FOOD SECURITY ISSUES IN SOUTHERN AFRICA

Edited by

Kwesi K Prah

THE INSTITUTE OF SOUTHERN AFRICAN STUDIES
THE NATIONAL UNIVERSITY OF LESOTHO
SOUTHERN AFRICAN STUDIES SERIES No. 4

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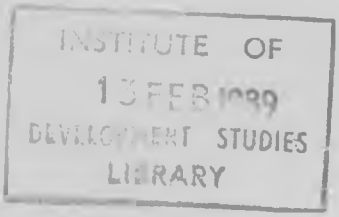

Selected Proceedings of the Conference on Food Security Issues in Southern Africa. MASERU. 12-14 January, 1987

Southern African Studies Series. No. 4. Published by the Institute of Southern African Studies, National University of Lesotho. 1988

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PREFACE

In recent years, the pervasiveness of the food crisis in Africa and its socially debilitating effects on the structure and continuity of African society, has underscored in increasingly stronger and more urgent terms, the need to approach with determination the question of food availability and security, with the object of producing insights and answers which would be of concrete use to policy-makers, planners, and scientists involved in the job of bridging the gap between food needs and available supply of sources.

For various reasons, Southern Africa has not been as serious a crisis area with respect to the availability and supply of food, as other parts and countries on the African continent. While this is the case, indiçations are that under changing or changed economic, political, social, ecological, and climatic conditions, the ability of the Southern African region to cope with its food needs may alter for the worse.

In order for a firm and controllable grip to be maintained on the situation, it is necessary for in-depth knowledge and information on the matter and attendant issues to be available to relevant and interested parties. Such data and studied insights would not only be useful for interested bodies in the region, but also further afield. It is in response to these areas of felt needs that this workshop was mooted by ISAS.

As a senior, and high-level institution in the area, with access to academic and scholarly expertise on such issues and related matters, ISAS presented a proposal for the workshop for the consideration of the Technical Centre for Agricultural Cooperation (Wageningen, The Netherlands) (CTA). The CTA, an EEC-ACP sub-agency, recognizing the importance and timeliness of the topic agreed to support the workshop.

Participants were carefully selected from different countries in the region, plus others from outside the region whose knowledge and contribution was considered useful or even vital to a meaningful workshop on the subject.

Objectives:

(1) Produce studied insights on the subject of Food Security and related issues in Africa.

(2) To solicit the views of policy-makers in the Southern African region on all matters relating to Food Security issues in the region.

(3) To collate up-to-date data and information which would help eliminate the emergence of food crisis in the region.

(4) To suggest concrete measures in both long and short-terms on how food availability and security can be guaranteed in the region.

The workshop was opened by the Acting Vice-Chancellor of the National University of Lesotho, Dr. L.B.B.J. Machobane. Dr. Assoumou Mba, CTA Director, made the introductory remarks, the present editor gave the keynote address. Much of the work was facilitated by Mr. T.M. Narain of the CTA.

The idiom and views presented in this text are attributable only to their respective authors. Our thanks go to Dr. Mansa Prah for proofreading, and to Ms. Laura Bezuidenhout for the typesetting work of the text.

The Editor

MAN DOES NOT LIVE BY BREAD ALONE: BUT MAN CANNOT LIVE WITHOUT BREAD

Kwesi K. Prah

Introduction

In recent years, the issues of food inadequacy, underproduction, high prices, and the attendant problems of hunger, famine, and starvation has scorched the African earth. In one country after the other on the African continent, governments and leaders have been faced with undernourished, malnourished and economically helpless citizens whose daily bread in order to keep body and soul together has become increasingly elusive.

In turn, Africa's dependency on the developed world has increased, with food aid becoming a growing component of the support we seek from the better developed part of the world. Once a net food exporter, today Africa must import huge quantities of food for its hungry millions. Africa is the only region in the world where population growth rates are outpacing food production. The annual income of the average African in 1985 was about 482 US Dollars. That was, 10 per cent lower than what it was in 1974. Its been estimated that about 60 per cent of African children under five are underfed. 3 out of 5 Africans go to sleep every night hungry. During the past decade well over two million Africans have died out of hunger and starvation. Indeed more Africans die out of hunger and starvation than the other tragedy of numerous and endless wars which ravage our continent. Africa is the most critical area in the World Food Crisis.

In the face of the daunting and harrowing facts about hunger, many back out on the score that it is virtually mission impossible . Some tackle the problem intellectually, while others manage to supplement this with praxis. Whichever way it may be in our individual or collective cases, the practical inevitability of hunger for such growing sections of the African population is terrifying in its brobdignagian proportions. Many prefer to ignore the harsh and raw realities of the implications of food shortage. Too often they consist of those segments of society who are invariably too far removed from the existential trials of the situation. There are others possibly on the philosophical right who would contend that most of the facts often marshalled forth to bring home the picture of hunger and food insecurity are merely the result of intellectual predilections and choice between rival and contending ideologies. Some provide a veneer or decor of comprehensive appreciation and sally forth with pretentious panacea for the food crisis. Others prefer the smugness of facile over-simplification of issues, which ducks questions or passes the buck. For Africans today, it is important to face squarely the plight of the millions that face starvation and undernutrition every hour of the day, for on empty stomachs and pinning hunger, development is impossible.

We may have possibly noticed that food security is often an instrument and expression of social and political power, for, food has throughout the world ceased to be merely produce cultivated to be eaten for the maintenance of dear life. It is today, for most, something that is cultivated in order to be bought, sold and manipulated for maximum gain. It is dumped on the high seas by some while others dream or only imagine it like a never-ending mirage.

There are those who are drawn into the production of what they cannot eat for prices which do not pay for their societal needs, while other subsidize the production of food which are ultimately priced out of the purchasing capacity of the wretched of the earth. While some are paid for keeping land unused, others starve.

In Southern Africa, the food crisis is increasing in dimensions. The crisis is severest in Mozambique. Apart from Malawi, Zimbabwe, South Africa and Swaziland, most countries in the region including Lesotho, Botswana, Zambia, Angola, Tanzania, Madagascar and Namibia are faced to various degrees with problems of inadequate food supplies. While the sub-regional problems with respect to food may not be as gigantic as is currently the experience of the Sahel-region in West Africa or the Horn of Africa, it needs to be emphasized that even here the problem is growing and increasingly out-pacing resources. Unless meaningful attention is drawn to these issues, and practical and far-reaching measures are brought to bear on the problem, we may discover in the not too distant future that the monster of starvation is claiming lives, the precious human resources needed for the development effort.

Food aid has helped sometimes in Africa to save the lives of countless people, particularly in emergencies as we have seen in recent years in the Sahel, and the Horn region. But it also needs to be said that food aid in most instances becomes politics. An instrument for holding sway and great power influence over the teeming and starving million of the globe. Hog diet is humanized while others waste the best. Food aid is an instrument of imperialist rivalry and politics. It underscores the realities of contemporary Third World dependency on the great powers.

Novel dietary habits and tastes are encouraged and then flooded with produce whose only true and real justification is profit-making within a global system of unequal exchange.[1]

Population growth patterns are crucial and of incontestible relevance. But such facts are also employed by some observers as scholastically ephemeral djinns and rationalized bogeymen.

The food crisis in Africa, has in the past two decades been underscored by the endemic famine and near famine conditions in parts of the Sahel, the Horn area, Northern Uganda, the Sudan and more recently Mozambique. As a global phenomenon, no area or continent, has in recent years been

confronted with the spectre of food inadequacy on any scale comparable to the African crisis of the past decade and a half.

In its report on *Poverty and Hunger; Issues and Options for Food Security in Developing Countries (1986)*, the World Bank proposed that the concept of Food Security could be understood to mean: "access by all people at all times to enough food for an active healthy life". This formulation endorses two concomitant assumptions. Firstly there should be adequate food supply for self-sufficiency to be viable. Secondly there is need for what is available to be distributed in such a way that it reaches all social elements.

Imperialism and the Food Crisis

One of the most striking features of the food *problematique* is the fact that the crisis of food insecurity does not derive from underproduction or the incapacity of technology, human resources, or capital to provide adequate food for the human population. Neo-Malthusian arguments do not ultimately address the problem satisfactorily. There is no inverse functionality between the growth rate of food production and the population growth rate. As has been agreed the functionality between these two variables is not mathematical but rather social. It hinges largely on the social relations of production and reproduction of material life. These factors determine ultimately the production distribution and exchange of food between nations and states, and also between social groups and classes in all countries.[2]

The irony of the food crisis in this respect was acidly described by the FAO Director-General, Eduard Saouma, on the occasion of the 2nd World Food Day in Rome, 1962.

> *Though there is sufficient food for everyone, 500 million people are still suffering from hunger and disease and even die because they are too poor to buy the food that is already there. In some countries mountains of food are stockpiled, while in*

others hunger and poverty persist. The obese are seeking new cures and the malnourished are offered no remedies. Many pets are pampered while hungry children are forgotten.[3]

Saouma asks if this is not a strange and absurd phenomenon which future economists and historians will consider "mysterious and inexplicable".[4] The whole problem hangs closely on to the global order of international capitalism.

In spite of this fact which any close historical analysis of the roots of the crisis may reveal, international institutions and agencies involved with the African food crisis have tended, as Mkandawire has pointed out, to treat the crisis as episodic, with the emphasis on ecological disasters. While obviously, ecological factors account partly for the crisis, the point needs to be assertively made that "social factors have been decisive even in those cases where ecological disasters would seem, at first sight, to have been the sole cause".[5]

The food crisis in Africa and the "Third World" is symptomatic of a world divided between "haves" and "have-nots", neocolonies and metropolitan powers, superpowers and spheres of influence. It is a condition with a history, a history linked with colonialism.

Colonialism in as far as land and rural production relations in Africa were concerned, proceeded along two routes. Firstly, there were those areas in which land was expropriated as plantations for colonial produce, to be exported to the metropoles and the centres of international capital resources. Secondly, there were other areas in which peasant farming was productively appended to the developing global capitalist system as colonial cash crop producers. Both types of rural colonial economy in Africa resulted primarily in the alienation of rural producers from the means of production. Furthermore, the creation in some parts of Africa, particularly in the Sahel and Southern end of the continent of labour reserves and the abundant migratory labour, the imposition of various forms of taxes especially poll taxes in British Africa, the development of

a consumer culture and the ubiquitous penetration of the cash nexus, accelerated the process of proletarianization in mines. construction, road-building, agriculture, etc.

While all this in practice and effect represented development in the productive forces, the erosion of backward precapitalist forms of production, it siphoned away labour from food production with limited cash and market value and directed labour time and labour power towards the production of items which were not locally consumed but vital for the operation of the international capitalist order.

Concluding Remarks

The post-colonial conditions with respect to food production, distribution and exchange in Africa as contemporarily experienced is largely an extension of the agricultural production edifice constructed under colonialism. Food aid and imperial largess would continue for the nearer future but ultimately, the solution of the African food crisis cannot be found through piecemeal approaches, or solutions which fail to situate the whole problem within the general context of the neocolonial condition. In essence, it is only a symptom of the crisis of neocolonialism and has wider sociological implications.

NOTES

1. See an excellent case study of wheat in Nigeria by Gunilla Andrae and Bjorn Beckman. *The Wheat Trap*, London. 1985.

2. Fidel Castro, *The World Crisis*, London, 1984. p.179

3. E. Saouma. Quoted here from F. Castro. Ibid.

4. Ibid.

NOTES
(Continued)

5. T. Mkandawire, *The State and Agriculture in Africa: Introductory Remarks*. In T. Mkandawire and N. Bourenane (ed). The State and Agriculture in Africa. London. 1987, p.2

THE CONCEPT OF FOOD SECURITY AND SELF-SUFFICIENCY

K. J. M. Dhliwayo

This paper presents SADCC's concept of food security. The paper also presents highlights of the objectives of SADCC's Food Security Sector, its Strategy and Regional Food Security Programme and projects that have been developed to address the problems of food security.

Evolution of SADCC Regional Food Security Programme

At the initial SADCC meeting in Lusaka in April 1980, Zimbabwe was charged with the responsibility for developing and coordinating a Food Security Programme. One of the first steps taken by Zimbabwe was to establish an interministerial committee. Subsequently two technical level meetings of officials of Agriculture Ministries of the nine SADCC Member States were held in Harare in mid-1980 which laid the groundwork for a portfolio of regional food security projects.

The programme has since expanded to twelve projects. These projects are:

Project 1 : A Technical Assistance Programme designed to achieve coordination and cooperation on all agrarian issues.

Project 2 : An Early Warning System for Food Security.

Project 3 : A Regional Resources Information System

Project 4 : A Regional Inventory of Agricultural Resource Base

Project 5 : A Regional Food Reserve

Project 6 : Regional Post-Production Food Loss Reduction

Project 7 : Regional Food Processing Technology

Project 8 : Regional Food Marketing Infrastructure

Project 9 : Regional Food Aid

Project 10 : Recruitment and Retention of Professional and Technical Staff in the Ministries of Agriculture in the SADCC Region.

Project 11 : Regional Seed Production and Supply

Project 12 : Improvement of Irrigation Management.

National Projects with a Regional Impact

The food security programme also provides support for a series of projects which, though national in character, when taken together contribute significantly to the achievement of SADCC's overall food security objectives.

The national projects, which are identified by individual Member States, are generally directed towards production enhancing activities which have an immediate impact on food supply. Notwithstanding the potential impact that these projects could have on the food producing capacities of Member States, experience to date has shown that, with the exception of the food aid related projects, it has proved difficult to mobilise international resources for the implementation of these national projects.

In discussions with representatives of SADCC's cooperating partners it has become apparent that greater emphasis must be placed on the regional aspects of the national projects if they are to receive support as truly regional projects.

SADCC's new Strategy on Food and Agriculture has developed criteria on which these projects should be selected for inclusion in the Food and Agriculture programmes. An appeal is therefore made to cooperating partners to consider these projects on the basis of the criteria that have been developed.

On the basis of the criteria, a reorganisation of all those projects that have already been identified and submitted by Member States will be undertaken. All food security projects that have been identified will be reviewed by the Technical Sub-committee on Food Security together with the Food Security Technical and Administrative Unit with a view to group them, to the extent possible, on a sector or functional basis, e.g. seed/input production, storage, irrigation, etc.

Once the common areas of these projects are identified, and the projects themselves subjected to and pass the technical and economic test, both the sub-committee and the unit can, perhaps with the use of short term consultancies/technical assistance, draw up a single project document. The document would clearly indicate those components to be implemented at a national level and those that can be implemented at a regional level to complement the national activities.

It is also anticipated that in addition to the national food security projects being identified by individual Member States, other national projects will be identified as a result of the implementation of the regional food security programme.

In some cases similar projects may be identified in two or more member countries. This will enable the Member State(s) concerned, with the assistance of the Food Security Technical and Administrative Unit, to prepare a coordinated project proposal that can be submitted to SADCC for action.

Over a period of several months in mid-1980, the various committees reached the following conclusions about the nature of food insecurity in the SADCC region and the steps necessary to overcome them:

i) regional food security was interpreted to mean the *the countries of the SADCC Region should be assured of food supplies, adequate in both quantitative and qualitative terms, to feed the population of the region*;

ii) food production in the region was considered about 10% below food needs in the region;

iii) something less than 5% of the arable land in the region was used for farming in any one year, it was concluded that the region had the potential to attain food security by increasing its own food production and that this should be the strategic principle upon which to base its future food security policy;

iv) in December 1982, Zimbabwe established a Food Security Technical and Administrative Unit in the Ministry of Lands, Agriculture and Rural Resettlement to administer the regional food security programme.

Food Situation in the SADCC Region

Today, there are 70 million people in the nine SADCC states, up by 12 million from the 58 million when SADCC was established in 1980. The population in the region is growing at about 2 million per year and by the year 2000, there will in all likelihood be 100 million people in the region. Even though the rate of population growth is projected to level off at 2.9 percent by the year 2000, the population in the SADCC region may double from 100 to 200 million sometime between 2020 and 2030.

With 50 to 80 percent of the population in the region deriving their livelihood and employment from agriculture and rural non-farm employment, it follows that raising the productivity of the agricultural sector is essential for raising the average standard of living in the region.

Presently there is no definitive assessment of the changes that have taken place in the food economy of the SADCC region in 1985 and 1986. The FAO report *SADCC Agriculture: Towards 2000 (1984)* has only managed to give a general picture of the economic situation in the region. Likewise, SADCC's *Macro Economic Survey, 1986* draws heavily on the FAO report and secondary data published during 1984. The Food Security Research Programme being conducted by the University of Zimbabwe in conjunction with Michigan State University has also produced highlights of some of the important changes in the food situation in the SADCC region. A report by Dr. Rukuni and Professor Eicher argues that the food economy in the nine SADCC states, can be divided into a maize belt of three countries, Zimbabwe, Malawi and Zambia, and six food deficit countries. The maize belt has a backlog of farmer-tested maize varieties capable of producing significant surpluses for intra-regional trade. Since maize accounts for roughly 50 percent of the calories consumed in Zimbabwe and Zambia, and 70 percent in Malawi, it is important for food security researchers to identify the sources of the maize productivity growth and to assess the relevance of the maize production model for other SADCC states and for the sub-regions in Africa.

Currently, Zimbabwe has around two million tonnes of maize in storage which is equivalent to about three years' normal domestic sales by the Grain Marketing Board (GMB). In addition, Zimbabwe has the equivalent of four years' domestic sales (at present rates) of red sorghum in storage.

The sources of productivity of growth in maize, wheat, cotton and other commodities in Zimbabwe cannot be attributed to any single factor such as higher prices or favourable weather. For example, the source of genetic material for maize, wheat and

cotton are a function of several decades of pioneering research. For example, in 1960 Zimbabwe became the first country after the United States to introduce hybrid maize (SR-52) to commercial farmers after 28 years of research on hybrids. Because Zimbabwe and Zambia were members of the Central African Federation when SR-52 was released, it was transferred to Zambia where it was quickly adopted by commercial farmers.

The maize revolution is unfolding in Zambia; new hybrids, and open pollinated maize varieties, higher producer prices, and the reorganisation of the seed parastatal along the lines of a public/private corporation, have propelled maize production.

In Malawi, maize is the staple food and it has been exported for seven of the past ten years. Maize production is based on open pollinated varieties because hybrids acceptable to consumer tastes are not available. Malawi's maize expansion appears to be a function of dramatically higher producer prices, shifting the relative price of maize vis-a-vis other crops, large fertilizer subsidies and a vigorous extension programme.

In summary, the causes of the maize revolution in Zimbabwe, Zambia and Malawi should be closely examined by food security researchers. It is generally believed that the surge in production in the maize belt is *the cumulative outcome of past agricultural research, a subtle array of institutional improvements and dramatic price increases beginning around 1980.* In short, a balanced package of technology and pricing policies is the hallmark of the maize revolution in the three countries. There are still a number of puzzles about the maize revolution that should be explored by researchers; ideally in a programme of comparative studies involving researchers from the three countries.

Policy-makers are now faced with some important policy adjustments in the maize belt. The central policy issue is how to promote efficient diversification into oilseeds, higher valued export crops (e.g. natural rubber), livestock and new products. The rapid increase in maize supplies in the maize belt should be followed by government policies and institutional innovations

to expand employment for low income people in rural areas (maize for work programmes) and diversification programmes.

Development of the Concept of Food Availability and Access to Food

Ten years ago, two economists, Reutlinger and Selowsksy, published an influential monograph on *Malnutrition and Poverty* (1976).

The authors challenged the assumption that higher rates of food production, economic growth and market forces would bring about an improvement in nutrition in Third World countries *within an acceptable time frame*. They also contended that an understanding of the causes of malnutrition or policy solutions would have to address the distribution of food among different groups in the population.

In 1977, an Oxford economist, A.K. Sen, published an influential paper on entitlements and famine and reinforced the view that poverty, or what Sen called the lack of entitlements (land, income, family support systems), is a major cause of famine and hunger. Sen also asserted that the prevailing view of the 1970s, that famine was caused primarily by a food production shortfall, was a simplistic and outmoded concept. Sen later expanded his entitlement thesis in his celebrated book *Poverty and Famine* (1981).

The concept of food security came of age in the early 1980s. In an influential collection of essays edited by Alberto Valdes, *Food Security for Developing Countries* (1981), food security was defined as "the ability of food deficit countries or regions within countries, to meet target consumption levels on a year to year basis" a definition that incorporates the effects of both supply and demand.[1] In early 1986, the World Bank issued a food security policy paper *Poverty and Hunger* (1986) in which food security was defined as "access by all people at all times to enough food for an active and healthy life". Two essential elements are "the availability of food and the ability

to acquire it".[2] SADCC accepts and agrees with this definition because it is not only simple by comprehensive and it reminds one that there are two interactive parts of the food security equation.

The two sides of the food security equation help provide a focus to the food security policy and research agendas in the SADCC region:

1) food availability through domestic production, storage and/or trade;

2) access to food through home production, the market or food transfers.

Food Self-Sufficiency

It is important to ensure that food security is not considered as being synonymous with food self-sufficiency. Food self-sufficiency is a narrower concept than food security. For a particular country, food self-sufficiency can be defined as achieving 100% of the staple food needs of a nation from its own domestic production and regardless of economic and climatic variations.

Given the varying agro-ecological zones of the region and the differing climatic conditions, it is almost impossible that all the countries in the region, or even parts of a particular country, could produce all essential food commodities in sufficient quantities to feed their local population.

