and 105.1 in 1988 (FAO, 1991). While annual growth rate of cereal production was around 7% during this period, per caput consumption of the same declined from 191.5 Kg in 1980/81 to 184 Kg during 1988-91. During 1981 to 1988 calorie intake fell below the basic requirement of 2300 calories per day, just over 2000 for most years. This is little different from the situation at independence. However, disaggregated data shows that the rural provinces recorded even lower intakes ranging between 1184.9 to 1365.2 calories (FAO, 1991). It would seem then that access to food is a more serious problem than its supply, although supply could also improve.

FOOD SYSTEMS UNDER STRESS- THE NATURE OF THE PROBLEM IN ZAMBIA

Food systems comprise all of the key factors and processes involved in determining the availability, the flow and use of food in a particular society and thus affect household food security and dietary patterns over time (IFAD, 1993). This includes all processes from food production/ acquisition to food consumption, for example, farm production, food imports, marketing, processing, storage, transportation etc. The efficiency of a food system will greatly influence household food security.

In Zambia, national food security often equated with food (maize) self sufficiency has not directly translated into household food security. The World Bank defines food security thus:

Food security is access by all people at all times to enough food for an active and healthy life. Its essential elements are the availability of food and the ability to acquire it. Food insecurity in turn is the lack of access to enough food. There are two kinds of food insecurity: chronic and transitory. Chronic food insecurity is a continuously inadequate diet caused by the inability to acquire food. It affects households that persistently lack the ability either to enough food or to produce their own. Transitory food insecurity is a temporary decline in a household's access to enough food. It results from instability in food prices food production or household incomes (World Bank, 1986).

To the two types of food insecurity identified can be added seasonal food insecurity, a common recurrence in most rural areas whereby most households experience ~~troughs~~ troughs in availability of food primarily because of reduced stocks of food; and individual food insecurity, a situation where particular individuals within a food-secure household experiences inadequate access to food.

Roughly 33% of Zambia's population are believed to be food insecure and living in absolute poverty. In general, it is believed that households in the urban areas have more intake and volume of food than their counterparts in the rural areas. Within the country, some regions are worse off than others. Food insecurity is higher in the outlying areas, those that are away from the line of rail and have poor inter- and intra- regional infrastructure, making the flow of most commodities both into and within the regions difficult (FAO, 1991). Such areas include the Northern, Western and North-Western and Luapula Provinces.

Unexpectedly, rarely has food insecurity manifested itself in shortage of national food supplies. This situation has occurred mostly during drought periods. Although food production has been increasing in normal times, food intake has declined from a daily per capita consumption of 2300 Kcal in 1980 to 2027 Kcal in 1986-1988 (Luneta, 1993). Consumption did not increase when good harvests were realized in 1988 and 1989. This latter evidence underscores that starvation is not necessarily caused by lack of food but rather by lack of entitlements to food (Sen, 1987). Lack of food is only one of the causes and may be less important and frequent a cause of insecurity than other causes.

Another manifestation of the stress in Zambia's food system is the prevalence of malnutrition and high mortality rates resulting therefrom. In documenting the magnitude of the nutrition problem a draft of the Nutrition Policy Guidelines (Mbomena, 1993) notes the following:-

- About 25% of the under fives are underweight.
- About 8% of births in health institutions are of low birth weight (less than 2.5 kg), an indication of maternal malnutrition. The situation in the community may be worse.
- About 50% of the under fives are iron deficient.
- About 50% of the population are iodine deficient.
- Approximately 16% of children under 6 years of age may be affected by Vitamin A deficiency.
- About 20 to 30% of under five hospital admissions are due to malnutrition.
- Malnutrition accounts for 41% of all deaths in children admitted to health institutions.
- Infant mortality rate has increased from 90/1000 live births during the early 1980's to 107/1000 live births at the end of the eighties.
- Stunting, the commonest cause of protein energy malnutrition, has increased from 17 to 25% among young children.

- Maternal mortality is of the order of around 700-800 or even more per 100,000 live births.