Increasing the food self-sufficiency index of all essential food products therefore can only be an ideal policy objective. It is politically a sound objective but in some countries the objective cannot be economically attained. The major challenge for food self-sufficiency researchers or policy advisers to national governments is to compile and assess the real financial cost of increasing the self-sufficiency index of a particular commodity. One has to consider the cost of creating an oasis

out of desert without being dragged into future economic dependency on external financial and other resources.

Food security is a much broader concept than food self-sufficiency. It recognises the constraints imposed by natural and technical endowments and acknowledges the need for some specialisation based on natural resource endowment and technical capability and the role of intra-regional trade on economic development.

SADCC Food Security

Food insecurity exists when there is not enough food for the people who need it. This situation can arise either because of problems in producing adequate food, distributing the food to the people who need it or because people cannot afford to buy the food that is available.

In many parts of the SADCC region, particularly in rural areas, seasonal food scarcity occurs annually before the next harvest. This happens when food from the last harvest runs out before the new harvest comes in.

Last year's harvest may run out because enough food to feed the population may not have been produced. Until the new crop matures and is harvested, members of a household are hungry for weeks or even months at a time. Such seasonal shortfalls can be caused by a complete lack of food production caused by either droughts, floods or invasion of crop pests and diseases, or by inadequate food delivery systems or the lack of people's access to food (effective demand). In the latter case, food may actually be present within a country or an area, but a large segment of the population may not have access to it simply because they lack adequate purchasing power.

The cost of the food may be so high that only the wealthy can afford it or that the poor people do not have the necessary cash to buy it even if it is available at a reasonable price.

Food insecurity may also be due to the fact that delivery or distribution systems break down or lack adequate capacity to move food to those in need of it, causing food to pile up or even rot at docks or in silos.

In the SADCC region, the majority of people; men, women and children, who suffer from food insecurity (seasonal famine) live and work in rural areas. Many are landless labourers or peasant farmers who either do not own land or lack adequate productive resources with which to produce enough food for themselves. They often lack access to credit, agricultural inputs, adequate training and extension services and other technical and marketing facilities.

Food security of the region, therefore, can only be achieved when all the SADCC member states ensure that all members of their populations have access to an adequate diet to lead an active and normal life throughout the year.

Two essential and integral components of food security are food availability (through expanded production, stocks, commercial or other food trade, or through expanded aid) and the ability of all people to acquire that food once it has been made available.

Perhaps it should be emphasised that moves toward achieving national or regional food security begin at household/family levels, particularly in rural areas. Economic analyses indicate that, throughout the SADCC region, the bulk of people who suffer either seasonal or semi-permanent food insecurity are in rural areas. Their poverty or food insecurity problems are a result mainly, of low agricultural productivity, low incomes and inappropriate income distribution.

Objectives of the SADCC Food Security Programme

Although the overall aim of the Regional Food Security Programme is to increase food availability so that the region can be more self sufficient in its basic food needs, the strategy

of SADCC's Food Security Sector clearly recognises that household, national or regional food security cannot be achieved from increased production alone. Food production needs to be complemented by increased cash crop production, enhanced commercial movement of food and agricultural products and inputs within and among Member States and the development of other activities that can generate employment and incomes, in order to ensure that people have both physical and financial access to food.

Within this broad aim, the three objectives of the food security programme are:

1) to satisfy the basic food needs of the population of the region and progressively to improve food supplies to all the people in the region, irrespective of their position in society;

2) to achieve regional self-sufficiency in food supply to the maximum extent possible in order to reduce the region's dependence on external sources of food; and

3) to eliminate the periodic food crises which affect some areas or countries of that region.

SADCC Strategy on Food Security

The food security strategy focuses on a number of the major components of the food supply system, namely; improved food and agricultural production, food storage and processing, the distribution of food and other agricultural products on the one hand, and the accessibility of food to the majority of people in the region on the other hand.

It is strongly felt that the only long term solution to the problem of food security in the region is increased food production because no amount of food aid or other palliatives can solve the problem in a substantive sense. However, the task of increasing food availability and accessibility has to be

undertaken within a broad development framework which includes the development of other agricultural enterprises, the provision of fertilizers, pesticides, appropriate technology, provision of adequate training and extension services and the involvement of large masses of people, particularly the small-scale farmers and the landless in the process of development and employment.

The strategy for the achievement of SADCC Food Security objectives therefore consists of eight principal elements, namely:

i) development of a mechanism for the exchange of technical and economic information;

ii) reinforcement of national food production capacity;

iii) improvement of the food storage, distribution and delivery, conservation and processing systems;

iv) development of cash crops and other agricultural enterprises;

v) establishment of systems for the prevention of food crises and the development of national food security strategies;

vi) establishment of programmes for the control of major crops and crop diseases;

vii) the development of skilled manpower; and

viii) the development of intra-regional trade.

i) Development of Institutions and Mechanisms for the Exchange of Information

The exchange of information and experiences in agricultural production technology and food supply

management is central to SADCC's food security programme. Cooperation in the exchange of information on food production, food supplies, crop prospects, regional resource bases, food trade, prices, and a variety of related subjects contributes to both collective and individual food security.

Much of the emphasis in the regional food security projects is on information gathering and exchange to provide information necessary for planning and decision-making of governments on food matters. Three projects in particular, *An Early Warning System for Food Security, A Regional Resources Information System* and *A Regional Inventory of Agricultural Resource Base* are largely data-base oriented. The first and third of these have commenced implementation whilst the second is shortly due to commence a pre-implementation phase.

ii) Reinforcement of National Food Production Capacity

The SADCC countries collectively contain some of the most fertile agricultural land in Africa, yet few produce enough food to meet the ever increasing internal demand. Food deficit countries cannot continue indefinitely to cover their needs by ever mounting imports. A strengthening of SADCC's agricultural production sector generally and its food production capacity in particular is a vital priority for the achievement of food security.

Despite the considerable agricultural potential of the region, there are significant natural and man-made constraints as well as a wide range of infrastructural and institutional weaknesses inhibiting rapid agricultural development. The main constraints and the ways to overcome them are discussed in *SADCC Agriculture : Toward 2000* (F.A.O., Rome 1983).

The reinforcement of national food production capacity will require the mobilisation of considerable financial and manpower resources. It will also entail institutional and policy changes to provide services and incentives to a large number and broader range of recipients than formerly, notably to small-scale farmers.

SADCC Member States appreciate that the extent to which food production can be increased will depend principally upon action taken at the national level. Individual Member States are engaged in a wide range of activities directed toward the enhancement of agricultural production in the region. Examples include:

* the development of new irrigation schemes and the rehabilitation of existing schemes;

* the expansion of the arable land base;

* the intensification of land use through the application of new techniques and technologies and resettlement programmes;

* the development of new cultivars and an associated expansion of seed production and distribution facilities;

* the introduction of special programmes for the control and/or eradication of major pests and diseases affecting crop and animal production;

* the introduction of special programmes to increase the availability of crop inputs;

* expansion of agricultural credit facilities, particularly for smallholders;

* improvements to rural infrastructure generally,

and to the storage, marketing and distribution in particular;

* improvement and expansion of agricultural research extension and training facilities.

Action in these areas will continue and measures taken will be in accordance with national policies and priorities and the capacities of individual Member States.

At a regional level, reinforcement of food and agricultural production capacity is addressed through cooperative programmes in SADCC's Agricultural Research, Animal Disease Control, Soil and Water Conservation and Land Utilisation, and Food Security Sectors.

Within the food security programme, emphasis is placed on the detailed analysis of factors affecting regional food production with a view to providing Member States with comprehensive information which may be used by those responsible for the development of national programmes. Information from these studies will also be used to identify areas for the development of production improvement programmes involving regional cooperation.

Examples of work currently being undertaken are the projects on: the establishment of a *Regional Inventory of Agricultural Resource Base*, and the *Recruitment and Retention of Professional and Technical Staff of SADCC Agriculture Ministries*. Two other studies directed at enhancement of food production capacity, *Regional Seed Production* and *Improvement of Irrigation Management* are due for the implementation as soon as funding can be secured.

Coordination in the production, procurement and

supply of basic agricultural inputs is another area identified as a priority for regional cooperation in SADCC. Many of the fertilizers, pesticides and agricultural implements used are common to the region's agriculture. SADCC has the industrial capacity to produce some of these requirements. The *Regional Resources Information Systems* project, when operational, will be of considerable assistance in determining the region's requirements for agricultural inputs.

iii) Improvement of the Storage, Marketing and Distribution System

Within SADCC, marketing outlets serving subsistence farmers and the traditional commodities produced by them are often limited. Small farmers often have no marketing outlets for their produce even when governments have encouraged the growing of the crops concerned. The volumes handled by parastatal and cooperative marketing agencies in a number of countries have often declined while overhead and operating costs have continued to escalate. The high costs of operations restrict the possibilities for increasing producer prices and thereby encouraging outlet. Financial and management constraints have limited the parastatals' ability to handle crops efficiently and have caused delays in payments to farmers.

Improvement and upgrading of the delivery, storage, processing and distribution components of the food marketing system are needed to utilise existing supplies more effectively and are an essential complement to measures to expand food production. The additional infrastructure required to improve crop marketing in most SADCC countries consists of improved trunk and feeder roads, expanded storage facilities as well as the adequate provision of trucks,

rail-wagons and shipping by which produce may move from producing areas to consumption (or export) points.

Upgrading of such facilities will primarily be undertaken within the context of national development programmes. However, development undertaken within the context of SADCC's regional transportation and communication programme will have an important bearing on the upgrading of the food marketing system.

Within the regional food security programme, improvements to the food marketing system are being addressed through three projects. The first of these, *Regional Food Marketing Infrastructure*, is still in the feasibility study phase. The other two, *Regional Post-Production Food Loss Reduction* and *Regional Food Processing Technology* are already being implemented.

The lack of sufficient numbers of adequately trained management and operational personnel in the marketing institutions in SADCC has been identified as an important constraint to effective operation. The manpower training needs of the organisations involved in the various post-production food systems will be addressed in all three of the projects above.

iv) Development of Cash Crops and Other Agricultural Enterprises

There is substantial empirical evidence that expanded food production alone will neither eliminate hunger and starvation nor can it achieve household food security. Experience has shown that in some countries silos may be full and grain stock become an economic menace while hunger and starvation continue to haunt a large proportion of its

population. This, therefore, demonstrates the fact that it is not only the availability of food at a national level that assures food security at household level, but also the ability of the population to secure that food.

In economic terms therefore, food security can be seen as a function of, among other things, food production, food distribution efficiency and the levels and distribution of income among the population.

Given that incomes are an important factor in the achievement of food security, the Food Security Strategy seeks to diversify its activities to include those agricultural related activities that will generate employment and incomes for the population of the region. In any case, not all parts of the SADCC region or parts of the member countries can grow enough food for their respective populations. Yet, although some such areas cannot hope to attain food security through their own food production, they can achieve food security by engaging in other income generating activities that their resource endowment can allow. These activities will enhance their ability to purchase food from surplus producing areas or from the market.

Diversification, other than being a means for the achievement of food security, can also be regarded as a hedge against the risk of food crop failure or food commodity price instability.

Attempts will therefore be made to encourage those SADCC Member States that are producing far more than their domestic food requirements to diversify their production and include cash crops and agro-industries including fruit and vegetable canning industries, milling factories, agricultural inputs manufacturing factories, and the development of an informal sector capable of manufacturing simple but

appropriate farm equipment, water carrying equipment, etc. Possibilities of moving towards some form of specialisation based on varying natural endowment and technical/economic abilities will also be encouraged. Specialisation in itself will facilitate the flow and exchange of commodities between and among SADCC Member States and hence contribute towards the mutual integration of the region's economies.

v) **Establishment of Systems for the Prevention of Food Crises and Development of National Food Security Strategy**

The establishment of a regional capability to respond to fluctuations in food supplies caused by crop failure, sudden shortfalls in world markets or major breakdowns in the chain of supply is essential to the achievement of regional food security.

Concerted regional action can provide early warning of the advent of drought and major crop pest and disease outbreaks; can help deficit countries to obtain imports more quickly from surplus countries within the region; may result in economies in procurement and the movement of supplies within the region; can improve the bargaining position of SADCC countries in international markets; can coordinate requests for emergency food aid support from donors; can provide infrastructure facilities for storage in the principal food surplus producing countries; and can provide easier and more reliable access to food reserves within the region at time of shortages.

The strategy adopted by SADCC to achieve this capability to respond to sudden food shortages has two main elements. The regional food security project *An Early Warning System for Regional Food*

Security involves the establishment or strengthening of national early warning units in each Member State together with the establishment of a regional coordinating unit. The system combines crop forecasting with monitoring of food in store, within the marketing system and imports, and will enable countries to take timely action to avert forecasted food shortages.

The second element of the strategy to respond to sudden food shortages is encompassed in the regional food security project, *Regional Food Reserves and Food Aid.* The project will examine options to alleviate immediate constraints in food storage and distribution and define medium and long term policy measures required to bring about a regional food reserve system based on national structures.

Regional cooperation on food security is being strengthened by food strategy development at the national level. National food strategies seek to provide *a coherent framework of policies, programmes and projects, directed to achieving greater food self-sufficiency through an integrated effort to increase food production, improve food consumption and eliminate hunger.* Their development is a response to the recognition that individual projects can best realise their potential when they are part of more comprehensive national policies and with recognition of the need for greater concern with the socio-economic dimension of hunger, alongside food production efforts.

Some SADCC countries are currently preparing or implementing explicit national food strategies whilst others are developing policy programmes which implicitly incorporate the objective usually enunciated in national food strategy proposals. Thus, governments are attaching higher priority to the food sector by devoting more resources and closer

attention to it and by creating appropriate mechanisms to coordinate the activities of the various agencies which are tackling the problems of food production, food consumption and food security.

Whilst the development and implementation of such national food strategy policies is the responsibility of individual Member States, SADCC believe that an exchange of information and experiences in this area would strengthen national food strategy planning and management capacities. Accordingly SADCC is investigating the possibility of establishing some form of institutional arrangements within the regional food security programme for studying food strategies and other issues of agricultural policy on behalf of member countries.

The economic and ecological complementarities which characterise much of the national economies of SADCC are such that cooperation in the design, formulation and implementation of food strategies will have both national and regional benefits.

vi) **Establishment of Programmes for the Control of Major Pests and Diseases.**

Pre and post harvest crop losses from pests and diseases are currently estimated to reduce food availability by 30 to 40 percent or more. Grain losses alone possibly exceed grain imports by several hundred thousand tonnes. Each of the main cereal crops is susceptible to about half a dozen serious diseases and similar numbers of field and storage pests which cause substantial and in some cases, complete crop losses. The problem is not restricted to indigenous species. There are already a number of new pests and diseases that have been introduced into the region accidentally, for example, the great

grain borer recently established in Tanzania from America.

Most member states have control programmes for the reduction of field and storage losses from pests and diseases that are constrained by a lack of sufficient funds, trained staff and appropriate technologies. However, the occurrence of most of the serious pests and diseases across all Member States suggests this as an ideal area for the development of regional cooperation. Possibilities exist for cooperation in the development of new resistant varieties; the deliberate introduction of natural predators and parasites; pest identification services; the transfer of successful technologies; the coordination of quarantine efforts; the preparation of advisory leaflets; and in the research needed for the development of integrated systems of pest control.

vii) **Development of Skilled Manpower**

SADCC recognises that the expansion of food and agricultural production in the region is severely constrained by a general shortage of skilled manpower and is acutely aware of the need for improved training programmes in the region. The assistance of SADCC's cooperating partners in this important area is particularly welcome.

The development and strengthening of national training institutions to meet regional requirements for technically trained personnel for an expanded food and agricultural sector is coordinated by SADCC's Manpower Sector. The specialised training requirements for particular regional and national programmes and project areas will, wherever possible, be addressed through the incorporation of specific training programmes as an integral part of the project proposals, as is the case in current regional

food security projects. The role of the sector's Technical Sub-committee in identifying specialised training needs and coordinating training programmes will also be enhanced.

viii) **Development of Intra-Regional Food Trade**

SADCC recognises the important role of inter-country food trade as a means of increasing regional food self-sufficiency. Indeed the enlargement of intra-regional trade generally is an essential component of SADCC strategies for reducing external dependence and is explicitly recognised in the Lusaka Declaration. With the progress now being made in developing SADCC industries and intra-regional transport and communication, measures to remove constraints on trade are now being studied. Intra-regional food trade will directly benefit from such developments.

However, there are significant costs in the development of such trade in food commodities and a certain size market is needed to make investment in marketing infrastructure cost-effective. In many cases present infrastructure has been designed to serve "north-south" trade without regard to economies which might be gained from promoting intra regional trade.

SADCC considers that another way in which its cooperating partners can participate in the strengthening of intra-regional trade arrangements is by effecting triangular transactions through the purchase of food surpluses from one country in order to meet the needs of other deficit countries in the SADCC region. Apart from transport cost advantages, such triangular transactions will stimulate and foster regional self-reliance.

The development of intra-regional trade links could also allow SADCC countries to opt for a degree of specialisation in agricultural production in line with natural resource endowments, resulting in economic efficiency gains for the region as a whole.

The Regional Food Security Strategy is an integrated policy package and its major elements are complementary. The principal element of the strategy is the exchange of technical and economic information, experiences and know how in agricultural production technology and food supply management. Cooperation on the exchange of information in agricultural production, food supplies, crop prospects, regional resource base, food trade, commodity prices and the constraints to the demand and supply of agricultural commodities, will contribute not only to regional food security, but also to the rapid development of the national economies. In this regard, closer links are being developed among SADCC's Food, Agriculture and Natural Resource sectors and between these sectors and the other sectors in SADCC's programme of action such as Trade and Industry, Transport, Manpower, Mining and Energy.

However, food security will not be attained merely through the exchange of ideas and skills at a regional level. At a national and village level, this information must be used for the enhancement and reinforcement of national food production capacities, i.e. by the farmers and the supporting service institutions such as the credit, research, training and extension organisations.

It is at the national level that the most potent and effective instruments, prices, tax, monetary, credit, budget, public investment, training and extension policies, are formulated and implemented with a view to encouraging farmers to increase food and agricultural production. It is more at the national level that these policy instruments have a greater reach into the rural food economy than any that may be conferred at a regional level. However, through regional activities such as short-term or in-service training, exchange of manpower at

middle-management level, problem-oriented seminars and courses, and through direct assistance in the planning and designing of projects, it is anticipated that national production capacities will be enhanced and strengthened. Through these and other regional activities, greater emphasis will be given to the analysis of alternative national and regional food security and agricultural policies and the exchange of experiences in appropriate public welfare interventions aimed at improving household food security.

The strategy fully recognises that food production *per se* does not, and will not, occur evenly among the SADCC Member States nor will it occur evenly in all areas in a particular Member State. Warehouses or silos in one Member State, or in one area of that country could be overflowing with surplus grains, but all this surplus would not contribute to food security unless there is an efficient system for the storage, processing, preservation, marketing and distribution of that food to where it is needed.

The food security strategy, therefore, recognises the need for an improved and efficient food storage and delivery system and the need to enhance intra-regional trade. A complementary way of ensuring greater national food security is to improve the ability of a country, both at the national and individual farmer level, to store grain effectively. It has been estimated that as much as 20% of food grains are destroyed every year by pests, rot and other storage related problems. The percentage losses incurred in other more perishable food crops such as potatoes, vegetables or fresh milk are probably even higher.

The establishment of a regional food reserve system as an insurance against the risk of food insecurity or famine in the region is underway. The size of the regional food reserve, because it is not costless, will of course depend on what the SADCC Members States are prepared to spend or invest collectively. In addition to providing a hedge against the risk of famine, and, therefore, improving food security, food reserves invariably have other externalities or benefits such as

consumer price stability or incomes to the farmers.

Apart from enhancing food security at regional, national and household level, inter-country trade and an efficient movement of agricultural commodities and inputs among Member States will also have positive consequences in other areas. It will expand the size of the SADCC market, make investments in marketing infrastructure much more cost effective and will encourage Member States to venture into some form of specialisation, not only in agricultural production but also in other economic activities, in line with national resource endowments, technical and economic capabilities.

In economic terms therefore, food security can be seen as a function of, *inter alia*; increased food supply (either through own production, storage or food aid); efficient food delivery systems and the level and distribution of incomes (effective demand).

Experience has also shown that the production of food fluctuates more than the production of any other basic commodities. The production of the major grains (maize in particular) is subject to weather conditions and other hazards in almost every part of the region. When bad weather (drought) hits a small relatively poor country, localised famine or food insecurity results from a food shortfall. The very small-scale farmers (who are the majority) lose their only source of food and income. Shortages may begin which are bound to push up consumer prices and as prices rise, more and more of these poor farmers find it difficult to afford even a minimum diet.

Given that incomes are an important factor in the achievement of household food security, SADCC's food security strategy, therefore, seeks to expand its scope to include those agricultural related activities that will generate employment and incomes for the rural population.

The strategy seeks to identify initiatives which can be taken at regional level to encourage those SADCC Member States that

are producing grain surplus to their domestic requirements and profitable trading outlets, to diversify their production. This could include cash crops, horticultural and industrial crops, dairy and animal products and the establishment of rural agro-industries including fruit and vegetable canning, milling factories, factories for the manufacturing of agricultural inputs and the development of an informal sector capable of making simple but effective farm equipment.