The geographic distribution of malnutrition follows somewhat similar trends as that for food insecurity. Several studies indicate that malnutrition, especially underweight and stunting is greater in rural than in urban areas, suggesting chronic malnutrition. For example, results from the Priority Survey (1993) indicate the prevalence of higher proportions of underweight in Northern, Western, Luapula and Eastern Provinces, serious problems of stunting in Northern and Luapula Provinces and highest rates of wasting in the country in North-Western Province. In the urban areas, wasting was a problem in Lusaka Province and stunting in Central Province.

It should not be surprising that certain areas that are seen to be more food secure than others are reported to have poor nutritional status. This would seem to be true of most urban areas. Food security is but only one precondition of good nutritional status. Equally important are two other conditions namely good care for the vulnerable, including most women and children; and ensured access to health services and a sanitary physical environment. In order to achieve nutritional security these three conditions need to be satisfied. Nutritional security is defined as the ability to provide each family member particularly children and women appropriate food, access to health services, as well as a healthy environment and consistent care at home to enable them achieve their full development potential (Unicef, 1990).

Achievement of the three preconditions of nutritional security is itself dependent on the availability and control of productive resources at various levels. The scheme of interrelationships between different factors in the analysis of nutritional security is presented in Appendix 1.

Apart from food insecurity, undernutrition and high mortality rates, other signals of stress in Zambia's food system including those at macro level include increasing debt burden, high population growth rate, environmental degradation, etc. Some causal factors of this stress both at the macro and micro levels are discussed in the following section.

STRESS IN THE ZAMBIAN FOOD SYSTEM- SOME CAUSAL FACTORS

Following the definition above of food systems, stress in the food system implies anything that prevents the smooth operation of the key factors that determine availability, flow and use of food in a society. Stress can result from natural causes as in drought, floods, earthquakes, severe pest infestation etc. Stress arising from natural disaster can impact seriously on agricultural production and consumption through erosion of productive capital and productivity during the period immediately after the catastrophe. For example, during the drought season of 1991/92 many farmers in southern Zambia lost their cattle, including draught oxen, due to east coast fever. This meant that for the following seasons to come farmers could only cultivate diminished area because they had to rely increasingly on hand cultivation (Woolley, 1993).

Most food crises today can be attributed to man made causes. Stress in the food system may be induced by inappropriate management of the food system or through commissions that make the delivery system of the food chain dysfunctional. It is important to identify some man made stress factors as these can be prevented, while most of the time it is only possible to mitigate the effects of natural disasters.

a) The Policy Environment

Probably the single most influential factor on the operation of the food system, past policies in the agricultural sector in Zambia illustrate how policy can cause stress in the food system.

Some features of agricultural policy during the eighties were agricultural crop pricing that was biased towards urban consumers; and pan territorial & pan seasonal pricing which discouraged on-farm storage.

Because of the low price of maize meal, farmers especially those with good access to markets, found it feasible to sell all their maize at harvest time and then to buy back the cheap processed maize meal. Those in remoter areas were still forced to sell most of their produce because of urgent cash needs and also because of the poor keeping qualities of maize. Thus those farmers who had now come to rely on maize as a main staple exposed themselves to the risks of the market, a market that did not operate so smoothly in the delivery of goods to the remote rural areas because of poor road infrastructure in these areas.

Pan-territorial pricing coupled with subsidization of maize production and marketing led to the prominence of maize production, even in areas where it was less suited, and gradually to monoculture. The displacement by maize of other more locally suited and diversified crops has exposed various communities to climatic risks because failure of the maize crop is synonymous with failure of crop production. It is common knowledge that those who managed to harvest anything during the devastating drought of 1991/92 which hit the whole of the Southern African region are those who planted drought resistant crops like sorghum and those that relied on cassava, also a hardy crop. But drought tolerant crops are precisely the ones that have been replaced by maize in the arid areas. For example IFAD (1993) reports that between 1961 and 1988, the area planted with sorghum and millet recorded an annual decline of 3.2% while their contribution to coarse grain production fell from 13% to under 5%.

Monocropping in certain instances led to a depletion of soil fertility and soil physical structure such that yields could not be

sustained over long periods of time. Small scale farmers in Northern Province have noticed this declining yield trend but apparently cannot pin down the exact source of the problem. For example, during ARPT informal surveys, and participatory research exercises, some farmers in Northern Province have remarked that continuous fertiliser application 'spoils' the land. In some areas of Zambia, notably Southern Province, maize is so dominant over other crops that there is little other land to allow appropriate crop rotations (Woolley, 1993).

In addition, the production of maize has been accompanied with various adjustments in social relationships, for example those relating to the control of labour and how this relates to control over production. Maize is a crop cultivated primarily for cash in most Zambian small-holdings. This is especially true in the northern high rainfall zone where the traditional staples have been cassava, finger millet and, to a lesser extent, sorghum. Although maize has substituted food crops as a priority in resource allocation for production, including labour, this has not been accompanied by equivalent contribution to compensate for loss in food production.

The control of proceeds from maize sales usually does not lie with women who are primarily responsible for feeding the family. This need not cause any problem, only if the cash from maize into food purchases can provide the equivalent of what was previously consumed. This tends not to be the case. Cash from maize must cover several individual expenses of those who control the income as well as other household expenses apart from food, for example school fees and medical expenses. Increasingly, the cash will also buy less and less food as the terms of trade between the urban and rural areas worsen. For example, Geisler (1992) quoting the Daily Express reports that in 1990, a pair of leather shoes was equivalent to the value of a bag of maize and that travelling 80km to the nearest town and back to buy the footwear cost the

equivalent of another one and half bags.

b) Rising Costs of Production

Costs of production have been rising steeply because of removal of subsidies on agricultural inputs. Small-scale farmers have been adversely affected because of their reliance on new cultivars which rely heavily on purchased inputs. With some of the farmers' traditional cultivars 'lost', farmers' immediate response to price shocks has been to employ less than optimal rates of inputs, with negative yield results. For example, a study conducted in Chinsali District by the author (1992) found that only 35% of the respondents applied recommended rates of fertilizer on maize in 1991/92 season as compared to 71% the previous season. 33% of the non-adopters of fertilizer did not adopt it because it was too expensive or not available.

In the longer run, shifts in production are expected and have already began happening. The shift is from those crops that are intensive of purchased inputs to those that require less of such inputs. For example, a crop diversification study in Northern province (Chuzu, 1993) indicates a decrease from the previous five years, in the proportion of farmers cultivating maize and an increase in the proportion growing beans. Beans are usually grown with a minimum or no application of fertiliser.

Although some shifts in cropping patterns may be lauded in the name of production based on comparative advantage, some developments in this area cause concern. Some farmers who are unable to foot the bill of modern production are returning to old cultivation practices. In the crop diversification survey cited above, out of 30 respondents who either did not obtain a loan for fertiliser or purchase some for use, 27 farmers (90%) reported that they had reverted to chitemene (slash and burn) cultivation. What deforestation may have previously been slowed down by a shift from chitemene to more permanent cultivation may again be on the rise.

Thus environmental concerns may be compromised for food security in the short term, with deleterious consequences for future livelihoods.

Geisler (1992) reports that in Eastern Province reduced yields of local maize coupled with reduced production of hybrid maize, which formerly offered additional food reserves, severely threatens the food security of a large number of farming households.

c) Effects of the Structural Adjustment Programme

With the introduction of the structural adjustment programme, disruptions arising from the introduction of new crops have intensified. As Geisler (ibid) notes "the changes in patterns of cultivation, in control of crops and incomes, in time allocations as well as steep rises in the price of consumer goods can seriously upset the balance".

The structural adjustment programme has in most instances worsened an already bad situation. Partly because of the austerity measures of the reform program, inflation, devaluation and tight monetary policy have resulted in the decline of standard of living for many people. Major key indicators of social development i.e. health, nutrition and education are on the downturn because of government's inability to provide these services. Given the declining trend in living standards, the ability of individual households to purchase these services is minimal. How can production and productivity in the agricultural sector increase with an increasingly famished, illiterate and diseased rural population?