Possibilities of moving towards some form of specialisation by Member States, based on varying natural resource endowment and technical economical capabilities, will also be encouraged and this, once adopted, will facilitate the flow and exchange of commodities between and among the SADCC Member States and hence contribute towards the integration of the region's economies.

The strategy recognises that agricultural production, and food production in particular, is prone to changeable weather conditions and other hazards. Inadequate rainfall (drought) and invasion of pests and diseases, all affect the production of food crops even in highly sophisticated agricultural systems.

In this respect the strategy encourages Member States to establish systems for the prevention of food crises and food losses and to initiate programmes for the control of major crop pests and diseases. Concerted regional cooperation and action can provide early warning of the advent of drought; major crop disease outbreak; help deficit countries to obtain imports more quickly from surplus countries; coordinate requests for emergency food aid; provide facilities for food storage and provide easier and more reliable access to food reserves within the region.

The strategy also acknowledges that, skilled manpower, just like land, water, fertilizers and energy, is an important input to agricultural production. Skilled and experienced manpower still poses a major constraint to agricultural production in the region. The strategy, therefore, incorporates manpower training in the Food Security Programme. This is to be viewed

as an integral part of an effort to enhance the production capacities of Member States.

The development and strengthening of national and regional training institutions which complement project specific in-service training courses is being initiated and coordinated by SADCC's Manpower Development Sector.

NOTES

1. A. Valdes and S. Siamwalla, *Food Security for Developing Countries*, 1981. p.1.

2. World Bank Report, 1986. p.1.

FOOD SECURITY: HUNGER, POVERTY AND POLICY[1]

D. Faber and W. Tims

Introduction

Nineteen seventy-four was in many respects an extraordinary year for world economic relations. In the preceding years, global welfare had increased rapidly, but already then the first signals on the limits of growth were heard.[2] The 1973-1974 biennium was a period of famine, especially in South Asia and consequently a period of a high grain prices in the world market. It therefore seemed that 1974 would be a turning point in history marked by changes in the international balance of power on energy (OPEC was founded) and declining economic growth because of limited availability and high prices of raw materials and environmental limitations to production possibilities. Also, it seemed to be the year of detente between East and West. Under such circumstances it was, certainly from a political point of view, understandable that much more attention was to be focussed on issues of income distribution. Already in 1973, Robert McNamara made proposals with regard to global attack on banishing hunger and poverty.[3] At the same time the New International Economic Order had been placed on the agenda of almost every UN organisation, in order to give developing countries more financial and economic decision-power. Under those circumstances the World Food Conference took place in 1974 in Rome.

In hindsight, one can say that this conference was probably the most successful of the many that took place in the seventies. New organizations were founded, and the power and political will to achieve the objectives of alleviating the poverty and hunger problem were pledged. Not all objectives were reached, like e.g. the size of development funds, the food reserve and the stabilization of the grain markets. Yet, the conference had a refreshing and stimulating effect. It is for that reason that 1974 is taken as a point of departure. Two questions can be posed; what was the perception of the hunger and poverty issue, and secondly how have the perceptions and suggested remedies changed?

Perceptions, 1974-1985

In 1984 the World Food Council published a study on the realization of the 1974 World Food Conference objectives.[4] The report notes that 1974 marked the beginning of the end of the step-motherly treatment that food crops had been getting. In fact, the staple food supply became the thermometer of the welfare of a country's economy and the agricultural sector would be high on every priority list.

Many conference participants were convinced that agriculture had just stepped into a new era, characterized by a short supply of food, that would hardly be able to keep pace with the rapid rate of population growth. Moreover, low reserves could lead to mass starvation. There was serious doubt as to whether major grain exporting countries were able to call forth sufficient production to meet the rising demand for grains, especially from the rapidly growing populations of South and South-East Asia and of the middle income and oil exporting countries, as their per capita incomes increased and consequently the demand for meat and thus feed grains. High and rising grain prices were predicted. Therefore, the lowest income developing countries would not be able to satisfy their demand for food because of foreign exchange problems. Slight

changes in the climate or in the balance of power might already lead to significant famines. Therefore international pressure was brought on by the conference in order to effectively work towards a more stable food supply and look for solutions of the hunger problem. This resulted in a number of new international organizations (World Food Council, International Fund for Agricultural Development, the Consultation Group on Food Production and Investment).[5]

It was generally agreed that in order to solve the hunger problem food production in the food deficit countries must be increased, and if successful the problem would be solved within ten years, provided that annual growth of production was 4 percent (as compared to 2.8 percent in the 15 years prior to that).

Increased food production in the developing countries and the consequent food self-sufficiency was seen as the best way to insulate a country against high world market grain prices. At the same time, international agreements on food reserves and food aid must provide the poorest developing countries with an increased measure of food security in case of temporary short-falls.

Today, many of those assumptions, that were assumed to be valid in 1974, have been shown not to be so. Others were shown to be in themselves correct, but too limited. For example the fact that food was supposed to become increasingly scarce has not been borne out. Already in 1975 a slightly improved grain supply led to a decline in world grain prices. Compared to international prices of other commodities, in real terms, grains were in 1976 at a twenty-five year low and the price trend has since that time been downward. Since 1950, prices of wheat and rice have declined to about 50 percent, while maize and sorghum have also declined by more than 45 percent.

It should be noted that these price levels were reached without realising the "4 percent" objective of the World Food Conference. In the period 1973-1983 agricultural growth was

about 3 percent (excluding China).

One could regard the present situation as comfortable with low prices, excess stocks in many developing countries, excess production capacity, and with surpluses of grain in the USA and the EEC that are being kept artificially outside the market.

It is important to explicitly state this, as one may conclude that the many statements made by politicians in the mid-seventies with regard to the food production situation were based on no more than a few years of below normal agricultural production and therefore seem to be immediately ready to declare the immediate situation as a new trend for the future (i.e. the 1973-1975 period was rather an exceptional period of short supply and high prices). This shortsightedness has not been an unmixed blessing; the objectives of the World Food Conference in 1974 emphasized self-sufficiency and independence from the world food markets, while in fact because of the continuing declining world market prices did not make this necessarily the best alternative and could be even counterproductive.

However, what has been gained by the crisis is the much better understanding and assessment of the hunger and malnutrition problem. Hunger is no longer regarded as an incidental matter, rather it is a chronic problem of the fragile groups that are characterized by poverty of resources and shortage of purchasing power. Nevertheless, the improved understanding and large grain supplies have not led to obvious solutions for these groups. Differences of opinion continue to exist as regards the long-term and short-term effects and the costs and benefits of various investment programs.[6]

However, a strategy solely focussed on increased food production, is not the solution, regardless of the fact that most of the poor find their livelihood in the production of food.

Finally, the past ten years has shown a shift of attention from Asia to Africa. Asia has been more successful in increasing food production and thus became less import dependent.

However, it still has the largest number of malnourished people, although in terms of percentage of the population, there are considerably more malnourished people in Africa.

The Food Security Dilemma

The developments during the past decade and the increased understanding of the food problem as a chronic characteristic of most countries in South Asia and sub-Saharan Africa, has caused a more careful judgement to be made on possible alternatives for food policies in those countries. A major part of this wider discussion took place around the concept of "food security".

Initially food security was defined in terms of supply only. Increased production and increased self-sufficiency, and consequently a number of measures regarding food aid and food reserves were linked with it in order to secure access to food supplies outside the country in case of a short-fall; a very commercially-oriented definition, where adequate market facilities became the objective. However, this did not mean adequate food supplies for the people in those countries.

This limited definition of food security, has, for a number of years, led to discussion on international grain reserves and the increase of food aid, as well as discussion on the package of measures in developing countries to increase food production.[7]

As is well-known, the international negotiations on an international food reserve failed, due to irreconcilable differences between North and South, East and West, and even among industrialized countries. Food aid negotiations however did much better, thereby realizing to an important extent the objectives.

Extending the Objectives

The emphasis that was placed on food production in developing

countries led to much criticism on price policies in those countries. Many documents and studies pointed to the ill-effects of low prices, set by state-owned marketing boards. Price increases were essential to provide enough incentive for the farmer to produce for the market. Too low prices also hampered the introduction of appropriate technology, new crop varieties, land improvement and irrigation.[8]

However, price policies have shown that it is not sufficient to just increase farm-gate food prices, as only a very small part of the farmers produce a marketable surplus, while the majority of the population depends on the market for its food supply. Such a policy can therefore hardly be justified from a point of view of improved income distribution of food. Practically, higher producer prices causing higher consumer prices in the short term do not augur well with the actual consumer price policy. Governments have therefore monopolized grain food markets to maintain low food prices in the urban areas to such an extent that the domestic price in many countries has fallen below the world market price. Price increases tend to become great political hurdles; the 1987 developments of the Zambian maize flour price are a case in point.

Such political factors play an important role. The food prices often remain low, even if they go at great cost for the government. Too low food prices lead invariably to low food production, in the medium and long run, causing the government to import increasing quantities of food grains at higher world market prices and therefore have to be sold with a subsidy. These subsidies are a source of increasing concern, as they comprise often a large and increasing part of the government expenditure and thus hamper long-term public investments like infrastructure, education, and health.

In 1979 the World Food Council started using the broader definition of 'food security', defined as a function of all factors that maintain and improve per capita food consumption, in particular in the poor countries, of food production, of

income distribution, and of foreign exchange earnings.[9] In terms of this definition the food problem will not be solved by stimulating economic growth and food production alone, unless an extra dimension is added, that concerns itself with increases in per capita incomes and consumption; especially as regards the poor. Also, equal emphasis should be given to the demand side and to the supply side of food.

Side by side with measures to increase food production, guaranteed imports and stable market prices, measures are designed, directly or indirectly, that lead to improved access of the population to food. The two approaches of course meet at the point of food price policy. But could these two approaches be reconciled? Is there a price policy the effects of which are positive for both demand and supply?

Problems and contradictions abound, as it is extremely difficult to find an optimal and consistent policy for both sides: e.g. poor versus rich producers, poor versus rich consumers, consumers versus producers, urban population versus rural population and within each of these groups; and long-term versus short-term effects. The actual policy of most developing countries with regard to the food situation does not nearly resemble what it should be if the stated objectives are to be pursued and obtained. However, such decisions are being taken every day. It is, therefore, extremely important that policy makers are made aware of the necessity to include and weigh both objectives equally (of production and of distribution) in their deliberations. Measures to improve food production, especially price policy, can only be justified if consecutively measures are taken that guarantee the poorest of the poor at least a minimum amount of food. This is not only socially justifiable, but also because adequate food is an investment in the productive capacity of people.

Not only Third-world governments, but also donor countries must be made aware of the fact that it is equally important that funds be used for agricultural investment as it is to invest in food distribution systems.

The food situation and development in sub-Saharan Africa is in stark contrast with many other developing countries. Agriculture in sub-Saharan Africa has been characterized by stagnating production of food and other crops and high population growth rates. Even though a number of countries have exhibited growth of about three percent (Cameroon, Ivory Coast, Kenya, Malawi, Rwanda, and Swaziland) during the 1970s, thereby maintaining per capita availability, in many other countries this has not been the case. In those countries population growth has outstripped growth of agricultural production, resulting in even lower per capita food availability. Add to this the adverse weather conditions in many countries and the global economic recession that seems to have hit particularly hard in Africa and a rather complete picture emerges of the problems that have beset sub-Saharan Africa.

In about twenty countries per capita income growth was less than one percent over 1969-1970, while 15 countries showed a negative growth. In the least developed countries food consumption declined by almost 13 percent in the 1969/1971 - 1979 period. Much like the per capita income, degree of literacy, and employment opportunities, the per capita food production in this subcontinent is also among the lowest in the world, notwithstanding the fact that this region is even more agriculturally oriented.

Because of stagnating agricultural production, food imports have increased substantially and therefore also food import dependency. A large part of the physical deficit, not based on effective demand but on minimum requirements, is donated as food aid. Prospects that this will change in the near future are bleak notwithstanding the fact that the past agricultural season has shown a quantum jump increase in food grain production.[10]

One of the underlying reasons of stagnating production may be found in the actual price policy. Because of this a large number of countries that were food exporting or self-sufficient

became food importing. Only in a number of cases can adverse weather conditions be blamed for it.

The major reason for such poor performance must be found in the high rate of population growth and in the low priority that governments have given to agricultural production.[11] Many African governments now accept the criticism of the low priority they have given to the agricultural sector. This has been shown probably most clearly in the recent FAO - Regional Conference in Africa in September, 1986.[12]

Poor agricultural performance, it is well-known by now, has a number of side-effects. We already mentioned food import dependency and low per capita income growth. Another one is the large rural-urban migration stream as the rural population is forced to look for productive employment elsewhere. However, industrial development in sub-Saharan Africa has not been such that the absorption capacity is large enough to accommodate the rural influx.

To be able to guarantee adequate food supply in the urban areas, the government has taken control of the food distribution system. African governments have been extremely anxious to take over the food distribution system, to prevent manipulation of the market mechanism and the food supply. Only a few of such public marketing organizations have succeeded in setting up a well-functioning food distribution system.

It is not necessary to recall here the urban bias that has been present in the development and agricultural policies of many African states. Especially low food prices for the urban consumers, have resulted in low commodity prices for the farmer, as only few countries can afford to pay farmers incentive prices and keep food prices to the urban consumers low by means of food subsidies or input subsidies to the farmers.

Also, the infrastructure necessary to process and move the agriculture produce to the urban centres has seriously

deteriorated in the course of time, thereby aggravating the problems of marketing any surplus.[13] Not nearly sufficient investments have been allocated to the rural areas, in spite of the fact that more than two thirds of the population lives and works in rural areas.

Exports of agricultural commodities are a major foreign exchange earner, with which part of the imports can be financed. Because government policy has favoured cash crops to food crops, commercial production of food crops declined even more. The production level of food crops became therefore more and more determined by the subsistence requirements of the farmers themselves. Because of this, urban food supply became problematic, forcing the governments to increase food imports. Moreover, over the past number of years, the prices of export crops have seriously declined, resulting in diminishing foreign exchange earnings. Also, over-valued local currencies have hampered exports of these crops, while export crops are often also heavily taxed at the borders, resulting in very low revenues to the farmer relative to world market prices (e.g. the farmers in Ghana and Ivory Coast, receive 30-40 percent of the ruling world market price, the remainder is government revenue).

In spite of the high export taxes, food crops have shown to be a feasible alternative. A number of countries however, such as Kenya, Malawi, Zimbabwe and Zambia have adjusted relative prices so that food crops are being favoured to export or other crops.[14] Import dependency, food security and balance of payment problems have caused the governments to stimulate domestic food production.

Another cause for low levels of production may be found in the man/land ratio, the level of technology applied, and the degree of mechanisation. Research has shown that sub-Saharan Africa agriculture suffers from a labour shortage in peak periods, such as cultivation, planting, weeding and harvesting. This shortage can be largely attributed to the male-female division of labour, the applied traditional cultivation practices, and the often sub-optimal nutritional status of the people who have to do the

work.

In addition, the low levels of input cause yields also to be low, resulting in the area cultivated to be extended to a size adequate for subsistence for the farm family, thus adding to the already scarce labour supply. It would, therefore, seem reasonable to strongly promote agricultural small-scale mechanization, however, the low level of schooling and the inadequate infrastructure hamper such development for the time being.

The continually declining food situation in Africa has caused the question to be posed as to how one could set up a well-coordinated programme focussing on reversing that trend. International organisations and donor countries alike were attempting to solve these issues in the mid-seventies. It did take some time, however, for the seriousness of the impending crisis to be realized by governments in the affected countries. Also the World Food Conference of 1974 had already discussed the question of how seriously food deficit countries could cooperate with donors to combat hunger. That question was posed, realizing that aid alone would not be the solution; it requires also a commitment from the respective governments.

The limitations, that cause small scale mechanization not to be a feasible alternative, must be thoroughly researched and if possible removed.

Grain Policies and Trade

Because of the serious problems with respect to grain production in sub-Saharan Africa there appears to be a need for serious discussions on effective grain policies.

Three main issues for such a discussion are proposed:

- more freedom for cereal prices to adjust according to market conditions and to become more differentiated between regions and seasons;

- restructuring rural marketing organizations to enhance their reliability and effectiveness;

- to provide a larger role for private sector activities.[15]

One point of view is to allow cereal prices, to differ by regions within a country, reflecting different transportation costs. There can be no doubt that equal-price policies throughout a country have no economic justification, and lead to serious distortions and inefficiencies of resource use, and to large fiscal burdens with no economic return. Permitting regional price differentiation is therefore a sound proposal, but requires substantial adjustments. People living far away from main market centres and transportation hubs have benefitted for many years from nationwide uniform prices; supplies from outside the region are cheaper and surpluses sold fetch higher prices than would be the case in a free market. This advantageous change of their terms of trade is an incentive to go and inhabit areas from which they would have migrated under a differentiating system of regional prices.

Under these circumstances, transitional measures are required to permit these people to adjust to the worsening of their terms of trade. Taxing people, who live closer to such market centres, and who experience an improvement of their terms of trade as a consequence of the very same policy change, might be appropriate to finance the costs of the transition.

It is recommended to abolish floor (producer), and ceiling (consumer) prices, which have been governing many cereal price policies until now; the main reason being that their implementation has been seriously flawed and that consequently the illegal character of private trade at other prices has been hampering the development of an efficient marketing system.

It is obvious that it constitutes a major step which will be considered too radical by most governments. In its place it would be preferable to draw a sketch of the process, divided into smaller steps, which leads to a more effective management of a more efficient marketing system. In that sketch it should

be emphasized that it is not the purpose of this recommended reform to move to a system which is entirely outside the government's control. Instead, it should focus on ways in which the government can limit itself to manageable interventions, not exceeding the administrative capacity of the public sector, but clearly of sufficient strength to maintain a fair degree of stability in cereal markets.

It requires first of all a more detailed discussion of ways in which import quantities of cereals should be planned and managed in the medium and short run, as those are bound to remain a government responsibility, and will continue to be one of the strongest instruments of its cereal market policies. The relation between crop-monitoring, ordering of shipments and arrivals and the management of import availabilities should be stressed, as together they constitute one of the main ways to manage cereal markets in import-dependent countries. In countries which hover from year-to-year around in self-sufficiency in market terms, domestic procurement constitutes an additional element of policy which needs to be dovetailed in volume terms to import planning.

It should also be noted that developing countries do require to formulate price objectives for basic necessities and to use a limited range of instruments to achieve these objectives. Price objectives should bear a relationship to international prices adjusted for domestic trade and transport costs. But international prices should not be followed too closely. For two reasons at least. First, government may want to avoid sharp short-term fluctuations of international prices to be transmitted to their domestic markets and therefore adjust their own price objectives on the basis of moving averages rather than day-to-day changes. Secondly, the subsidization of cereal exports by a number of industrial countries depresses the international price of cereal below economically justified levels. It would therefore be short-sighted to take those low prices as the yardstick for setting domestic prices of cereals. Taxing cereal imports, to avoid the disincentive which they otherwise may provide to domestic procedures, is therefore economically justified.

One should furthermore stress the fact that an import charge on cereals does not necessarily constitute protection to one's farmers. If the import tax simply captures, as tax revenues for the government, the amount of subsidy which taxpayers in exporting countries have financed, there is no reason to consider this as protection. It amounts to a kind of additional development assistance, from taxpayers in the exporting countries to the government of the importing country. In fact, if the import tax rate on cereals remains lower than the average tax rate on all other imports, one can still maintain that farmers in the importing country are receiving negative protection, as non-farmers are more protected than farmers.

Free-trade arguments suggest that import taxes should be reduced. But for the poorest developing countries, import taxes constitute a major part of fiscal revenues and their reduction runs therefore counter to the arguments for the strengthening of public services. Conversely, one can argue that import taxes on cereals should be at least as high as average tariffs on all other products in order to avoid negative protection. This would no doubt imply even higher import taxes on cereals than can be argued by way of the subsidy argument and the depressing effects which subsidies exert on international prices.

Whatever way governments decide to set import prices of cereals, their influence on domestic markets should be allowed to play their part by way of careful planning and phasing of import quantities and stock management. It should not be the purpose of cereal policies to set prices at a particular level but to supplement and strengthen the role of private trade. Prices should be permitted to fluctuate between boundaries around a central price, the latter being determined on the basis of (trends in) world market prices. One can think of boundaries of 10-15 percent above and below the central price, with release from stocks in public hands when the upper boundary is approached, and market purchases by the public sector when the actual price tends in the direction of the lower boundary. Both government sales and purchases take place with private traders, rather than directly from producers and to consumers,

although the latter possibility should be kept open in order to be able to cope with failures and trade collision.

Presenting options for cereal market management in this way is probably more effective in moving governments towards more effective policies than stating that floor and ceiling prices are to be abolished. Also, a system of the kind as suggested here can be helpful in convincing the government that seasonal price variations should be permitted as long as these stay within the price boundaries and are made effective through a flexible import and domestic procurement policy. It can be dealt with through one and the same sets of instruments.

The larger role in cereal marketing for the private sector is the third major issue. Clearly, there is a potential here for a more efficient system and the issue is no doubt a valid one, particularly against the background of the failures to manage cereals markets by the public sector. But again in this case, a more detailed and carefully executed analysis ought to be made of the conditions which need to be met if the private sector is to be made the principal factor on these markets. At least the government should make sure that it has adequate means at their disposal to maintain market stability between predetermined boundaries and to circumvent the private trading sector if markets do not operate well or efficiently. Both for the public and the private sectors, it is essential that these conditions and rules are clearly specified, in order to avoid unexpected antagonistic situations or to harm producers or consumers of cereals.