In the urban areas and for the employed, it has become increasingly difficult for families to meet food needs in the absence of food subsidies. The purchasing power of urban incomes has been seriously eroded by high inflation rates and a general freeze on real wages. Others have found themselves without jobs because they have been retrenched as required by the economic reform programme.

Meanwhile the meagre social and sanitary services in the urban areas can barely support the burgeoning urban population. This has led to the breakout, now and again, of endemic diseases, clearly not a good formula for achieving food security or adequate nutrition.

d) The Role of Institutions

Institutions, defined by economists Ruttan and Hayami as "rules of a society or of organisations that facilitate coordination among people by helping them form expectations which each person can reasonably hold in dealing with other people" (Stephens & Jabara, 1988), are not always impartial. They tend to serve the interests of those who wield political power.

Institutions can favour one section of the community over another, as when maize pricing and maize meal subsidies previously favoured urban consumers at the expense of higher incomes for farmers. Similarly, stress in food systems can result when there is a breach of trust between policy makers and agricultural producers, as when during the 1993 crop marketing season government failed to honour its obligation to pay for farmers' maize but instead issued promissory notes to be redeemed in February, 1994. Many farmers have since abandoned production of the staple food.

As long as the balance of power is tilted against agricultural producers, there can be no effective link between farmers' needs and the institutions that serve the agricultural sector, including those that regulate the setting of the overall research agenda. Herein lies the importance of programmes like FSUS which seek to empower resource poor and powerless communities to articulate their needs clearly and effectively in order to influence policy.

AGRICULTURAL POLICY

Until the early eighties, Zambia pursued an agricultural policy aimed to achieve various goals including:-

- the achievement of food self sufficiency and food security;
- the generation of increased growth in the agricultural sector;
- the development of small scale African commercial farming;
- the reduction in dependence upon imported inputs in agricultural production, and
- the achievement of a degree of regional balance in agricultural development (Wood et al, 1990).

The policy instruments used to achieve these goals were numerous and included price manipulations, government/parastatal involvement in food production, processing and marketing, wage policies etc.

Price controls of both agricultural inputs, mainly fertiliser and agricultural output were used to maintain low prices of food. In effect price controls were a mechanism to provide cheap food to mostly the urban population who are more dependent on maize meal and are the most politically vocal and influential. The control of maize and maize meal prices meant in turn that input prices had to be controlled. This necessitated the subsidization of fertiliser prices.

An instrument introduced by government partly for equity reasons was pan-territorial and pan-seasonal pricing of all officially channelled crops. This policy brought about increased production of maize, largely through increases in hectareage planted. However, this policy also had some undesirable, probably unintended, effects. There was a big shift to maize production from other crops even in those areas that the latter crops were more suited. Sipula (1988) notes that the move to hybrid maize production for cash from production of sorghum, cassava, millet and local maize rendered farmers more vulnerable to transitory food insecurity. Pan seasonal pricing discouraged storage and most maize was sold at harvest to official marketing channels. Also, the production of maize in far flung areas, distant from main consumption locuses, meant that costs of handling the crop from the farm to processing point were

high.

Up to the mid eighties there was heavy involvement of parastatal boards in the marketing of different agricultural produce. NAMBOARD (the National Agricultural Marketing Board), firstly and then the Cooperative Unions were largely responsible for marketing of food crops, mainly maize. Because of price controls of both agricultural input and output, it was necessary to channel these goods through a central body in order to manage easily the subsidy. With time, it became clear that these official channels could not handle effectively all the produce as well as that their operations were unsustainable without heavy subsidies which government could now ill afford.

Zambia's agricultural development policy up to 1982 is generally viewed as a failure as evidenced by growing food imports, failed diversification on account of the inability of the agricultural sector, with its great potential, to stem the growing balance of payments deficit, resulting partly from falling copper prices. The public debt was also growing.

Since 1983, Zambia has been implementing an economic structural adjustment programme with the backing of the World Bank and the International Monetary Fund. Some features of this program are the realignment of the foreign exchange rate which was overvalued, decontrol of prices, elimination of subsidies, general liberalization of the economy and privatization of previously state owned enterprises.