Food Strategies

The Consultation Group on Food Production and Investments (CGFPI), founded in 1974 and abolished in 1977, made a first attempt to commit developing countries to the development of long-term plans for their food supply. The incentive was to receive an additional commitment of funds from donors to guarantee sufficient funds to execute the strategy. This approach has fortunately not died with the CGFPI, but has

been further developed by WFC and taken to the international fora.

The strategy had been further worked out to give equal weight to production issues and to problems of consumption and distribution. Furthermore the WFC stressed that such strategies required commitments from both sides; the developing country should attach high priority to food security, implement the necessary policies and execute a planned investment programme; while the donors were to commit themselves to guarantee the necessary funds for a number of years.

Although the value of food strategies has increasingly been recognized, the approach has not been wholly successful. Also commitments by developing countries and donor support have been lacking.

The strategy should only be developed for those countries that have not yet made an adequate planning effort; in such circumstances a food strategy can help to coordinate the work of the relevant ministries and organisation and to streamline and dovetail the respective programmes. Also the donor countries had not adequately anticipated the commitments that would be asked of them. Development of a food strategy is more than just sending two expatriates, submission of a plan for approval and obtaining funding:

- Food strategies require an in-depth analysis of the national food and agriculture sector, often hampered by inadequate information.

- Developing alternative futures is difficult in itself, but to be successful it requires a solid commitment of the government, concerning policy reforms.

- In most countries a serious problem towards achieving a better food supply is the lack of organizations that can adequately implement programmes and objectives. Therefore a thorough analysis of the institutional structure is necessary.

There has not yet been an accepted procedure that has lead to donor commitments once food strategies have been finalized.

Food strategies are no different from other planning exercises. They will only be useful if they become a continuing process. In Africa that stage has not been reached.

Donor Coordination

In the last few years the issues of development management and donor coordination have been high on the agenda of many international organizations: UNCTAD, UNDP, the OECD/TAC and the World Bank being the main ones. The national food strategy was meant to become a new instrument for a well-coordinated aid effort for countries with serious food problems. So far, it has not lived up to its potential, yet it remains interesting to find out whether it still can. Such a coordinated aid effort is especially necessary in the least developed and smallest countries. A strategy may become a basis for fruitful discussions regarding food and agricultural policy and may provide the opportunity to coordinate the ensuing aid effort on a mutually acceptable basis. In such a case, special attention can be paid to the reinforcement of the policy execution capacity together with the core agencies for economic management. Discussing a food strategy in a donor meeting stimulates coordination and adds to the status of the paper. The document must therefore have some standing, obtained, for example, by peer judgement or by specialized agencies. Such donor coordination efforts may be organized under the umbrella of the WFC, but with the participation of the FAO and the IBRD.

Outlook

Aid to Africa with regard to food and agricultural development has increased rapidly over recent years. Rough estimates show that concessional aid to sub-Saharan Africa are equal or have

surpassed aid levels to South Asia. On per capita basis this means much more aid to Africa, as the Asian population is four times larger in size. Unfortunately, this allocation of aid does not reflect the distribution of income. It appears that the 'Africa aid' effort has not generated additional funds but has caused a re-allocation away from Asia. But it has been made clear that aid measured in money terms is not necessarily the most relevant criterion.

The food security problem is not only a financial problem, but is to a large extent a problem of policy formulation and the availability of adequate and capable core staff. Or alternatively, if the funds would increase, the channels for such funds would become blocked. Already now the marginal efficiency of the additional aid flow has been seriously reduced, thereby adding to the criticism of some donors as well as of the South-Asian governments who contend that the size of the aid effort to sub-Saharan Africa is disproportional to the size of the needy population as compared to South Asia.

To adequately help Africa, well-documented plans concerning food policy and their execution must be made. Although it is accepted on paper, that Africa's problem requires a long-term solution with a large-term commitment, carefully developed plans and activities, and building analytical capability, it is not well respected in practise. The time has come that African governments must realize the seriousness of the crisis. In doing so, the donors should stand ready to support any efforts to abolish hunger and poverty. Their willingness to commit themselves for a multi-annual period might positively influence the effort.

NOTES

1. This article draws upon an earlier published version in the *International Spectator* by W. Tims and D.C. Faber, 39-9:536-546. 1985.

NOTES
(Continued)

2. Meadows et. al., *The Limits of Growth*. University Books, New York. 1972.

3. World Bank President's address to the Annual Meeting. Nairobi, Washington D.C. 1973.

4. World Food Council, *The World Food and Hunger Problem: Changing Perspectives and Possibilities. An Independent Assessment*. Rome. 1974-1984. 1984.

5. World Food Council, *Progress Towards the Eradication of Hunger, a Multilateral Decade For Food*. Rome. 1974-1984. 1984.

6. C.P. Timmer, W.P. Falcon and S.R. Pearson. *Food Policy Analysis*. Johns Hopkins University Press. 1983.

7. FAO - Committee on World Food Security, Director-General Report on World Food Security: *A Re-appraisal of Concepts and Approaches*. Rome. 1983.

8. G.S. Tolley, V. Thomas and C.M. Wang. *Agriculture Private Policy and the Developing Countries*. Johns Hopkins University Press. 1982.

9. World Food Council. *Toward the Eradication of Hunger*. Rome. 1980.

10. M. Rukuni, and C.K. Eicher. *The Food Security Equation in Southern Africa*. Mimeo. 1986.

11. World Food Council and the Government of Netherlands. Workshop held on Food Security Strategies for African Countries. The Hague. 1980.

NOTES

12. FAO - *African Agriculture: The Next 25 Years*. Rome. 1986.

13. In this respect it should be noted that an increasing part of Dutch (food) aid to the Sudan, Ethiopia and the Sahelian countries has been allocated to infrastructural Improvements, in order to be able to get the food to deficit areas.

14. M. Rukuni, and C.K. Eicher. Op cit. Mimeo. 1986.

15. Centre for World Food Studies. *Cereals Policy Reform in the Sahel: A Critical Assessment of the Berg Reports done for the Netherlands*. Ministry of Development Cooperation, Amsterdam - Wageningen. 1986.

THE FOOD SECURITY EQUATION IN SOUTHERN AFRICA

Mandivamba Rukuni and Carl K. Eicher

Introduction

Most scientists are surprised to learn that the continent of Africa occupies a land area larger than the combined area of the United States, Western Europe and the Peoples Republic of China. The immensity of Africa provides a sober note of reality and humility in discussing food security policy issues, and research priorities for Africa. Even if one moves from the 50 states in Africa to 45 states in Sub-Saharan Africa, we are still dealing with an immense land area of six complex and diverse sub-regions, 45 states, 7 colonial histories, 1000 ethnic groups and countries at different stages and prospects for development.

The immensity of Africa should be juxtaposed against the desire of donor agencies to deal with African problems. Currently, almost every donor and international agency is working overtime to develop a response to the "African Crisis". But in the rush to develop general policies, programmes and models for Africa, a word of caution is in order. Gerald Helleiner, a Canadian Economist with 25 years of research experience on Africa reminds us that:

> *Beleaguered policy-makers in developing countries have become quite tired of generalised advice... Un-*

> *happiness with global prescriptions has rarely been as vociferous as it has become in recent years in the context of the 'conditionality' attached to IMR, World Bank and other official lending (Agencies)?. The IMF and the World Bank usually deny that they employ a single "model" for all their member countries. Whether these institutions, qua institutions, do or do not, there can be little doubt that, within them, generalised prescriptions abound.*[1]

Helleiner's wise words of experience are also instructive for researchers. The central question is: How can researchers grapple with the immensity and complexity of Africa? This is an especially difficult problem because agricultural development is a highly location specific process. While African researchers naturally reject the idea of trying to develop a single institutional model (e.g. agriculture extension, research, credit marketing), for Africa, how does one advance a "manageable" agenda for studying common problems such as household, national and regional food security?

There are at least four options open to researchers in organizing social science research on a Sub-Saharan African basis. The first option is the generation of cross-country statistical data that examines almost all countries. This approach is routinely used by the United Nations Food and Agricultural Organisation (FAO), and the United States Development Aid (USDA), the two world sources of agricultural trade data. The second approach is to go to the other extreme and promote ad hoc, in-depth country studies, relying heavily on historical data. For example, two political scientists with several decades of experience in Zaire, Crawford Young and Thomas Turner, recently completed a definitive study entitled: *The Rise and Decline of the Zairian State*, (1985).[2]

The third option is to focus on a common problem or sector in one of the six major ecosystems, such as the Sahel or Southern Africa. The FAO report *SADCC Agriculture : Toward 2000*, (1984)[3] is an example of this approach.

The fourth option is to organise an African-wide program of comparative studies of individual countries that are linked by a common analytical framework for the study of a particular policy question such as food security. While there are obviously advantages and disadvantages of each of the four approaches, Michigan State University (MSU) agricultural economists, in cooperation with agricultural economists in Africa, invested most of 1984 in developing a proposal to carry out a programme of comparative studies of food security policy options in Sub-Saharan Africa. The characteristics of the MSU Food Security Comparative Studies Programme are that:

1) a common analytical framework is used to examine the interplay of technology, institutions and incentives in each country and/or region;

2) the goal is to generate empirical information on how policy changes affect the achievement of household, national and, in some cases, regional (e.g. Southern Africa) food security objectives;

3) each country study includes an explicit, up-front commitment, to develop indigenous scientific capacity to design and carry out empirical studies, process data locally and assist in developing local institutional capacity for policy analysis;

4) the studies are designed to complement on-going food security studies such as the EEC-financed studies in Zambia, Mali and Rwanda and SADCC's 12 food security studies and projects;

5) research results are synthesized through conference, seminars and working papers. All working papers are distributed free of charge within Africa.

MSU food security studies are underway in four countries - Senegal, Mali, Rwanda, Somalia, and one region - Southern Africa. In Southern Africa, the work is being carried out through a sub-contract with the Department of Agricultural

Economics and Extension of the University of Zimbabwe. The University of Zimbabwe has placed initial emphasis on studies of Zimbabwe, but there are plans to broaden this coverage to several other countries where local researchers are interested in cooperative research on common themes.

The MSU research programme has been underway for about 18 months in Mali and Southern Africa, 12 months in Rwanda and a few months in Senegal and Somalia. Naturally, there is a budget limit on every research project. If more funds were available, it would be desirable to undertake studies in a larger number of countries - perhaps 8 or 9 - to cope with the immensity of Sub-Saharan Africa. This is an important issue in light of the fact that 18 of the 45 countries in Sub-Saharan Africa have a population of less than 3 million. MSU's present research programme does not include any country with a population of less than 3 million.

We have chosen to organise our paper around four interrelated themes:

1) The Changing Food and Agriculture Situation in the World Economy, Africa and Southern Africa;

2) The Food Security Equation;

3) SADCC's Updated Policy and Strategy for Food Agriculture and Natural Resources: Implication for Food Security Researchers;

4) Six Food Security Research Challenges in Southern Africa.

The Changing Food and Agriculture Situation in the World Economy, Africa and Southern Africa

The University of Zimbabwe's food security research programme in Southern Africa was conceptualised in 1984 during the prolonged drought in the region. Hence, it is important to reassess our research priorities in the context of a rapidly

changing food and agriculture outlook in Southern Africa and in the world economy

Global Overview

The world food pendulum has swung widely every decade or so. India's disastrous harvests of 1965/66 triggered the 1966 world food crisis that was followed by the Sahelian drought and world food crisis of the early 1970s. The doomsday prediction of the mid-1970s have been followed by a much more optimistic assessment of the world food outlook in the 1980s, punctuated by the Great African Famine of 1985 where a conservative estimate of 300,000 people died. In general, the code word of scarcity has been replaced by the appealing slogan that the world is now "awash with grain".

The current global food outlook can be summarised as follows:

* If food in the world were becoming more scarce, its real price would be tending upward. But the real price of wheat in world markets has been falling for well over a century. By the beginning of the 1980s, the real price of wheat in world markets was roughly half what it was 120 years earlier in 1860. Moreover, the price has declined significantly since 1980.

* The real price of maize in world markets started to decline after World War II with the spread of hybrid maize. Global maize stocks in 1986/87 are 160 million metric tons (a 25 year high) compared with 40 million metric tons in 1983-84.

* The recent export quotation for No 2 yellow maize at US Gulf ports was US$ 70/ton in 1986 as compared with US$ 100/ton in 1985 and US$ 160/ton in 1980.[4] Thus maize is at an all time low in real terms.

* The production of rice is running ahead of demand in several large countries in Asia - e.g. India and Indonesia,

requiring large adjustment programmes to shift to alternative crops.

* The production of sorghum is running ahead of domestic demand in China, India and Zimbabwe.

* Major adjustment programmes in Third World agriculture call for expanded agricultural policy research to guide the adjustment process and minimize the losses to various parties in the agricultural industry. However, only two percent of the operational research budgets of the 13 International Agricultural Research Centres (the CGIAR System) is for agricultural policy research.

Despite this global assessment of food abundance, there are an estimated 300 to 900 million people who suffer from malnutrition in the Third World[5]. The FAO estimated that 100 million or roughly one-fourth of the total population of Africa were not receiving a calorie-adequate diet in 1985.

The central question that flows from this paradox of global food abundance and malnutrition is whether malnutrition is a food problem or a poverty problem? Over the part decade, pioneering research by a number of social scientists and nutritionists has helped answer this question. There is now overwhelming evidence that malnutrition is not caused by a shortage of food production but by a lack of purchasing power and poverty[6], or what Sen calls a lack of entitlements[7].

The empirical evidence that poverty is a central cause of famine, hunger and malnutrition emphasises the need for stepped-up research on the relationships between poverty, hunger, famine and malnutrition because expanded food production cannot end hunger.

The Food Situation In Africa

In 1960 when 16 African states won their independence, Sub-Saharan Africa was a modest net exporter of food. But rapid

population growth, declining food production and the Sahelian drought turned Africa into a net food importer in the mid to late 1960s. Food imports escalated during the Sahelian drought of the early 1970s, levelled off and then surged again starting in 1980. In 1985, Sub-Saharan Africa accounted for 87 percent of grain imports: wheat, 50 percent; rice, 22 percent; and maize, 15 percent.

The most important change in Africa's food import picture over the past two decades is the increasing importance of food aid. In the late 1960s, food aid accounted for 5% of the total grain imports, increasing to 18% in the mid-seventies and 40% in 1983-85. From 1980 to 1985, food aid increased five-fold while commercial food imports were stagnant. In 1985, food aid accounted for 7 of the 12 million tons of Africa's food imports.

Africa's food crisis in the 15 year period from `1970-84 can be captured in a single statistic; food production grew at half the population growth rate during this period. But in 1985, food production made a dramatic recovery because of near normal rainfall throughout most of the sub-continent.

Crop production set records in Burkina Faso, Chad, Somalia, Sudan, Kenya and Zimbabwe.

Table 1 shows that indices of per capita food production increased in 1985. In 1986, the food situation has continued the 1985 pattern except in a few countries such as Botswana, now in the fifth year of a drought.

The central question that flows from this overview is the nature of the recovery in food production and availability; is the 1985/86 recover a temporary phenomenon or the beginning of an upward trend?

Food Situation in the SADCC Region

Today, there are 70 million people in the nine SADCC states, up 12 million from the 58 million when SADCC was established

TABLE 1 : AFRICA: INDICES OF PER CAPITA FOOD PRODUCTION BY COUNTRY, 1976-1985
(1976-78 = 100)

COUNTRY	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85
ANGOLA	105	101	94	93	92	85	85	83	80	79
BENIN (DAHOMEY)	98	101	100	102	90	87	83	77	93	102
BURUNDI	99	100	99	96	92	95	93	92	83	85
CAMEROON	103	103	93	96	93	92	86	82	86	89
ETHIOPIA	94	96	108	115	104	102	113	99	89	83
GHANA	106	98	95	012	100	95	89	74	87	88
GUINEA	101	99	98	95	95	91	96	92	93	96
IVORY COAST	95	101	102	112	118	120	110	103	120	120
KENYA	99	102	97	88	86	89	93	89	75	82
LIBERIA	101	102	97	98	100	100	98	100	101	99
MADAGASCAR	105	103	92	95	95	90	90	92	89	88
MALAWI	99	97	103	99	99	102	106	101	100	98
MALI	99	93	106	102	98	110	107	99	82	97
MOZAMBIQUE	96	100	102	100	99	99	96	73	78	84
NIGER	97	98	103	108	111	102	99	96	61	88
NIGERIA	99	100	100	101	103	99	98	84	83	97
RWANDA	102	99	98	105	100	104	105	105	84	93
SENEGAL	110	78	110	83	73	97	98	69	72	80
SIERRA LEONE	99	103	97	96	92	88	86	89	80	79
SOUTH AFRICA	96	101	102	96	101	109	94	80	85	80
SUDAN	97	102	100	80	88	103	82	78	67	98
TANZANIA	100	99	100	100	96	96	93	94	90	95
TOGO	101	93	105	109	104	103	98	89	98	102
UGANDA	100	98	101	92	87	90	94	96	96	95
BURKINA FASO (UPPER VOLTA)	96	100	103	103	94	104	102	94	87	109
ZAIRE	102	101	96	97	97	100	101	100	95	96
ZAMBIA	109	101	90	84	84	93	84	91	87	92
ZIMBABWE	102	100	96	81	83	99	86	64	71	95
AFRICA, SUB-SAHARA	100	100	100	99	99	101	97	89	90	95
SUB-SAHARA LESS SOUTH AFRICA	101	100	99	99	99	99	98	90	90	96
ALGERIA	109	94	96	94	102	95	91	84	85	102
EGYPT	102	99	98	99	99	98	99	98	98	98
LIBYA	104	95	100	91	91	97	98	95	97	98
MOROCCO	109	85	105	99	99	78	98	90	91	93
TUNISIA	106	96	97	95	101	106	117	108	119	141
AFRICA NORTH	106	94	100	98	100	92	99	95	95	101
ALL AFRICA	101	99	100	98	99	99	98	90	91	97
AFRICA LESS SOUTH AFRICA	102	99	100	99	99	98	98	91	92	97

SOURCE: USDA, 1986

in 1980. The population in the region is growing at about 2 million per year and by the year 2000, there will likely be 100 million people in the region. Even though the rate of population growth is projected to level off at 2.9 percent by the year 2000, the population in the SADCC region will likely double from 100 to 200 million sometime between 2020 and 2030.

With 50 to 80 percent of the population in the region deriving their employment from agriculture and rural non-farm employment, it follows that raising the productivity of the agricultural sector is essential for raising the average standard of living in the region.

Presently there is no definitive assessment of the changes that have taken place in the food economy of the SADCC region in 1985 and 1986. The FAO report *SADCC Agriculture : Toward 2000*, (1984) is a hurried report that has been overtaken by events. Likewise, SADCC's *Macro-economic Survey*, (1986), draws heavily on the FAO report and secondary data published through 1984.

The following overview highlights some of the important changes in the food situation in the SADCC region. The food economy in the nine SADCC states can be divided into a maize belt of three countries - Zimbabwe, Malawi and Zambia - and six food deficit countries. The maize belt has a backlog of farmer-tested maize varieties capable of producing significant surpluses for intra-regional trade. Since maize accounts for roughly 50 percent of the calories consumed in Zimbabwe and Zambia, and 70 percent in Malawi, it is important for food security researchers to identify the sources of maize productivity growth and to assess the relevances of the maize production model for other SADCC states and for other sub-regions in Africa.

We shall sketch some of the highlights of the *SADCC Maize Model*. Currently, Zimbabwe has around two million tons of maize in storage which is equivalent to about three years' normal domestic sales by the Grain Marketing Board (GMB). In

addition, Zimbabwe has the equivalent of four years' domestic sales of red sorghum in storage.

The sources of productivity growth in maize, wheat, cotton and other commodities in Zimbabwe cannot be attributed to any single factor such as higher prices or favourable weather. For example, the sources of genetic material for maize, wheat and cotton are a function of several decades of pioneering research. For example, in 1960 Zimbabwe became the first country apart from the United States to introduce hybrid maize - SR-52 - to commercial farmers after 28 years of research on hybrids. Because Zimbabwe and Zambia were members of the Central African Federation when SR-52 was released, it was transferred to Zambia where it was quickly adopted by commercial farmers.

The maize revolution is unfolding in Zambia; new hybrids, and open pollinated maize varieties, higher producer prices, and the reorganisation of the seed parastatal along the lines of a public/private corporation, have propelled maize production to 1.1 million tons in 1986, enough for domestic consumption until the 1987 harvest begins next June.

In Malawi, maize is the staple food and it has been exported for seven of the past ten years. Maize production is based on open pollinated varieties because hybrids acceptable to consumer tastes are not available. Malawi's maize expansion appears to be a function of dramatically higher producer prices, shifting the price relatives of maize vis-a-vis other crops, large fertilizer subsidies and a vigorous extension programme.

In summary, the causes of the maize revolution in Zimbabwe, Zambia and Malawi should be closely examined by food security researchers. We are of the opinion that the surge in production in the maize belt is **the cumulative outcome of past agricultural research, a subtle array of institutional improvements and dramatic price increases beginning around 1980.** In short, a balanced package of technology and pricing policies is the hallmark of the maize revolution in the three countries. There are still a number of puzzles about the maize revolution that should be explored by researchers; ideally, in a

programme of comparative studies involving researchers from the three countries.

Policy makers are now faced with some important policy adjustments in the maize belt. The central policy issue is how to promote efficient diversification into oilseeds, higher valued export crops, import substitution crops for local industries (e.g. natural rubber), livestock and new food products. The rapid increase in maize supplies in the maize belt should be followed by government policies and institutional innovations to expand employment for low income people in rural areas (maize for work programmes) and diversification programmes.

But it takes a decade, on the average, to produce and farmer-test new varieties for crop diversification. SADCC should plan its agricultural research and human capital strategy to meet the needs of year 2000. For example, should SADCC develop a regional fruit and vegetable research programme? Should SADCC invest in research on jojoba, nitrogen-fixing trees and some of the thousands of different fruit species not in commercial production? Vietmeyer reports that about 3000 different fruit species are found in Africa, Asia, Latin America, the Caribbean and the Pacific Islands but "only four - bananas, pineapple, papaya and mango - have been developed into major crops"[8]. SADCC's regional agricultural programme should pose the question: What are the strategic long-run investments in basic science, post-graduate training, applied research, and infrastructure to speed agriculture diversification and rural industrialization over the next 10 to 15 years?

The maize revolution in the centre of the SADCC region poses several questions for SADCC, when six SADCC countries are food importers:

1) Can the genetic backlog of maize varieties be transferred to some of the food deficit countries?

2) How long will it take the ICRISAT/SADCC Sorghum and

Millet research programme, located at the Matopo's station outside Bulawayo, to generate white sorghum production technology for low rainfall areas in the region where maize is a risky crop? In short, can white sorghum research achieve the same genetic potential of maize in the SADCC region?

3) Should SADCC's food-dominated regional research portfolio be expanded to include research on import substitution with crops such as natural rubber export crops such as jojoba, spices, cut flowers, etc.

We believe that SADCC agriculture has reached a turning point where the nine states can be divided into a maize belt of three surplus producing countries and six food deficit states. This dichotomy into surplus and deficit sub-regions has important implications for SADCC's food and agriculture policy, for SADCC's food security studies and projects and the University of Zimbabwe's food security research programme. We shall discuss these issues in the section on Six Research Challenges.

The Food Situation in South Africa

The objective of maize policy in South Africa is to maintain self-sufficiency plus a surplus for export during the years of favourable weather. Whereas maize production in Zimbabwe normally ranges from 2 to 3 million tons, maize production in South Africa reached a peak of 14.6 million tons in 1981, with about 50 percent used in livestock feed. The 1981 production record was the culmination of large price increases, and extremely favourable weather. In 1981 and 1982, maize and maize product exports made up nearly 30 percent of the total value of agricultural exports.

In 1982-85, because of the drought, South Africa imported maize and, in late 1983, it became a net food importer for the first time since World War II. Production returned to normal in 1986 (9 million tons).

The Food Security Equation: Food Availability and Access to Food

Ten years ago, the two economists, Reutlinger and Selowsky, published an influential monograph on *Malnutrition and Poverty*, (1976).

The authors challenged the assumption that higher rates of food production, economic growth and market forces would bring about an improvement in nutrition in Third World countries within an acceptable time frame. They also contended that an understanding of the causes of malnutrition or policy solutions would have to address the distribution of food among different groups in the population.

In 1977, Oxford economist, A.K. Sen, published a paper on entitlements and famine and reinforced the view that poverty, or what Sen called the lack of entitlements (land, income, family support systems), is a major cause of famine and hunger. Sen also asserted that the prevailing view of the 1970s, that famine was caused primarily by a food production shortfall, was a simplistic and outmoded concept. Sen later expanded his entitlement thesis in his celebrated book *Poverty and Famine*, (1981).

The concept of food security came off age in the early 1980s. In a collection of essays edited by Alberto Valdes *Food Security for Developing Countries*, (1981), food security was defined as "the ability of food deficit countries, or regions within countries, to meet target consumption levels on a year-to-year basis", a definition that incorporates the effects of both supply and demand. In early 1986, the World Bank issued a food security policy paper *Poverty and Hunger*, in which food security was defined as "access by all people at all times to enough food for an active and healthy life." Two essential elements are "the availability of food and the ability to acquire it". We believe the Bank's definition will gain international acceptance because it is simple but comprehensive and it reminds one that there are two interacting parts of the equation.

In summary, it has taken about a decade for the results of research on the link between poverty, hunger, famine and malnutrition to gain acceptance in policy circles. This time lag is about the same (a decade) as technical scientists require to develop improved plant varieties.

The two sides of the food security equation help provide a focus to the food security policy and research agendas in the SADCC region:

1) food availability through domestic production, storage and/or trade, and

2) access to food through home production, or food transfers.

To date, SADCC member states, SADCC's regional programmes and donor agencies, have given priority to the food availability side of the food security equation. Food production research, food production campaigns, early warning systems and expanded grain storage capacity, have been emphasised in the first six years of SADCC's history from 1980 to 1986.

On the food access side of the equation, Botswana has clearly taken the lead in the SADCC region, and probably in all of Africa, in developing a national food strategy, and implementing four innovative programmes, to cope with drought and household and national food insecurity[9]. Botswana made a strategic decision during the 1979 drought to develop a permanent institutional capacity to cope with drought and to ensure that all members of society have access to a calorie-adequate diet. When the present drought initially took hold in 1982, Botswana further strengthened its food security programmes such as *Pula for Work*, supplementary feeding for underweight children, school feeding programmes, food production input packages and a project to reduce the dependency on rainfall by bringing more land under irrigation. About 600,000 or 60 percent of Botswana's population were receiving some type of assistance from these food security programmes at some time during 1986. We are of the opinion

that a SADCC conference should be convened to study what can be learned from Botswana's pioneering food security experiments.

The food access or demand side of the food security equation is an uncharted area in terms of research and policy experimentation (with the exception of Botswana). There is a need for food surplus SADCC member states to expand their policy analysis capability to determine how to achieve adequate food consumption for groups of the population who are inadequately nourished in years when aggregate supplies are adequate or in surplus.

In food deficit countries, the key policy issue is, what can be done to assure adequate levels of food consumption for the entire population at all times at the least possible cost. In food deficit countries, a key research topic is how to develop an efficient food production system, including cost-effective ways to increase the index of food self-sufficiency of key staple foods while reducing the risk of importing food from South Africa under present emergency conditions in the region.

It is not time to discard several appealing concepts such as food first, food self-reliance and food self-sufficiency. Although these concepts have a powerful emotional and political appeal, they have a built-in food production bias. Moreover, they cannot help answer the key political question: *What is the most cost effective mix of domestic food production and storage, food trade and/or food aid to meet national food security needs?*

But food self-sufficiency can be a useful operational concept if it is supported with underlying economic analysis. For example, if Botswana wants to increase its self-sufficiency index of sorghum from 30 to 80 percent through subsidised credit, mechanisation and irrigation projects, what will it cost in real terms to increase the self-sufficiency ratio? How much additional employment can be generated? What is the political value of reducing the ratio of staple food dependency? These are hard political economy type questions that can only be

answered by in-depth research. We are of the opinion that the concept of food security should replace food first, food self-reliance and food sufficiency.

SADCC's Updated Policy and Strategy for Food, Agriculture and Natural Resources : Implications for Food Security Researchers

When the Southern Africa Development Coordination Conference (SADCC) was established in Lusaka in 1980, the overarching aim was to accelerate regional cooperation of the nine member states to further social and economic development and reduce their dependence on South Africa. Seven regional food and agriculture sector programmes were established by SADCC, and Zimbabwe was requested to provide leadership in carrying out one of the seven sub-sector programmes - regional food security. We shall now examine the evolution of SADCC's food security programme from 1980-86.

The Evolution of SADCC's Regional Food Security Programme

The initial SADCC meeting in Lusaka in April of 1980 did not provide Zimbabwe's Ministry of Agriculture with a definition of regional food security. Following the Lusaka meeting, the Economics and Markets Branch of Zimbabwe's Agricultural Ministry was charged with developing a food security programme of work in the short space of six weeks.

One of the first steps taken by Zimbabwe's Economics and Markets Branch was to set up an Inter-Ministerial Committee. Subsequently, two technical level meetings were held, which comprised of officials from Agriculture Ministries of all nine SADCC countries. These meetings, in mid-1980, laid the groundwork for a portfolio of nine regional food security projects. Over a period of several months in mid-1980, the various committees reached the following conclusions about the nature of food insecurity problems in the SADCC region and

steps to meet these problems:

1) regional food security was interpreted to mean that the countries of the SADCC region should be assured of food supplies adequate in both quantitative and qualitative terms to feed their populations;

2) food production in the region was considered about ten percent below food needs in the region;

3) since less than 5 percent of the arable land in the region was used for farming in any one year, it was concluded that the region had the potential to attain food security by increasing its own food production, and that this should be the strategic principle on which to base its future foods security policy;

4) to attain an overall aim of the policy it was considered that a number of measures are necessary which, taken together, would have the effect of reducing constraints to, and encouraging increase in, food production throughout the SADCC countries;

5) nine regional food security proposals were approved by the Council of Ministers at Maputo in November 1980. These proposals were later developed into projects and they became the region's food security policy and programme of action.

In December 1982, Zimbabwe established a Food Security Administration Unit in the Ministry of Agriculture to administer the regional food security programme.

Agricultural Policy Reforms Underway in Member States

Since agricultural, nutrition and economic policies may be more important than national and regional food security projects *per se* (e.g. grain storage, early warning systems) in influencing the achievement of national and regional food security objectives,

it is important to review some of the significant policy shifts by SADCC member states over the past few years. A careful review of the recently completed food and agriculture background policy statements, and other sources reveal that a number of significant policy reforms are underway, including the following:

* Significant experimentation is underway in pricing policy reform. For example, Zambia recently introduced floor prices to replace official guaranteed producer prices for maize for the 1986/87 crop year. The policy is designed to reduce the cost of storing unexpected large crops. But farmers are permitted to take advantage of market price movements and sell their maize at above floor prices.

* All nine member states are pursuing policies to increase local food production and reduce food imports but, there is little supporting economic analysis of the real costs of increasing the self-sufficiency ratios of staple foods in member states.

* No member state is pursuing a policy of increasing food imports from neighbouring states, thus raising fundamental questions about a possible conflict between national food self-sufficiency policies and SADCC's objective to expand intra-regional trade.

SADCC's Updated Policy and Strategy for Food, Agriculture and Natural Resources

In May, 1986, SADCC's Council of Ministers met in Maputo and requested the Agriculture Ministries in the Region to review the entire regional food and agriculture portfolio, Subsequently, a working party was appointed and, over the course of three months, an updated policy and strategy was developed for food, agriculture and natural resources. The updated strategy was approved by the nine SADCC Ministries of Agriculture in Mbabane on October 9, 1986.

SADCC's Updated Policy and Strategy for Food, Agriculture and Natural Resources is designed to achieve the following basic objectives:

- Provide a framework to integrate SADCC's regional and national policies and projects, and harmonize investments that cut across sectors such as agro-industry and human capital improvements;

- Reinforce and facilitate the efficient growth of food and agricultural production in member states;

- Increase rural incomes and facilitate employment generation in member states in order to help translate the food needs of rural people into effective demand to purchase food in the market;

- Assist member states in designing policies, programmes and projects to increase household food security and to ensure an adequate diet for all members of society;

- Increase national and regional food security to ensure against bad harvests, natural disaster and reduce food dependence on South Africa and the world economy;

- Foster the efficient development, utilisation and conservation of natural resources and protection of the environment;

- Generation of domestic savings and foreign exchange to finance a gradual structural transformation of agriculture-dominated economies to those producing a larger percentage of industrial goods and services.

The highlights of SADCC's Updated Policy and Strategy for Food, Agriculture and Natural Resources are as follows:

* The primary goal of the sector is to increase household, national and regional food security.

* Food security is defined as ensuring that all members of a household, nation or region have access to an adequate diet to lead an active and normal life. Its two essential elements are food availability through expanded production, storage and trade and the ability of all people to acquire an adequate diet.

* The mandate of SADCC's regional food security programme has been broadened to include both sides of the food security equation - food availability and access to food.

* Since poverty is a key cause of household food insecurity, expanding food production and the achievement of national food self-sufficiency will not automatically end food insecurity. Therefore, income and employment generating projects in rural areas (e.g. crops, raw materials for processing, small ruminants, fishing, small scale industry, etc.), are essential components of increasing national food security.

* The updated strategy reiterates the importance of increasing food production; particularly in food deficit member states.

* Agro-industries and rural small scale industries are an integral part of the updated agriculture strategy.

* The food orientation of the regional agricultural research strategy has been broadened to include cash crops, industrial crops and export crops in order to generate production technology to expand rural incomes, foreign exchange earnings and help rural families purchase a better diet.

* Because of the need to anticipate rather than respond to changes in the world food economy, policy analysis capability should be strengthenend in the region.

* The strategy expands the mandate of the Southern Africa Centre for Cooperation in Agricultural Research (SACCAR)

to include postgraduate training in agriculture and natural resources and charges SACCAR with developing a regional blueprint to strengthen post-graduate training in agriculture on a long term basis. SADCC invites its cooperating partners - bilateral and regional - to work closely with SACCAR in planning and helping implement this important activity.

* Programmes in natural resources - soil and water conservation, fisheries, forestry and wildlife - will be developed and intensified for their direct contribution to developing, utilising and sustaining the natural resource base and their direct and indirect contribution to increasing food, agriculture and livestock production.

* The strategy requires close liaison between the food, agriculture and natural resources sectors and the industry and trade sectors in order to increase regional cooperation in the planning, production and trade in seed, fertilizer, pesticides, farm machinery, food processing and other agro-industries.

SIX FOOD SECURITY RESEARCH CHALLENGES IN SOUTHERN AFRICA

We now turn our attention to the research challenges that flow from SADCC's updated policy and strategy for food, agriculture and natural resources that was approved on October 9, 1986. Before proceeding, we believe it is important to clear up the following issues:

(a) the definition of food security;

(b) the need for a balanced approach to address both sides of the food security research equation;

(c) the need for a multi-disciplinary approach; and

(d) an appropriate time frame.

We define food security as ensuring that all members of society have access to enough food throughout the year to lead an active and healthy life. The two key components of food security are *food availability* (through domestic production, storage and/or trade) and *food access* (through home production, purchase in the market or food transfers).

It is important to ensure that food security is not defined as being synonymous with food self-sufficiency or agricultural development. Food self-sufficiency is a narrower concept than food security. Food self-sufficiency can be narrowly defined as achieving 100 percent of the staple food needs of a nation from domestic production and storage under all weather probabilities. Increasing the food self-sufficiency index (e.g. Lesotho's drive to raise its self-sufficiency index of wheat from 30 percent to 60, 80 or 90 percent) is a valid policy objective. The challenge for food security researchers is to compute the real cost (and risk reduction) of increasing the self-sufficiency index of a particular commodity. But we observe that few countries in SADCC currently have the data, analytical skills and time to carry out such exercises. The University of Zimbabwe study of the wheat industry is an example of the type of research that is needed to add more "substance" to debate on food self-sufficiency.

Food security is a narrower concept than agricultural development. Agricultural development is defined as the process of increasing agricultural output while remaining silent on distributional issues (e.g. access to food). If food security researchers define their research agenda as broadly as agricultural development, they will become bogged down with research on credit, land tenure, processing, etc. *In sum, food security is a much broader concept than food self-sufficiency and a much narrower concept than agricultural development.*

The second background issue is the balance between research on food availability (supply issues) and food access (demand issues). While the issue of the proper balance between research on food availability and food access must be sorted out in a country specific context, *we estimate that at least*

two-thirds of on-going food security studies in Southern Africa are focussed on food availability issues, i.e. food production and storage issues. There is now an urgent need to shift the ratio to at least 50 percent on food availability and 50 percent on food access research in the near future.

The third background issue is the need for a multi-disciplinary team to pursue research on both sides of the equation. While it is easy to achieve multi-disciplinary cooperation in an international conference centre, it is difficult to bring together researchers from the appropriate mix of disciplines to carry out food security research in practice. We are well aware that the discipline of economics does not have the corner on the food security research agenda. There is a need for at least three or four disciplines to cooperate in carrying out each of the studies.

The final background agenda is the time-frame. We take the position that 40 to 50 scientists from numerous disciplines should come together to develop a food security research network for Southern Africa and carry out a programme of comparative food security studies within a ten year time-frame. Plant breeders openly admit that it will take around a decade, on average, to develop a new plant variety and test it before it is ready for release to extension agents. Why should a food security team working on malnutrition, food consumption studies, etc., promise results in two to three years when they know it will take five to ten years to do respectable research?

We have chosen to organise our remarks on food security research priorities in Southern Africa around six challenges:

1) the food and agriculture production challenge;

2) marketing, rural infrastructure and storage policy challenge;

3) the challenge of raising rural per capita incomes and generating employment in rural areas;

4) the nutrition challenge;

5) national food security policy analyses; and

6) regional food security policy analyses.

1. The Food and Agriculture Production Challenge

Today, some donors are raising questions about the need to continue investments in agricultural research in the light of good harvests in 1985 and 1986 throughout Africa. However, we believe that expanded research is needed on the design of efficient food and agricultural production systems, the cornerstone of national and regional food security strategies. Research is needed on three production issues:

(1) increasing food and agricultural production;

(2) reducing crop production instability; and

(3) diversification away from grain, especially in the maize belt.

Technical scientists and food security researchers need to pursue research on food and agriculture production in SADCC countries because: (a) six of the nine SADCC states are food deficit; (b) SADCC's population will increase by 30 million (e.g. 70 to 100 million) by the year 2000; (c) the population growth rate in the SADCC region (about 3.2%) is roughly triple the annual rate of growth of some industrial countries (e.g. Netherlands and Norway 1850 to 1900 and Japan from 1878 to 1912) at a comparable stage in their economic history; (d) population growth of 3% and income growth of 1 to 2% translate into an annual increase in the demand for food of 3 to 5% per year - rates that few countries have sustained for a decade or more; (e) there are virtually no proven technical packages for low rainfall and resource poor regions where household food insecurity is a major problem; and (f) the expansion of agricultural exports is central to foreign exchange

and rural employment generation in SADCC states.

First, let us examine the food and agriculture production challenge. If SADCC states want to pursue an agricultural-led development strategy, they will have to make large investments in agricultural research, human capital, infrastructure and favourable economic incentives. Few countries in the Third World have been able to achieve and sustain annual rates of growth of agricultural output of four percent for a period of one or more decades. Reynolds has recently compared the agricultural performance of forty-one countries for the thirty year period, 1952-1981. He found that five of the 41 countries could be classified as high performance countries - i.e. achievement of annual growth rates of agricultural output of 4 percent or above for the entire period.[10] But Reynolds found that only one of these five - Thailand - achieved a growth rate above 4 percent in all three periods as shown in Table 2.

TABLE 2

Annual Growth Rates of Agricultural Production in Five Countries: 1952/54 - 1979/81

	1952/54-1959/61	1959/61-1969/71	1969/71-1979/81	1952/54-1979/81
South Korea	5.4	4.2	4.2	4.4
Thailand	4.5	5.1	5.1	4.8
Malaysia	3.0	5.6	4.8	4.4
Mexico	5.0	4.5	3.5	4.1
Venezuela	4.5	5.3	3.8	4.4

(Source: Reynolds 1986, pp.96-97)

In summary, achieving and sustaining annual food and agricultural production growth rates of 3 percent or more for one or more decades is a major challenge. There is a major food and agricultural production challenge in the SADCC region. Food security researchers should cooperate with

farming systems researchers in generating information on constraints on expanding food and agricultural production. Farming systems researchers can design their research to throw more light on how to help achieve household and national food security objectives. Why can't agricultural economists, geographers, sociologists and agronomists at the University of Zimbabwe pool their resources to pursue joint research on food and agriculture production in low rainfall areas?

The second aspect of the food and agricultural production challenge is reducing crop instability. Since cereal production is volatile in the SADCC region there is a need for research on sorghum and millet, and irrigation to reduce the dependency on rainfall.

The third aspect of food and agriculture development is research to produce new production technology to diversify away from grain. This will require stepped-up research on new industrial crops (e.g. natural rubber), export crops (horticultural products, cut flowers) and high value crops such as spices.

Food security researchers should interpret the production challenge broadly to include research on efficient food and agricultural production streams. Why should a nation that is self-sufficient in grain restrict its food security researchers to research on food? It is obvious that Botswana's comparative advance is selling diamonds on world markets, beef to Europe and importing sorghum and maize from Zimbabwe and Zambia.

2. *Marketing, Rural Infrastructure and Storage Policy*

The emergence of the maize surplus in Zimbabwe and Malawi and the red sorghum surplus in Zimbabwe throws the spotlight on the need for marketing research, a neglected topic by agricultural economists relative to research on farming systems. Researchers have presented data that farmers in Nigeria, Malawi, Tanzania, Kenya and the Sudan received a substantially lower percentage (40 to 50%) of the final consumer price of grain from 1975 to 80 than farmers received in four Asian

countries (71 to 87%).[11] The reasons for lower returns to African farmers were the higher marketing board charges and rural transport costs that are "typically double that of Asia"[12]. We believe that an integrated research programme on marketing infrastructure, transportation and grain storage is needed in SADCC states.

The magnitude of on-farm storage losses in the SADCC region is an open question and an issue that should be explored through in-depth research.