In the agricultural sector the reform programme has aimed at addressing various issues. These are well summarised by Wood et. al (1990) and include the following:

- the role of the government in agricultural management and marketing,
- the potential role of private sector involvement in marketing,

- the implications of equity pricing, formerly pursued, on signalling efficient production,
- the cost and implications of agricultural subsidies,
- the adjustment of exchange rates to make agricultural exports more competitive,
- the potential role of foreign investment; and
- the development of cost recovery systems for some government services to agriculture.

The programme has been pursued erratically in the past but since the inception of a new government in 1991, it has consistently been followed. Within the new general economic policy framework, articulation of agricultural policy has proceeded in stages and is still on-going. Generally, the policy seeks to address the above issues. An initial policy document titled 'A Framework for Agricultural Policies to the year 2000' has now been refined to a more recent statement of agricultural policy contained in a document entitled ''Statement of Agricultural Policies'' (Ministry of Agriculture Food and Fisheries, 1993).

The document specifies five objectives of agricultural policy. In order of priority these are:

- (1) to ensure national and regional food security through dependable annual production of adequate supplies of basic foodstuffs (cereals and proteins) at competitive costs,
- (2). to generate income and employment to maximum feasible levels in all regions through full utilisation of local resources and realisation of domestic and export market potential,
- (3) to ensure that the existing agricultural resource base (land water and air) is maintained and improved upon,
- (4) to contribute to sustainable industrial development; and
- (5) to significantly expand the sector's contribution to the national balance of payments by, among other things, expanding agricultural exports in line with international comparative advantage.

To achieve these objectives, liberalisation of markets, diversification of crop production and the emphasis on provision of services rather than direct participation of government are seen as high priority strategies. The statement recognises the need for a combined effort between government and the private sector and identifies appropriate areas for each. The policy statement is divided into several areas. A few of these are elaborated on.

Marketing and Pricing. A salient feature in this area is the abolition of price controls, export and import controls, the ceding of marketing and processing functions to the private sector and the emphasis of government's role as facilitator through maintenance of standards and establishment of central market places.

Food Security. The overall objective here is to ensure adequate and stable availability of food supply at household regional and national levels. Government will maintain a national food reserve to stabilise supply and/or prices. Government will maintain an Early Warning System in order to respond quickly to any impending food problems. Government will maintain coordination between institutions dealing with food and nutrition issues and ensure that overall policy direction is consistent.

Agricultural Research. Government will support agricultural research programmes aimed at generating and adapting crop and livestock technologies in order to increase agricultural productivity and diversify production. Research will be prioritised by agro-ecological zone to reflect comparative advantage. Private sector research will be encouraged and government will ensure that economic benefits accrue to such research.

Agricultural Extension. Government will maintain an extension service in order to improve the quality of farming especially among small scale producers. Extension programs will be prioritised by agro-ecological zone to reflect those commodities and technologies

with the greatest potential to improve farm incomes and food security without depleting the resource base. In addition to government extension efforts private farm input suppliers will be encouraged to provide advice and information about their products.

Farmer Organizations. Government will encourage the development of farmer owned and controlled organizations and will encourage such organizations to provide marketing, credit, training and advisory services to members.

Agriculture and Rural Finance. Provision of financial services to small-holders will be liberalized and interest rates and service charges deregulated. Government involvement in the operations of credit institutions will be reduced and the recurrent public cost of agricultural credit will be phased out. Financing of crop marketing activities will be done by the private sector.

Several other areas of intent are listed in the policy statement including agricultural training, animal production and health, fisheries, farm power and mechanization, irrigation, land administration and use, new product development; and standards. As in other areas elaborated on above, the statements in these areas generally emphasize the spirit of liberalization, deregulation and partnership between the government and the private sector.

The agricultural sector is widely seen as one that could make up for income lost from the ailing mineral sector. It has great potential with only about 25% of arable land cultivated. Compared with the manufacturing sector which has been growing faster, agriculture consumes less foreign exchange. In order for agriculture to replace mining agriculture's contribution to GDP would have to grow to 30 percent. It is therefore imperative that a policy framework is put in place which maximises the energies of various competing actors in the sector.