The FAO report (1984) on SADCC agriculture asserts that pre- and post harvest losses from pests and diseases currently reduce food availability by 30 to 40 percent or more. But Greeley recently reviewed the literature on post harvest losses in developing countries; he notes a big gap between estimates produced by short term missions and actual losses recorded by careful research studies. Greeley reported:

> *Eleven "expert" estimates on post-harvest losses of rice at farm level in Bangladesh were published between 1975 and 1980; their average was 26.8 percent. By contrast, a three year research project which physically measured losses in all post-harvest operatives from cutting to cooking showed that total post-harvest rice losses at farm level were below 7 percent.*[13]

3. *Challenge of Raising Per Capita Incomes and Generating Employment in Rural Areas*

Typically average per capita incomes in urban areas are several times higher than in rural areas in the Third World. Since research has shown that hunger and malnutrition in many countries is an income problem, the challenge for food security researchers is to help develop policies, programmes and projects to raise rural per capita incomes in farmer and rural non-farm activities such as rural small scale industries, trading, etc.

One of the most direct ways of raising per capita incomes in food deficit countries is to increase food and agricultural production. In the six food deficit SADCC states expanded food production can increase the real incomes of farm labourers and generate a demand for more hired labour. Much of the increase in incomes that farmers will receive will be spent on locally produced foods and services. In food surplus countries, expanded food production can benefit the poor - especially net food purchasers - by driving down the cost of food so that families spend 20 to 30 percent of their disposable income on food rather than 40 to 60 percent, a common range in Third World countries.

SADCC's updated food and agriculture strategy explicitly recognises that a direct attack on rural poverty must be broadly conceptualised and it must go beyond stepping up food production. SADCC's present regional research programmes on sorghum, millet and grain legumes will be supplemented with research on export crops, industrial crops, etc., in order to generate new production technology capable of producing new income streams for rural people. In sum, SADCC's food centered regional research strategy has been replaced with a strategy to strengthen SADCC's long term dynamic comparative advantage in food and agriculture.

Closely related to research on raising rural incomes is research on employment generation. In the 1950s and 1960s, it was assumed that rural-urban migration was a desirable and inevitable feature of the development process. Today, there are few economists who argue for government policies to stimulate rural to urban migration. For example, in Botswana, around 20,000 school leavers are coming on the market each year while 7,600 new jobs are forecast in the industrial urban sectors over the 1985-91 Development Plan. In Zimbabwe's new Five Year Development Plant (1986-1990), high priority is given to rural employment generation because roughly 85,000 school leavers have been added to the labour force for each of the past three years and only 6,000 or less than 10 percent are estimated to have found jobs in the industrial-urban sector. The challenge is how to find productive employment for the

remaining 90 percent in the rural economy until there is an expansion in industrial urban jobs.

4. The Nutrition Research Challenge

The FAO estimates that roughly one fourth of the people in Africa or 100 million is Sub-Saharan Africa were malnourished in 1985. Data are scarce on the incidence of malnutrition by age, sex, income group and within households. Moreover, since many nutrition surveys are classified in the SADCC region, it is difficult to encourage food security researchers to move into this important area of study.

Nutrition improvement programmes are running far ahead of the conceptual understanding of the determinants of nutrition. For example, although economists such as Reutlinger, Sen and others have emphasised the malnutrition-poverty connection, we believe that posing the malnutrition problem as a food production (i.e. lack of available food) or a poverty problem is a vast oversimplification of the issues involved.

Nutrition research is complex and fraught with conceptual difficulties. For example, Field describes the state of the art of nutrition as the "soft underbelly of applied knowledge in nutrition planning".[14] It is arguable that improving income is indeed a strategic factor in improving household nutrition at low level of income. But as income levels increase, the income impact on nutrient demand may fade and other factors such as womens' schooling and non-nutritive characteristics of food such as taste, convenience, status conferral and time intensity may influence household nutrition. Finally, surveys of seasonal food availability are fraught with conceptual difficulties in disentangling the effects of disease, low food intake and weight.

We observe that some donors are pulling back from nutrition improvement projects because they have found that nutrition interventions are dependent on other factors, such as improved health and water supply for successful execution. This is

especially the case in Africa, where the capacity to plan and implement nutrition projects is in short supply. One major multi-lateral donor now privately admits that it made a mistake in "projectizing" nutrition a decade ago. Most donors are in a quandary on how to proceed with nutrition interventions. Some donors are trying to figure out how to incorporate nutrition into food security policy analysis.

What is the nutrition research agenda? In order to design effective food security programmes to combat malnutrition, one must first know who the malnourished are, what they eat, and why they are hungry. In much of Africa basic information is sparse on the incidence and causes of chronic malnutrition and on the socio-economic characteristics of the malnourished. Methodological advances are needed to design more cost-effective means of gathering such information; traditional nutrition studies usually fail to elicit information on the relationship between income and consumption. Conventional income-expenditure studies, especially when conducted in rural areas, are extremely costly. Yet without such information it is impossible to determine the most cost-effective way of increasing caloric intake in a given rural area: Is it through improving home food production, reducing post-harvest losses, or expanding non-farm employment, coupled with improvements in the food marketing system? In urban areas, knowledge of the consumption patterns of the poor is needed to design programmes that protect the poor from bearing an undue burden of the painful structural adjustments that many African countries are undergoing.[15]

5. *National Food Security Policy Analysis*

National food security policy analysis is the crucial link between household and regional analysis. Because of the vast differences in ideology, institutions and opportunities for development, each SADCC state should develop a small food security policy analysis capability in government and/or local universities. A critical question is the location of a food security planning/research unit - the Ministry of Agriculture,

Ministry of Economic Planning or in the Office of the President? There is no institutional guideline on this issue except to point out that the Botswana model is appealing, in that other inter-ministerial committees feed information on food security into the Ministry of Finance and Economic Planning. But Botswana's (1985) national food strategy is not supported with basic economic analysis of the cost of increasing food production. There is substantial economic capacity in planning units in Ministries of Agriculture that should be mobilised for research on food security policy analysis. Currently most planning units are smothered with project aid with its attendant report requirements.

Because of intra-regional trade linkages, it follows that the national and regional research programmes should be developed as a unified package and undertaken in a regional framework. Moreover, since African economies are integrated into the world economy through trade and exchange rate linkages, a logical question is what type of economic model is needed to capture these linkages? Computable general equilibrium models (CGE) were used for this purpose in Egypt, India and South Korea.

The number of trained analysts in Sub-Saharan African countries is small relative to the number available in countries such as India and Egypt to carry out general equilibrium studies. Moreover, the data base is extremely inadequate for CGE modeling in Africa.

We believe that researchers in Southern Africa should concentrate on partial equilibrium and sub-sector studies with an initial emphasis on the one or two most important staple foods in the national economy. For example, because maize accounts for roughly half of the calories consumed by the average Zimbabwean, the University of Zimbabwe food security research team is carrying out a comprehensive study of the maize and wheat sub-sectors and plans to undertake studies of the sorghum and oilseeds sub-sectors. The latter two are of crucial importance in understanding how to increase household food security among communal farmers, especially in low

rainfall and resource poor areas.

Presently there are no SADCC states that have an adequate data base and local policy expertise to carry out comprehensive national food security studies. Most of the 30 national food strategies that were prepared in Africa since 1979 on the recommendation of the World Food Council have been "flash in the pan" exercises.[16]

Most of these strategies have concentrated on the food availability side of the equation (e.g. how to step up food production and build more grain storage), have relied on secondary data and have paid lip-service to build local policy analysis capability. Finally, there is practically no agricultural economist in the region who is working on trade problems. Since trade and exchange rate policies may be more important than domestic agriculture policies (e.g. agricultural credit) in influencing the performance of the food and agriculture sector, a logical question is: What can be done to train a new generation of agricultural economists and economists to devote their career to teaching and research on the macro economics of food and agriculture?

Because numerous Asian countries have decades of experience in dealing with food security policy issues, including experimentation with institutional innovations to increase the access to food, it is important for researchers in the SADCC region to examine the international literature.

Regional Food Security Studies

The co-existence of malnutrition and food surpluses requires the University of Zimbabwe to step up research on regional marketing, trade, nutrition and access to food. Moreover, since food insecurity in the SADCC region can originate in international price movements, it is important that the regional trade agency includes research on both intra-regional and international trade. It is important to integrate research on managing foreign exchange, food aid and trade.

Summary

In the long run, economic growth is a powerful instrument for raising per capita incomes and helping the poor purchase a better diet. But there is substantial evidence that it may take a long time before growth will cure poverty. Therefore, African governments, like governments in industrial countries, are slowly beginning to realise that they have an obligation to intervene to ensure that all people have access to a calorie-adequate diet throughout the year.

In the SADCC region, the challenge is to increase food production in food deficit states and develop cost-effective, administratively and politically feasible interventions to ensure that all people have access to a calorie-adequate diet in both food deficit and food surplus countries. Presently there are no rules, no models and no guidelines on cost-effective food security policies that can be applied in the SADCC region because our present knowledge base is woefully inadequate. For example, there is little research on alternative institutions to increase access to food because, as Myrdal notes, the "ordinary economist" assumes away institutional problems.[17]

The immensity of Africa, the complexity and diversity of African agriculture and the weak data base on food consumption, nutrition and marketing should be taken into consideration in laying out a comparative research programme on food security. Short term (6 to 18 month) national food strategy exercises simply massage secondary data, raise false hopes and avoid the difficult task of building African research capacity for policy analysis on African problems.

We have highlighted the importance of defining the food security research agenda to include both food availability and food access issues. We estimate that two thirds or more of the food security studies in the SADCC region are currently focussed on one half of the equation, i.e. food availability issues. We believe that a more balanced research programme is called for, i.e. one that devotes at least one half of the research resources to each side of the equation.

Food security researchers should argue for parity with technical scientists in length of funding. At the end of the day, we believe that the major challenge for food security researchers in the region is to develop a manageable research agenda to guide policy makers on how to assure adequate levels of food consumption for the entire population of SADCC states, at all times and at minimum cost.

NOTES

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THE AGRARIAN QUESTION AND FOOD PRODUCTION IN SOUTHERN AFRICA

Archie Mafeje

The General Background in Black Africa

In undertaking any studies in Africa, two perspectives need to be kept firmly in mind, namely, the broad and the local perspective. In the past there has been two tendencies, the liberal empiricist tradition maintained largely by the British and later by Americans; and the Marxist tradition pursued almost single-handedly by a few French historians and sociologists. For the empiricists, "Africa" was primarily that part of the continent in which they happen to have done their field-work. This was particularly true of social anthropologists who became identified with specific "tribes", whom they referred to, patronisingly, as "my people". Agricultural economists, though less affected by particularism than the anthropologists, espoused a certain regionalism. Their agricultural studies were either on West, East or Central Africa but passed as agriculture in Africa in general. The practitioners concerned were, thus, guilty of generalisation by extrapolation. The surprising thing though is that they all believed, implicitly or explicitly, in the comparative method, which was supposed to be an antidote to personal or individual bias.

As we know now, the comparative method may guard against over generalisation, but it does not necessarily lead to theoretical generalisations in the sense of nomothetic propositions. Instead, it gives rise to taxonomic categorisations.

The tighter these are, the more static and incapable of dealing with dynamic processes they become. Two examples will suffice. In anthropological literature the "tribes" maintained their pristine state, despite the pervasive impact of colonial capitalism. Likewise, liberal agricultural economists got obsessed with "communal" land tenure systems in Africa, which were supposed to be a barrier to development, without noticing the dynamic changes these systems were undergoing as a result of the impact of colonial capitalism. The classification itself was an outcome of an implicit comparison with the European model of individual land tenure. The two examples are significant and will receive fuller treatment in the appropriate section.

On their part, the few Marxists who were on the ground, notably, Suret-Canale and Georges Balandier, in their desire to discover thematic issues which were amenable to theorisation, were inclined to use the history of essentially French-speaking West Africa and the Congo to explain the historical development of the whole of "Black Africa". One example is the determinant relationship they sought to establish between long-distance trade and the rise of kingdoms in Africa. Although this tradition has been faithfully maintained by contemporary French writers such as Samir Amin and Coquery-Vidrovitch, there is hardly any evidence that the rise of, say, the interlacustrine and the southern African kingdoms was attributable to long-distance trade. However, in mitigation it must be noted that these writers, unlike their predecessors, are beginning to hold a more differentiated view of black Africa. As an illustration, reference could be made to Samir Amin's division of black Africa into four socio-historical zones - Africa of "colonial economy", of "concessionaries", of "labour reserves", and of "pseudo-feudal systems".

On her part, while still committed to the long-distance thesis, Coquery-Vidrovitch recognises the critical importance of lineage organisation even in tributary formations in Africa - a point which is lost sight of in Samir Amin's analysis and which is, probably, the greatest contribution to African Marxist studies

by the French anthropologist, Claude Meillassoux. The significance of this lies in the fact that a great deal of Marxist writing on Africa is still derivative, relying largely on unstudied and undigested textbook knowledge. This is especially true of agrarian studies where classical concepts such as "feudalism", "tribalism", "capitalism", "Prussian path", "peasants", "communal land tenure", etc., etc. are used uncritically. It is the intention in this essay to subject some of these concepts to critical examination so as to throw into relief some of the peculiarities of the African agrarian formations. This is done with the conviction that it is in this area that African social scientists are likely to make a distinct contribution. The underlying reason is that their societies are predominantly agrarian and, contrary to all logic, the agrarian question in them is the least studied.

Since independence, thanks to modernisation and economic growth theories, there had been a preoccupation among African scholars and policy-makers with the "modern sector". Now that a major dislocation has occurred and governments and their advisers are faced with the once neglected problem of food production and security, attention has turned away from the so-called modern sector to the "small producers" who are the foundation of African agrarian social formations. Alienated African intellectuals, both left and right, are under pressure to justify themselves. This, they will not be able to do, without going back to the roots as against received classical texts. For their enterprise to succeed, the African scholars will have to evolve a general perspective which is informed by the specificity of African local history. Arguments about universalism versus particularism are of little relevance here. What is at issue is authenticity or self-knowledge. "Local" need not be equated with parochialism. Boundaries between societies are a matter of history and cultural evolution. Nowhere in modern Africa do they coincide with political entities, called states. Therefore, the mapping out of certain groups bound together by a common history and culture will be part of the exercise. For instance, it is not yet clear what we mean by "Southern Africa", apart from the geographical specification. Need this be the case?

For the time being, suffice it to say, super-imposed on sub - regional or regional socio-cultural formations in Africa, as elsewhere in the Third World, was a common heritage, colonialism. According to some African revolutionary thinkers such as Amilcar Cabral, owing to colonialism, African peoples were forced to take leave of universal history. Consequently, liberation will not be attained until Africans rejoin human history. It is theoretically sounder to accept the fact that colonialism is an important, if negative, part of African history and that Africans will not achieve genuine liberation until they are able to live it down i.e. until they are able to abandon colonial modes of thinking and doing. This is the essence of their struggle and the fundamental contradiction between decolonisation and neocolonialism.

In agriculture the colonial imposition expressed itself as a division between export crops and subsistence crops. The two long-term implications of this were: (a) African economies were being re-structured to serve the interests of the industrialised countries as suppliers of primary agricultural commodities; (b) the subsistence needs of the indigenous population were being relegated to the background. Although this was construed in monetary terms such as cash versus subsistence crops, the distinction was inconsequential because all crops in a monetized economy are potentially cash crops. Functionally and structurally, the important differences lie between export and staple crops or between the so-called modern and traditional sector. As has been forcefully argued by the "dependency" theorists against the "dual" theorists, these were not things apart but rather dialectical processes of appropriation and subversion or underdevelopment. The modern sector appropriated the best soils, the best labour and received the best technical inputs, services and scientific support from the colonial governments at the expense of the traditional sector.

Of course, this was not done for its own sake but for the sake of the metropolitan centres. In other words, while the modern sector benefitted by the under-development of the subsistence sector, it was also being mined by colonial capitalism. The

entailed systematic loss of value meant that it could not reproduce itself progressively and, thus, transform the agricultural economy into its own image. It is most telling that in African countries the farmers who are enumerated as "commercial", "progressive" or "big" have since the 1960s remained at around 5 percent (or less) of the agricultural producers. Consequently, their share in the total volume of agricultural production rarely exceeds 30 percent. Here, we are not referring to their share in the GNP, which is usually much higher. Even this cannot be clarified in all cases, as it had been policy since colonial times to undervalue peasant produce.

What emerges from this brief analysis is an extraverted agricultural economy which is disabled in two fundamental ways. First, owing to loss of value to metropolitan centres, it is incapable of contributing effectively to the national fund for industrialisation. Second, it is totally indifferent to the food requirements of the nation as a whole. Given the fact that the subsistence producers were being progressively underdeveloped, partly to force them into the labour market and partly out of increasing social and economic deprivation, national food production and security had been endangered beyond repair. In other words, there was no arrangement for augmenting the national subsistence fund over time. This, undoubtedly created a predisposition towards the present food crisis in Africa which is often treated as a sudden and unexpected development.

While colonialism is responsible for these distortions, African governments stand indicted for having pursued the same policies after independence and for having, thus, instituted neo-colonialism in their countries. During their tenure things got worse because, unlike the colonial administrators, they lacked self-discipline and a sense of organisation. Above all, they were too eager to accumulate material wealth before they had learnt how to produce it. Their petit-bourgeois greed or crass materialism meant not only wanton waste of resources but also super-exploitation of the direct producers. This had to be the case because, unlike the bourgeoisie in Europe, they had neither alternative sources of wealth nor a viable economic and political project. Theirs became a pathetic example of fishing

by emptying the pond.

After the initial flush of enthusiasm at independence in the 1960s, the peasants got thoroughly disillusioned and withdrew to themselves. This was made even worse by the collapse of international markets for agricultural commodities from the 1970s onwards. The ensuing incessant struggles among the petit-bourgeois elites, culminating in a series of coups and mounting repression, signalled both the political and the economic bankruptcy of the African petit-bourgeois elite. From this point of view, it is yet to be proved that the reasons for the collapse were both technical and physical and that this was the major difference between the 1960s and the 1970s or 1980s.

The Background to the Agrarian Question in Southern Africa

While it is true that the underlying reasons for the agricultural and food crisis in Africa are universal, namely, distorted colonial structures and neo-colonial policies, the actual instances of this impoverishing dialectic vary from region to region and from country to country. For instance, West Africa never had the white settler problem, whereas Southern Africa is the epitome of precisely that. The fact notwithstanding that areas like West Africa were plagued by the same contradiction between the modern and the traditional/subsistence sector, the major difference between them and Southern Africa is that in their case the indigenous population was always in effective occupation of the land. The rest was a problem, not of race, but of class, mediated by clan and lineage affiliations. For instance, in countries such as Ghana, Nigeria and Burkina Fasso chiefs are said to have sold land to the colonisers for their personal benefit. This might be so, but there is no evidence of permanent alienation of land in this area to foreigners. Even in the case of migrant cocoa farmers in Ashanti or cola farmers in Katsina in Nigeria, who were supposed to be "capitalist", they never acquired permanent individual rights in the land they cultivated. The natives maintained their reversionary rights in land. Therefore, the transactions that took place could be regarded as renting or leasing land.

The inalienability of land in this region goes as far back as the days of slavery. In Northern Nigeria, where feudalism is supposed to have obtained, it transpires that there was no outright allocation of land to individual lords but rather allocation of whole slave villages or villages of the subordinate clans to favoured officials who did not hold such villages in perpetuity. For instance, in the Emirates of Zaria officials were allowed to pass down to their heirs neither their official domains nor their full patrimony. These reverted to the state for redistribution. In other words, at the local level the principle of clans and lineages was not interfered with. This renders it impossible to subsume the system even under what Marx called the "Asiatic mode of production". Our immediate interest is to elucidate the essential difference between settler economies and the general colonial mode of production in Africa.

For the purposes of the distinction we seek to make, it will not do to refer to Southern Africa in purely geographical or political terms, as might have been the consideration in the case of SADCC. Some socio-historical indices which are diagnostic of the societies in question will have to be employed. During the expansive phase of colonialism in the south, the 11th parallel or latitude 11 degrees S used to be regarded as the northern borders of the South African area of labour encatchment. This coincides with Samir Amin's Africa of "labour reserves". It was also an area of greatest white settlement in the region. This meant two things: (a) alienation of land to white settlers on a scale unknown to the rest of black Africa, except for Kenya; and (b) creation of a more than average demand for black labour in colonial Africa. Naturally, the whites, who had the sponsorship of the colonial state, chose the best lands and on a grand scale which was justified by neither their numbers nor their needs e.g. 87 percent of the land in South Africa, 47 percent in Swaziland and 45 percent in former Rhodesia (now Zimbabwe). Judged by capitalist standards, this was irrational. But when it is remembered that divesting the indigenous population of their only means of production, land, was the surest way of making them available to capital as labour, then the move was quite

logical.

Despite the logicality of the colonial/settler strategy, the countries affected ended up with a schizophrenic situation. In the white areas, capital organised land distribution according to its own laws, viz., individual land tenure. On the other hand, the African migrant workers, in an effort to secure their rear, maintained what they knew best, customary tenure under the tutelage of lineages and the guardianship of chiefs. The social schizophrenia did not stop here. It penetrated the labour process as well. The white landowners, whose estates were measured in 1000s, or at least 100s of acres, behaved more as feudal lords than as capitalists and treated their African labour as bonded labour which was often paid in kind. This took the form of rations and squatting rights in exchange for labour which in principle was available for 24 hours a day and extended to the members of the worker's family.

Furthermore, as examplified by the South African Masters and Servants Act (1845) and the *Tangatha* system in Malawi, the bonded workers had no right to withdraw from the contract. The availability of cheap, captive labour considerably slowed down technological progress in agriculture in southern Africa. In South Africa and its environs white agriculture remained extremely backward until the 1930s when it had to be reorganised as a result of the policies of the then government which favoured Afrikaaner farmers, and as a reaction to the devastating effects of the Great Depression on the poorer and more inefficient white farmers who in desperation, were swarming to the cities only to swell the ranks of the unemployed and to accentuate the so-called "problem of poor whites". In Malawi the white estate farmers stayed backward until independence in 1960s when President Banda's Government threatened them with eviction, if they did not pull up their socks. In Rhodesia, like in the Western Cape and some parts of Natal, there had been a fair number of farmers who were imbued with the capitalist spirit and used resources more productively. This is notwithstanding the fact that, like in Swaziland, up to 70 percent of white estates remained idle, while Africans went begging for land for cultivation.

The conventional view in Southern Africa is that Africans have always practised primitive agriculture for subsistence. This is a racially-inspired stereotype. From the middle of the 19th century onwards Africans all over Southern Africa showed themselves to be as responsive to innovation in arable agriculture as the white farmers.[1] By 1840 they had adopted the European plough, and maize as a staple crop. Subsequently, the better off among them had added to the list such implements as the iron planter, the mechanical weeder and the harrow. They had some knowledge of fertilisers but, at best, could afford only the cheaper varieties e.g. phosphates in limited amounts. Manuring the land was universal among them. This is what made them attractive to white landlords as labour-tenants or sharecroppers, especially in the Orange Free State, the Transvaal and Northern Natal. In all cases the African share-cropper was expected to bring his own implements, oxen and seeds. This was called "farming on the half" or "kaffir farming" by those who wanted all Africans reduced to farm labour, pure and simple, and the whites to take "their rightful place" as labour-employing capitalists. Nevertheless, it took the 1913 Land Act to stifle any further development of the share-cropping system and labour-tenancies. Otherwise, both land-hungry blacks and work-shy whites found it convenient.

The point to grasp is that between 1860 and 1900, the Africans, barring the Western Cape sheep and fruit farmers and the sugar plantations in Natal, were the most dynamic agricultural producers in South Africa. As has been documented variously by Bundy, Trapido and Denoon, at this point in time in all the provinces the volume of production of food by Africans exceeded that by white farmers by far. This was revealed by market returns from Grahamstown and Port Elizabeth in the Eastern Cape,[2] Vereenigen in the Transvaal[3] and the traders' and missionaries' recorded reports from the Orange Free State and Natal.[4] In the case of Natal it was reported outrightly that white farmers in the province depended on the natives for their food.[5] It was in recognition of this fact that Bundy entitled his book, *The Rise and the Fall of the African Peasantry*. The fall occurred after

1913 when Africans were forbidden by law to buy and own land, to indulge in share-cropping with white landowners or to take out labour-tenancies from them. This was an extra-economic measure, designed to protect uncompetitive white farmers and to cheapen black labour for the benefit of white employers in general. White farmers in the Boer Republics and Northern Natal had complained that they could not compete with the "kaffirs" who relied on their extended families rather than employed labour. This experience is not limited only to South Africa. In the African Purchase Areas in Zimbabwe African farmers proved to be just as competitive; so did the African farmers in Malawi after independence. In fact, in the latter they accounted for what is considered to be one of the four success stories in Africa (the other three being Kenya, Ivory Coast and Cameroun).

It would seem, therefore, that the success or failure of Africans in agriculture and in food production, especially, must be judged, like any other case, according to the objective conditions governing their lives. In the over-crowded "Native Reserves" or "Tribal Lands" in South Africa, Swaziland and Zimbabwe, African production has deteriorated to an alarming degree (in 1985 it was announced in Zimbabwe but not explained that the African producers in the Tribal Trust Lands had produced a surplus under the same crowded conditions). Sub-economic units under increased demographic pressure, absolute poverty and general neglect by the state, and unchanging production techniques underchanged and unfavourable physical and ecological conditions are obvious constraints. What is not so obvious but critical is the cost of labour and its social reproduction. Extensive labour migration is an index of poverty among rural Africans. It is also a reflection of diminishing returns on effort in African agriculture. This is what it was meant to be by the various disabling laws passed by the colonial state and by the substantive demand for labour by capital.

However, the intractable problem is that colonial capital was not willing to pay the cost for the social reproduction of the African labour that had been delivered to it as virtually forced

labour with no job security. The consequences or advantages of this to capital had been anticipated, and hence the insistence on the system of "Native Reserves". These were dumping grounds for unserviceable African labour which had to bear the cost of the social reproduction of such labour. In other words, the reserves were not meant to, and could not have been meant to, guarantee the subsistence of the African labour whose services were needed elsewhere. They were only meant to supplement at a very low level the starving wages that the Africans were receiving from their exploitative employers. It is, therefore, logical nonsense to have expected Africans to develop or even sustain subsistence agriculture in the Reserves. This would have been a contradiction in terms. Contended natives in the countryside would have been unavailable to capital, which was the case originally. It is, therefore, incongruous that after independence countries such as Swaziland, Botswana and Zimbabwe have retained the system.

The "Reserves" and the Problem of Food Self-sufficiency

The "Reserves" are a colonial remnant which was aimed at undermining the economic self-sufficiency of the Africans. As such, they cannot, even under the most benevolent African government, guarantee the subsistence needs of their inhabitants. It is not a question of rehabilitating or improving them but of dismantling them altogether, as part of a radical transformation of the agrarian structures in southern Africa. This entails a number of major changes, among which may be mentioned: (a) redistribution of the land according to the needs of the rural producers; (b) land reform in accordance with the requirements of the national economy, including self-sufficiency in food production; and (c) revision of existing systems of land tenure with special regard to racial, class and sexual discrimination. In their totality these constitute what might be referred to as the agrarian question in southern Africa.

On the question of "Reserves", even the South African rulers, the originators of the system in Africa, have come to realise

that it is unsustainable, politically. They are, therefore, committed in principle to the "lifting of the pass laws" and the dissolution of the Bantustans. This is the least price they can expect to pay in any negotiations with the national liberation movements. While we might yet see a great deal of procrastination and dilly-dallying, the result is inevitable. In Zimbabwe the decision had already been made as far back as 1976 in a policy document by the ZANU-PF Executive Committee. But the mechanics of implementing it are proving very difficult mainly because of the Lancaster House compromise. Nonetheless and despite the zig-zags, the ZANU Government cannot afford the policy of Tribal Trust Lands.

This is in contrast to Swaziland and Botswana where the African governments feel under no compulsion to abolish the system of reservations but, instead, perceive it as the best way of protecting their "tribesmen" from rapacious capitalists. In Swaziland the Government has since independence been hoping to buy back more land from white landowners to augment its overcrowded National (tribal) Lands. But this has proved difficult, financially and politically. Consequently, the *status quo* prevails and the prospects for any serious land reform and rehabilitation of the African producers for self-sufficiency, at least, in food production appear more and more remote. Policymakers in Swaziland could report that the question we are trying to broach is irrelevant since their country is one of the few in Africa which are self-sufficient in food production, thanks to the white capitalist farmers who own nearly half of the Swazi territory and whose production is not necessarily geared to domestic needs.

This would be too difficult to reconcile with any notion of "independence" and equity for the people. For Botswana, the principle of independence is not at issue, since all land belongs to the national patrimony. If it were not for the question of white dominance and the role played by small producers, Swaziland could be compared to Malawi. But the white estates in Malawi constitute only 17 percent of arable land, while the small producers account for about 70 percent of the food production.

What is disturbing about Malawi is the fact that the estate farms, white or black, are allowed to grow at the expense of the small producers, especially in the central provinces which show the highest rate of labour migration to South Africa. We are, thus, faced with a choice between benevolent reservation policies and *laissez faire* policies that lead to the expropriation of the poor. This brings us to our second consideration, the question of class differentiation. Under classical capitalism which was accompanied by rapid industrialisation, commercialisation of land, and an exodus of the population to the cities, agricultural production became the business of a few specialised farmers. In response to the expanding market for food in the urban areas, food production increased phenomenally - more than industrial raw materials which had to be supplemented by plundering the colonies. As has already been mentioned, in underdeveloped countries under the impact of colonial capitalism neither industrialisation nor an agricultural revolution occurred. Whereas by 1860 (i.e. 100 years after the industrial revolution) only 10 percent of the population in Europe was still in the rural areas, in Africa after about 100 years since the introduction of colonial capitalism, around 85 percent of the population is still in the rural areas. Secondly, instead of growing, food production has declined steadily since the turn of the century. The so-called African capitalist farmers who emerged around the same time made no difference, as they were specialised in plantation crops for export.

This does not apply to Southern Africa, where the Africans were quickly confined to the "reserves". Here, agricultural production on any significant scale became the privilege of white settlers. Indeed, the latter became the agents of any capitalist transformation in the region, with the exception of Lesotho and Botswana where climatic conditions were not so favourable. Generally-speaking, food production by white farmers kept up with the demand (this does not apply to Malawi where Africans have been responsible for food production). They were also responsible for virtually all export crops. The latter is not to be exaggerated. The Southern African countries are by international standards small exporters

of non-food crops. Given their racial division of labour and palpable income differentials, what would be expected of them is the problem of access among the majority of the population even under conditions of adequate supply of food. In other words, the white farmers are not obliged to adjust their prices to a weak domestic market when they can fetch better prices for their produce abroad. It would take a special food policy and subsidies to circumvent such a problem. Given the general indifference of white governments to the needs of the black majority and the usually strong political lobby white farmers have always had in the region, there had been no question of such an intervention, except in Zimbabwe immediately after independence. Even then it was an emergency situation caused by the drought and the general disruption of agricultural production.

As would be appreciated, the racial question overlays a number of basic issues which otherwise centre on class relations. The white farmers in Southern Africa exploited and dominated Africans as a capitalist class, supported by a capitalist state. As was shown earlier, in South Africa, especially, the whites sought to thwart any development of a capitalist class among African agricultural producers by legislation. The 19th century African peasantry, which was composed of largely Christian converts around mission stations, school teachers, ministers of religion, and labour-tenants and share-croppers, who generally had no formal education or Christian background, was mercilessly crushed. They were condemned to a lowly living in the reserves on plots of no more than 4 acres and for which they had to pay quit-rent to the colonial state. Practically, the same policies were extended to the neighbouring British Protectorates, which were also looked upon as labour reserves. However, in Lesotho and Botswana there was no land alienation, as was already noted. Instead, there was general neglect which left their agricultural economies as depressed as the South African Reserves, if not worse, given the fact that the climate in both countries was less favourable for arable agriculture. Therefore, the prospects for the emergence of an African capitalist class in agriculture were nil. In Rhodesia, as in South Africa, such a development was forestalled by

legislation. In Malawi and Zambia the same result was achieved through nonstatutory racial discrimination and manipulation of credit and marketing facilities. So, Southern Africa boasted of no African capitalist class prior to independence but rather a dispossessed or depressed peasantry, which could hardly feed itself.

After independence and even in the Bantustans, we witness the emergence of a grasping African petit-bourgeois elite which, relying on state revenues, tries to project itself as a capitalist class. Buying farms is a popular pastime among this class, but none of its members actually farm or live in the countryside. Instead of looking upon their farms as objects for investment, they look upon them as resorts for week-ends and holidays or as an insurance against old age. Malawi, where President Banda was prepared to sack a minister or higher civil servant for being a bad capitalist, might be the only exception. In Botswana the governing elite seem to be doing well in cattle-ranching either because, one suspects, it needs less supervision than arable agriculture or because the Batswana herdsmen have a long tradition from which to draw. This could have been the case in Lesotho and Swaziland, if it were not for land scarcity and the already acute problem of over-stocking.

In Zimbabwe and Zambia there had already been a few "progressive farmers" in the African Purchase Areas and in the Mazabuke District, respectively. It does not seem that they develop further than what is referred to as "kulaks" elsewhere. Whether or not the new entry by the members of the governing elite will bring about a transformational effect is an open question. Suffice it to say, for the time being, there is no African class in Southern Africa which has come forward to take over agricultural production from the peasants on a national scale. But, as has been explained, peasant production everywhere in Southern Africa has been seriously undermined. This has, in turn, jeopardised chances for increased food production at the popular level. In countries such as Swaziland, South Africa and Zimbabwe where white farmers are the main producers, they have proved to be unconcerned with the problem of food security for the mass of the people. Yet,

they have a huge monopoly of the best lands in all three countries. But then the ultimate question is: if such land were equitably distributed, as it must, would the African "peasantry" in the region, which has been undermined over the last 50 years, be able to reproduce itself progressively; or should the decomposition of its mode of production be taken for granted?

The Question of the Peasantry and Agrarian Revolution in Southern Africa:

Under the term, "agrarian revolution", must be included not only changes in class structure, production relations and social institutions in the countryside but also a veritable technological or scientific revolution. Liberal scholars have tended to reduce this to a technical question, requiring a change from "communal" to "individual" land tenure in the case of Africa. On the other hand, Marxists have emphasized class and production relations at the expense of technical questions, which are usually lost in grand formulations about "material forces". Methodologically, such impartiality is not justified, as the process of social transformation involves both dimensions. For the social and historical reasons elucidated above, the African peasantry in Southern Africa has fallen far behind, technologically. In the meantime, the environmental conditions in the region have become less conducive to increased productivity, especially in food crops. This is in addition to other agronomic factors which have always been a problem in the region and which the peasant producers have never quite mastered or could not hope to master under the present state of their technological knowledge and financial possibilities. These might be worth highlighting so as to avoid any revolutionary romanticism about the capabilities of the peasants on the eve of the revolution.

Scientifically, it is known that the soils in Southern Africa are predominantly low in plant nutrients, too acidic and abound in specific toxicities. It has also been reported by agronomists that the effectiveness of inorganic fertilisers and organic manures is reduced by the rapid leaching of nitrogen from high

rainfall, the rapid breakdown of organic material, and the strong binding of phosphate and other nutrients to soil particles. This is believed to create specific problems of soil management which have a bearing on traditional farming systems. Left on their own such textural and structural soil characteristics, naturally, constrain crop production and favour both compaction and soil erosion. As is well-known, soil erosion is most serious in Southern Africa and has been exacerbated by lack of soil preservation methods, frequent cropping of the soil with maize and over-stocking in the tsetse-free zones. This has greatly reduced the production potential of large areas in the region.

Secondly, although the average rainfall over much of the region is high or sufficient to grow a wide range of crops, the rainfall varies widely within growing seasons and from year to year. This results in frequent dry spells during crop development and not so infrequently in years of drought or near-drought. The problem of unreliable rainfall is compounded by the poor water retention capacity of most soils in the region and high temperatures that cause rapid evaporation. Consequently, water stress is reported to be the most serious constraint on crop production in most of the region. It is also believed to be the primary cause for average yields to diverge by as much as 25-50 percent between low and good rainfall areas and between bad and good years. The high probability of crop failure is seen as one of the factors which would predispose peasants to cut back on effort. All this would indicate the desperate need for irrigation in the region.

Fortunately, with the exception of Lesotho and Swaziland, the Southern African countries have substantial surface-water resources that could be developed for irrigation. Depending on the approach adopted, construction and maintenance costs for irrigation could be prohibitive. For large-scale irrigation, it is estimated that the foreign exchange costs could exceed US 10 000/ha and would be generally uneconomical for the production of staple food crops. Added to the cost would be the problem of trained irrigation engineers, water management personnel, and absence of appropriate institutions and irrigation

experience among the African peasants in the region. This, combined with the huge gap in research capacity among Africans to determine suitability of particular soils for irrigation, the appropriate cultivars and measures for controlling new crop diseases and pests, make large-scale irrigation in the region look more like a result of development than a problem of development. Luckily, on the other hand, there seem to be plenty of opportunities for small-scale irrigation projects throughout the region which are well suited to the needs of small producers. The estimated cost for these ranges between US 500 and US 1000/ha. They are believed to be cost-effective even for staple crops. They can, thus, make a rapid contribution to food self-sufficiency where small producers are subjects of development. FAO estimated the potential for small- to medium- scale irrigation for the SADCC countries as follows:-

Table 1 : Potential for Small- to Medium-Scale Irrigation*

Country	'000 ha	% of country
Angola	3 800	3.0
Botswana	1	-
Lesotho	30	1.0
Malawi	500	5.6
Mozambique	3 350	4.3
Swaziland	10	0.6
Tanzania	2 500	2.2
Zambia	1 300	1.1
Zimbabwe	300	(nonalluvial soils)
TOTAL	11 791	

*Estimated on the basis of the surplus from average annual rainfall within the country.[6]

Pre-and post-harvest losses from pests and diseases is often mentioned in relation to food production in Africa. In the SADCC region it is estimated that food availability is reduced

by 30-40 percent by such disasters. Grain losses alone are put at more than 2 million tonnes per year, which more than matches the volume of grain imports. Thus, improvements in pest and disease control in the field and during storage could greatly augment the food supply and might contribute significantly to food self-sufficiency in the region. According to reports, each of the main cereal crops in the SADCC countries is subject to about six major diseases and to an equal number of field and storage pests. It is believed that, at any given time, almost any of these diseases or pests could cause complete crop losses in various parts of the region. Yet, there is no immediate or apparent reason why the peasants themselves have not reduced the risk within their own technical possibilities.

Another area where existing opportunities have not been exploited by the African peasants in Southern Africa is pastoralism. From the physical point of view, it is noticeable that the grasslands in the SADCC countries can support only low animal population densities. The average carrying capacity is thought to vary from about 2 ha/animal unit in the better-watered areas in Malawi and Zambia to 20 ha/animal unit in the arid areas of Botswana, Lesotho and Tanzania. Yet, there is a persistent drive among the peasants to own ever-increasing herds, without taking steps to improve the pastures. The combined effect of large herds, low carrying capacity of the natural pastures and general lack of supplementary feeds is, of course, over-grazing and land degradation. Under the present conditions, it is estimated that herds exceed the carrying capacity in the SADCC region by anything between 50 and 100 percent. It could not be that the peasants are unaware of the destruction their herds are causing and of the losses in yields that they, as producers, are suffering. What are the underlying causes for their apparent irrationality? Are the peasants in fact their own worse enemies, as Marx believed?

The issues raised in the preceding section are a complex nexus between subjective and objective factors, whose determinations are difficult to decipher. Without going deep into the question

of the ambiguous status of the peasantry, as a class which partakes of the attributes of both the labouring and the property owing classes, it is important to note that African "peasants" are not affected by this particular ambiguity because, historically, they have never known individual property. What they are customed to is corporate rights in land and cattle, realised through lineages and extended families. Heads of these units held such property in trust and presided over its distribution. The fact that they might have manipulated the distribution in their favour e.g. allocating cattle to acquire more wives for themselves while juniors are expected to cool their heels or passions, does not invalidate our proposition. The same manipulation might have been practised by lineage elders in allocating land to different families. As these were nothing more than privileges, they were subject to questioning by corporate members who were entitled to inalienable use-rights.

Even so, Meillassoux saw this as a particular mode not only of allocating value but also of appropriating value.[7] He referred to it as the "lineage mode of production" and argued, erroneously in our view, that within it the elders exploited juniors and women and that, in fact, constituted an exploiting class. Despite the hierarchy, based on gender and seniority, in the lineage mode of production, it is still important to distinguish between relations of domination and relations of exploitation. In the course of the cyclical development of domestic groups, African lineage elders could only reproduce themselves through juniors. Whereas women were, no doubt, dominated and exploited by men in general, senior women did likewise to junior women. Think of those dominating matriarchs and insufferable mothers-in-law! Wherein lies class in this?

Nevertheless, any hierarchies and inequalities in a society create a predisposition towards class-formation. The principle of non-antagonistic relations in property-less societies not withstanding, it must be acknowledged that under certain conditions use-rights could get entrenched. Among these may be mentioned demographic pressure and colonial capitalism. In

the former case there might be simply not enough land to go round e.g. in Lesotho and the National Lands in Swaziland. Under colonial capitalism individual families might try to maximise their advantage by growing permanent crops or by developing their plots for commercial production. This is what the Christian families did around the mission stations during the 19th century in South Africa. Their capitalist enterprise was only aborted by the white capitalist state in anticipation of the labour needs of white capital. This did not happen elsewhere in Black Africa, Kenya excluded. Another difference is that while chiefs in other parts of Africa, especially in West Africa, were able to take advantage of their positions and engaged in illicit deals over land with foreigners for their personal benefit, in South Africa their power had been usurped by white magistrates and they, as junior civil servants, were forbidden to exercise their traditional prerogatives in lieu of monthly stipends and other allowances from the white administration. The accumulation we witness now in the Bantustans by collaborationist chiefs is a new deal, which has its own reasons.

It had been suggested by Meillassoux on the basis of his work in the Ivory Coast that the elders and the chiefs stood to gain by maintaining the traditional system and the lineage mode of production while reserving the right to make deals with imperialism or colonial capitalism on behalf of their communities. This gave them an opportunity to control the flow of prestige goods from both ends. Insofar as this is true, Meillassoux argued, it was not individuals which imperialism or colonial capitalism exploited but whole communities. This included even the release of junior men as migrant workers. Meillassoux's thesis fitted in very well with a broader theory that had been advanced by the French Marxists about the "dissolution and preservation" of pre-capitalist modes of production in Africa.