NUTRITIONAL POLICY

There has never been an explicit nutrition policy at the national level. Nutritional issues have in the past been covered by the Ministry of Health or the National Food and Nutrition Commission which falls under the Ministry of Health. Nutritional security, as defined on page 5 can not be the domain of one ministry or one sector but must of necessity encompass other sectors or ministries, for example the Ministry of Agriculture Food and Fisheries, the Ministry of Community Development, Ministry of Labour and Social Services etc. In the past relevant sectors have pursued their programmes independently with little interaction among them. However, there is now increasing awareness and agreement that there needs to be coordination among various sectors to achieve the goal of nutrition.

For example, the National Programme of Action for Children (Republic of Zambia n.a. Draft, 1993) which incorporates both nutrition and food security aspects cites the lack of a nutrition and food security policy which defines the responsibilities and roles of various participating sectors as a major impediment to the achievement of set goals. The document further notes that because responsibility for the implementation of food security and nutrition interactions is scattered among a number of institutions with no formal channel of coordination, the lack of a policy structure means that activities tend to be addressed on a piecemeal basis.

As in many other sectors, the health sector is currently undergoing reform as necessitated by the structural reform programme. There is currently an effort to put together a nutrition policy. The process is still on-going. What can be gleaned to become the policy in future is contained in the Nutrition Policy Guidelines which form a part of the National Health Policies and Strategies. The objectives of nutrition policy as stated in this preliminary document are:

- to achieve the integration of food and nutrition activities into various sector programmes,
- To have food and nutrition considerations incorporated in development plans at all levels,
- to create community interest in better nutrition; and
- to improve coordination of nutrition activities undertaken by various sectors.

Four areas of concentration are singled out for intensified activities. These areas are protein energy malnutrition, nutritional anaemia, vitamin A deficiency and iodine deficiency disorders. Six target groups are identified including households, children under the age of five, pregnant and lactating women, school children, malnourished children and other disadvantaged children, for example, orphans and refugees.

The structure through which the programmes are to be pursued emphasizes grassroots participation through local committees, women's groups, water point committees, parents'-teachers' associations and non-governmental organizations.

Various strategies are listed as to how the objectives are to be achieved. These include, for example:

- food supplementation for all pregnant women at risk,
- regular de-worming among all primary school children,
- provision and promotion of family planning to women of child bearing age to avoid too frequent and too many pregnancies; and
- water supply and sanitation measures with accompanying education for construction and maintenance.

The nutrition policy statement further recognizes the importance of the roles of other sectors in achieving nutritional goals. The statement therefore specifies necessary contributions of these other relevant sectors. For example, to achieve food security, it is recognized that agricultural extension is required to support

agricultural production, and to improve storage and food processing. Agricultural research is necessary to improve productivity on the farms. The promotion of other income generating activities is essential to boost purchasing power for families in order to make food more affordable for them.

LINKS BETWEEN POLICY AND NUTRITIONAL STATUS

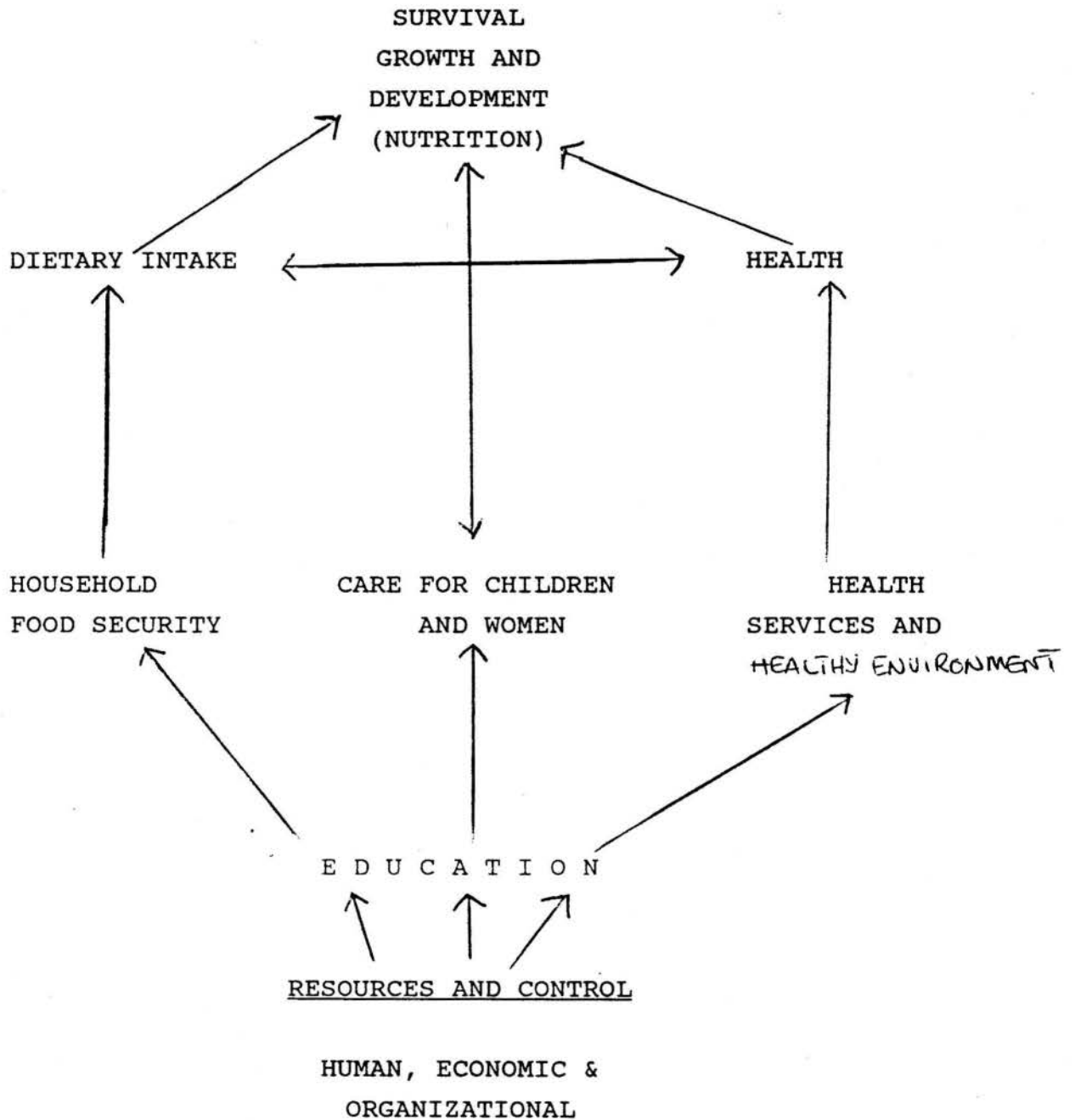
Desired nutritional status can be achieved only if food security obtains, and there is a sanitary environment and good care for vulnerable groups. Thus, nutritional policy is an all encompassing area involving participation of different sectors. Further, the elimination of poverty, the root cause of malnutrition for most Zambians, requires concerted effort from several sectors.

To the extent that agricultural policy contributes to food security, it also contributes to nutritional status. The relationship between agricultural policy and nutrition are well documented in a summary document of the International Conference on Nutrition held in 1992. Agricultural policy influences nutritional status by the way in which it influences food production, food availability, processing and marketing. Agricultural policy can influence the availability of employment, thereby influencing the capacity for households to pay for food and other services necessary to improve nutritional status. Further agricultural policy can also have an impact on time, labour and energy utilization, environmental and living conditions, the nutrient content of foods that are produced; as well as affecting the roles of men and women (International Conference on Nutrition, 1992). The document emphasizes the need to assess carefully the impact of new agricultural technologies and that of cash cropping versus food cropping.

Macro economic policies affect nutrition adversely to the extent that they tax the agricultural sector or reduce expenditure on health and other social services.

Appendix 1

CONCEPTUAL FRAMEWORK/ CAUSES OF MALNUTRITION



Source: Unicef, 1992

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