The idea was that colonial capitalism undermined African modes of production sufficiently to create reservoirs of cheap labour but not enough to dissolve them, lest it was forced to pay for the social reproduction of the labour it was exploiting. Later,

in the hands of writers such as Rey and Samir Amin, this developed into the so-called theory of "articulation of modes of production", which was specifically extended to South Africa by Wolpe.[8] What this boils down to is that the migrant workers are a dynamic link between the capitalist mode of production and the African subsistence or "re-distributive" mode of production. It is the redistributive function of the latter that is exploited by capital for the social reproduction of its labour. In Meillassoux's terms, it is the community that is exploited by virtue of releasing individual workers to capital. For Southern Africa both these are extremely suggestive. We might benefit by going through them, even if in the end we discard them. We have already referred to the suppression of capitalist growth among Africans in Southern Africa, the deliberate attempt to reduce all Africans to potential labour, and the institution of the system of "reserves" so as to maintain black labour migrancy over a period of more than 100 years. What we need to do now is to consider the implications of these factors against the background of the theories mentioned above.

Meillassoux's thesis was based on the explicit assumption that the societies he studied were "self-sustaining agricultural communities". Therefore, the first question that has to be addressed is whether or not the Southern African agricultural communities are "self-sustaining". The second question is whether the processes of social production and reproduction in African agricultural communities should be located at the level of the "community" at all. Technically, the two questions could be formulated even more sharply by asking whether such processes occurred at the level of the "social formation" or of the "mode of production". This also has a direct bearing on the theory of "articulation" of modes of production. As will be recalled, in these theories the "articulation" was between the capitalist mode of production and an unidentified category of "pre-capitalist" modes of production in Africa. If the idea of articulation of modes of production were granted, could it be assumed that all pre-capitalist modes of production articulate in an identical way with the capitalist mode of production? Implicit in this question is a number of theoretical and

empirical issues which we cannot pursue in the present context.

However, in passing it could be pointed out that not only did various African modes of production respond differently to colonial capitalism e.g. the pastoralists in the Sudan belt and the mercantile societies of West Africa, but also colonial capitalism took various forms e.g. concessionary capitalism along the banks of the Congo and Niger rivers and white settler capitalism in southern Africa. But all these arrangements, through systematic extraction of surplus value from the African societies,[9] undermined the capacity of African modes of production to reproduce themselves. Southern Africa, where up to 85 percent of the income of the rural population is accounted for by remittances from the cities, might be a extreme example, but is reflective of a general phenomenon in Africa. Otherwise, how else do we explain the current crisis in Africa, culminating in near-starvation or actual famines? It might be what we are dealing with is not "articulation of modes of production" in Africa but a particular variant of capitalism, colonial capitalism, which is parasitic and, therefore, unprogressive. It exploits labour, without any transformational benefits. In other words, what we are experiencing here is not "dissolution and preservation" but rather "dissolution without resolution". Colonial capitalism is not able to resolve the problem of production and social reproduction in Africa. What it seems to be heading for now is general genocide, as is shown by the dumping of unwanted surplus labour since the 1970s. In South Africa this had already been anticipated by the mass removals of 1969-1972 and by the constant threat to repatriate all the labour from the neighbouring countries.

It would be premature to conclude from the foregoing remarks that African modes of production have *ipso facto* decomposed. It is important to bear in mind that colonial capitalism, powerful and intrusive as it was, did not have monopoly of initiative. After their resistance had been broken, Africans adopted strategies for survival. These included clinging to some of the institutions which had in the past given them security and succour in time of difficulties. The lineage is one

such institution and, if it is *à la* Meillassoux a mode of production, then it survived. This did not happen, at least in Southern Africa, because the African elders or the colonial authorities willed it. Rather, it was the over-exposed and insecure migrant workers who could not afford to foresake it. In it were embedded their inalienable corporate and use rights. But in the meantime, it was not the imperatives of lineage organisation which sent them hurtling into labour migrancy. It was rather the immediate needs of their individual households.

This is perfectly consistent since it is the household which has always been responsible for production and redistribution in Black Africa. This has prompted me to refer to traditional African economy as a "household economy", instead of "tribal economy" which gives the erroneous impression that there was an integration of production in Africa at the territorial level. For that matter, even Meillassoux is mistaken in thinking that "self-sufficiency" in Africa occurred at the level of the community. Indeed, one of the problems facing us now is that there were no territorially based units of production in Africa. The problem is further compounded by the fact that, while production occurred at the level of the household, reproduction of households took place at the level of the lineage in societies which were universally exogamous and unilineal in their descent systems. This reciprocal relationship is the last line of defence in African communities. Hence, our hypothesis is that, far from loosening it, colonial capitalism strengthened it unwittingly.

Colonial distortions notwithstanding, defence is one thing and self-sufficiency another. The fact that African heads of families or their sons migrated in search of wage labour is a clear indication that the African household had lost its self-sufficiency under the impact of colonial capitalism. The fact that the migrant workers oscillated between town and country for over a century is a sign of their inability to fulfil the requirements of the social reproduction of their own labour and that of the household to which they were committed. Under the circumstances the lineage became absolutely indispensable because it guaranteed protection of their corporate rights

during their absence in the cities. It also guaranteed minimum protection to the households of its absentee members. Dereliction of duty threatened the security of the individual migrant and the survival of both the household and the lineage.

In allocating labour the objective of each household is to satisfy its subsistence needs. Under the reservation system it became increasingly difficult to achieve this objective mainly because of diminishing labour returns on miniscule and unproductive farm plots. But according to theory, the household should have reacted by intensifying technological factors so as to increase labour productivity. This is exactly what happened in Southern Africa. The adoption of the whole array of the agricultural implements plus some cheap fertilisers, mentioned earlier, testifies to this. Indeed, at the beginning all migrant workers were "target workers". They went to the cities to earn enough money to buy specific items which, more often than not, were agricultural tools and cattle. Unhappily, all this was to no avail. The decline in African agriculture in the reserves continued steadily but inexorably and the immiseration of the peasantry became such that labour migration was no longer a temporary affair but a way of life. So, what the theory failed to specify was the minimal conditions under which technological innovations can realise their value. One simply cannot combine absolute poverty with sustained technological progress.

The African household was torn asunder. Heads of household and their sons had to spend their most productive years serving a new and merciless god, Capital, while their wives and daughters tried to hold the camp in rural areas as best as they could. From the point of view of the labour process, both men and women were over-stretched and the household economy of which they were agents was undergoing a severe crisis, unable to reproduce itself consistently. Neither the wages nor the agricultural income was big enough to allow the household to reconstitute itself. In the meantime, new needs such as industrial consumer goods, school fees, government taxes and medical bills had become part of everyday life. This would breed some individualism on the part of household heads, as

they would prefer to concentrate their limited resources on their own children so as to guarantee them a better life in the future. On the other hand, mindful of their corporate rights and responsibilities, members of the lineage would not take kindly to such individualism. So, for their own good, heads of households have to fulfil their obligations towards their lineage members. For the household, this is a second area of irresolution.

As can be imagined, these competing demands exert great pressure on the subsistence fund of the average household. One suspects that the wife or mother, being the natural provider for her family, finds herself, in the absence of her husband, having to engage in a variety of economic activities, well beyond the family farm, to make ends meet. This would tend to undermine the hierarchical structure of both the household and the lineage. It would appear, therefore, that from all angles the household, the most basic unit for agricultural production in Africa, is undergoing a crisis of production and social reproduction under the impact of colonial capitalism. It has lost its coherence because of competing demands for its labour-power and value. If so, what hope is there for agricultural recovery and food self-sufficiency in Africa?

Prospects for Agrarian Transformation in Black Africa

At the moment prospects for agrarian transformation in Africa are bleak. There are two major reasons for this: (a) petit-bourgeois governments all over the continent are, with the exception of a few socialist-oriented governments, committed to neo-colonial agricultural policies and programmes; and (b) in the meantime, African peasants, as a class, are, unlike their counterparts in Asia and Latin-America, not organised and conscious enough to be agents of revolutionary agrarian transformation in Africa. Concerning the first point: it was inevitable that African governments would after independence adopt programmes which were a continuation of the past. Their national political and economic project was petit-

bourgeois from its inception. Their biggest aspiration was to establish a bourgeois society in which individual appropriation of value would be the rule. In agriculture this got associated, in the true spirit of the colonial bourgeois economics, with individual land tenure. Indeed, the often-quoted "success stories" (Kenya, Ivory Coast, Malawi and Cameroun) carried this policy furthest. Bourgeois scholars have seen this as a vindication of their point of view.

Here, there might be confusion between growth and development - a not uncommon mistake. It would be silly to deny the fact that until the onset of the present crisis in Africa the countries referred to above showed some of the highest growth rates in Africa. The corollary of this, at least in Malawi and Kenya, was an accelerated rate of landlessness and poverty among the peasants. The evidence from the Ivory Coast and Cameroun is inconclusive. There is no indication of abnormal rates of landlessness. There is, however, observable stagnation of peasant agriculture, increasing unemployment, and general poverty in the so-called subsistence sector in both countries. Furthermore, in the case of Kenya, since the food crisis in Africa there has been a breaking up of the big estate farms by peasant squatters who are asserting their original usufructuary rights. This is a noteworthy development because it shows the resilience of the lineage principle in Africa even under what is supposed to be capitalist organisation. Similarly, estate farmers in the Ivory Coast are abandoning agriculture in favour of industrial/commercial enterprises in the urban areas. It would be interesting to see what happens to the land so abandoned. Our guess is that it will revert to the lineages of the former owners. The obvious conclusion to draw from all this is that petit-bourgeois agricultural policies and programmes have, even in the best examples, failed to bring about a genuine agrarian transformation in Africa. As a result, everywhere they are faced with reverses and a deepening agricultural crisis.

Whereas elsewhere in Africa, with the tew exceptions mentioned, land distribution has not been a major issue and capitalist production has occurred on the main without

individualisation of land rights, in Southern Africa, due to the settler problem, land distribution remains one of the biggest obstacles to African development. This constitutes part of the struggle against white minority regimes or against white settler domination. However, the programmes advanced by the national liberation movements leave much to be desired. As elsewhere in Africa, they are essentially petit-bourgeois. In Zimbabwe the Government has adopted a reformist programme whereby they hope to settle some thousands of African families on mainly "individually allocated" land, without the expropriation of the white estate owners who hold vast amounts of unused land. The amount of land that the Government has been able to secure so far through purchase is barely 5 percent of the land owned by white farmers.

Government officials blame this petty reformism on the Lancaster House agreement. Some might interpret it as petty-fogging by a petit-bourgeois government. The same applies to the Swazi Government which since independence has been waiting for loans or grants from the British Government to buy more land from white landowners for African settlement. When it comes to South Africa itself, it is patently clear that the Government, with its Bantustan policy, does not propose to re-distribute the land for the benefit of the peasants. In the meantime, beyond the popular slogan, "all land to the tillers", all South African liberation movements uphold the bourgeois right "to buy and sell land". They have various excuses for this, the most commonly articulated being that at this stage theirs is a "national (bourgeois) democratic revolution". Of course, the term "bourgeois" is conveniently left out in their propaganda texts. But the substantive question remains: would the black South Africans be able to realise a bourgeois revolution under imperialism and in the light of what has already happened elsewhere in Africa?

Proposals for a Genuine Agrarian Transformation in Africa

Starting from the assumption that bourgeois democratic revolutions in the Third World have proved unrealisable under imperialism and that, as a consequence thereof, petit-bourgeois

neo-colonial policies in Africa have ended up in petty dictatorships and a deepening agrarian crisis, the following proposals might go a long way in solving the problem:-

1. The African traditional land tenure systems, which recognise no individual ownership rights in land but rather usufruct rights to which all members of the community are entitled, be maintained. In order to combine equity with development or economies of scale, production and appropriation of value be organised on a broader basis than individual households or families.

2. In practice the latter will involve rehabilitation of the African households which have been seriously undermined by colonial capitalism through the system of migrant labour and reservations. This amounts to a call for equitable distribution of all available land in countries such as South Africa, Swaziland, Zimbabwe and Malawi, and for cessation of the system of migrant labour (something which is being attempted in Zimbabwe).

3. For households to reproduce themselves consistently and to feel fully committed to territorially-based units of production and distribution (village cooperatives or communes), they will have to be freed from the control of lineages. This can be done not by declaring war on the lineages but by transferring the administration of landed resources from lineage elders or chiefs to the productive units themselves and by creating therein greater security for the households than has been the case hitherto. Diminution of the power of the lineage elders would mean greater autonomy for the juniors but not necessarily for women, as each elder or junior is the head of his own family or household. Special measures would have to be taken to ensure equality between men and women. So far, even cooperatives have been dominated by men in Africa, not because they did all the work, but because everything was registered in their names even in those cases where women did all the work e.g. the pyrethrum industry in Kenya.

4. While it would be desirable that the government holds all land in custody on behalf of the people,[10] and that it accepts responsibility for the overall plan for agricultural production and marketing, it would be equally desirable that the producers participate in the allocation and distribution of resources. In the past governments have expropriated producers in favour of the ruling elite and urban dwellers in general. This has led to the disaffection of the producers and consequent decline in production. Attempts by governments to find an independent base for accumulation through state farms will not do either, since state farms in Africa have acted in direct competition with the small producers for the allocation of limited resources for agricultural production, without showing any surpluses but, instead, continual deficits. Also, at the political level they reinforce the bureaucratic approach to development.

5. Finally, scientific research and technological development should be geared towards the fulfilment of the objectives outlined above. In the past the governments relied on imported technologies which favoured export agriculture in the so-called modern sector. These technologies encouraged specialisation or monoculturalism by being indifferent to traditional staple crops e.g. the maize monoculturalism in Southern Africa which has proved to be so ruinous of the soil. Traditional staple crops, despite their light yields, were better suited to Southern African soils. Every attempt should be made to re-instate and up-grade traditional crops through scientific research, which takes advantage of the existing stock of information among the ordinary producers. Naturally, the development of indigenous technologies is contingent on the re-orientation of the educational system in general. The few agricultural colleges in Africa still teach European agriculture in the tropics.

The above five points would provide a basis for a self-reliant agricultural economy in Africa. But it should not be imagined that all countries can be self-sufficient in agricultural

production. Lesotho is one example in Southern Africa which comes to mind. In trying to overcome these problems, a regional approach should be adopted. It would not make sense to rationalise production at the level of households and not at the level of governments. Myopic nationalism is antithetical to collective self-reliance which should be a guiding principle amongst people. Likewise, self-sufficiency and food security at the national level should not be confused with the same at the level of the people. The latter is contingent on the elimination of class deprivation and exploitation which in Southern Africa is compounded by racism. For all we know, people in Southern Africa might still starve in the midst of plenty. This is a problem, not of petty reformism or charitable ameliorations, but of the Southern African agrarian revolution in which South Africa is the kingpin.

NOTES

1. As Monica Wilson puts it: "The peasants described here differed in one important respect from those to whom the name is commonly applied: they were radicals who could and did adapt to a new world" M. Wilson and L. Thompson (eds), The Oxford History of South Africa. Oxford, 1971. p. 53.

2. According to Bundy, in the early 1830s "fifteen hundred wagons of produce were taken to Grahamstown market each year and the district of Albany exported over 50,000 Sterling Pounds of goods a year. By 1835, when Port Elizabeth was handling 80,000's Sterling Pounds worth of export produce, a certain Mr. Kay estimated that "from 50-60 Sterling Pounds of this was goods obtained from Xhosa producers". C. Bundy, The Rise and Fall of the South African Peasantry. London. 1979. p. 31. S. Trapido, *Landlord and Tenant in a Colonial Economy: the Transvaal (1880-1910)*, Journal of Southern African Studies. 5, 1 Oct., 1978. D. Denoon, *Southern Africa Since 1800*, London. 1972.

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3. For the Transvaal, Trapido states that: "In December 1903 the Vereening Estates and Land Co. farms had 20,506 acres under cultivation... White tenants and their familes... cultivated 3,120 acres. Black tenants cultivated 16,296 acres". Elsewhere he concludes: "It comes as no surprise therefore to discover that a 'merchant of Pretoria' could tell the Standard and Diggers News that after 'careful computation of the market books' he had concluded that 'Kafirs take away 47,000 Sterling Pounds from the local market for every 26,000 Sterling Pounds taken away by Boers". S. Trapido, "Landlord and Tenant in a Colonial Economy: the Transvaal (1880-1910)", Journal of Southern African Studies, 5, 1 Oct. 1978.

4. During the reading of the Bill on Rights of Coloured Persons in Respect of Fixed Property in 1908 in the Orange Free State, it was acknowledged that "two-thirds of the grain produced in the Colony was grown by blacks". According to one commentator, competition was such that "The white farmers welcomed with open arms any black family with stock and equipment who could plough and sow" for them.

5. In the 1850s and 1860s it is reported that Africans in Natal had stepped up crop production "to such an extent that in many areas the local population produced sufficient surplus grain to support white villages (as well as many individual white graziers)". Bundy, op. cit. p. 172.

6. Dr. M. Rukuni of the University of Zimbabwe, who happens to be working on the same problem, believes that the FAO estimates are "too optimistic" - personal communication in Maseru, January, 1987.

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(Continued)

7. C. Meillassoux. Anthropologie Economique des Gourou de Côte d'Ivoire. Paris, 1964. Also, *The Social Organisation of the Peasantry: The Economic Basis of Kinship*, Journal of Peasant Studies, No. 1, 1 Oct., 1973.

8. Samir Amin, *The Dynamic and Limitations of Agrarian Capitalism in Black Africa* in P. Gutkind and P. Waterman (eds) African Social Studies. London, 1970. P.P. Rey, Colonialisme, Neocolonialisme et Transition au Capitalisme. Paris, 1971. P.P. Rey, *The Lineage Mode of Production.* Critique of Anthropology. No. 3, 1975. H. Wolpe, The Articulation of Modes of Production. London, 1980.

9. It might be true that colonial plunder, where it occurred, was not necessarily systematic, given the fact that it was essentially extra-economic. But the same could not be said of imperialism, from which no Third World country escaped. In the case of imperialism, which relied on deliberate export of capital for higher profits, the extraction of surplus-value or exploitation of cheap local labour and raw materials was and still is systematic.

10. Nationalisation of all land in African countries should be seen only as a juridical ploy for preventing expropriation of the vast majority of the people by multi-nationals and local monopolies, and not as an excuse for state monopoly of any kind.

SOME FACTORS WHICH IMPINGE UPON FOOD SECURITY IN SOUTHERN AFRICA: THE CASE OF SWAZILAND

B.B. Sikhondze

Introduction

Insecurity in food supplies often precipitates social and political problems which may later lead to demonstrations heralding changes in existing political institutions. The Ethiopian case is one of such living examples where not only food shortages experienced by the underprivileged but even social and political problems did force the state to gravitate to the most undesirable situation - undesirable to the privileged echelons of the society. Whatever the direct and immediate cause of the revolution, food shortages which resulted in famine and loss of life contributed directly to the eruption of political upheavals in Ethiopia. In short, instability in food supplies more often than not leads to some political instability. The Ethiopian example is just one out of many; and in Southern Africa similar events have recently shaken the latter orbit of the African continent in these closing years of the 20th century. In Swaziland, for instance, shortages in food supplies such as vegetables, meat and fruits experienced from 1978 to the early 1980s, threatened the political stability of the state. Similar problems also shook the political foundations of Lesotho recently and the immediate causes of the upheaval was the discontinued food supplies to Lesotho by South Africa. However, the gist of the paper is not the examination of the aftermath of food shortages as the causes of food instability in Southern Africa. In the attempt to write the paper Swaziland

was chosen as a case study due to its problems being more familiar with the author than those of other states in the Southern African orbit of the continent.

The areas upon which the study centres are political, economic and climatic factors inhibitive to food security in Southern Africa with special emphasis on Swaziland. Basically, the issues at stake are the attitudes of the administration towards the tenure of land and land-use patterns and their connection with the mandate of traditional leaders such as chiefs in so far as the allottment and tenurial periods are concerned. In most instances chieftain authority has been inhibitive to most developmental projects especially those which threaten to wear thin their authority over their subjects. But what is crucial is also to ascertain the type of relationship existent between the policy of the administration about food security and the authority of the chiefs that is said to be obstructionist to production. If such a policy is wanting in firmness chiefs will water down most of its ideals especially those that threaten to weaken their somewhat autocratic authority over those whom they lead. Yet another crucial issue during this period of the twentieth century is the recognition of the dual role of so-called food crops in the rural economy of the country. Some food crops are grown to satisfy consumption and cash needs, and the determination of the ratio is left to the producers themselves, who know more than any outsider the various needs of their domestic economies. In short, the security of the market for such crops, sometimes internal and also external should be provided by the administration in conjunction with the stage by stage cooperation of the cultivators themselves. The unavailability of reliable consumer markets injects insecurity into the growers which would in turn water down their enthusiasm for participation in the production of food crops. That is not the end rather a step to yet another very decisive stage which is none other than the determination of the consumer price. The latter is decisive in so far as the lucrative and non-lucrative nature of the commodity price determines the level of production. In close relation with the latter would be the question of credit facilities. The latter are made available to debtors on

condition that they are payable back with some interest, and before credit organisations are instituted; feasibility studies are conducted to ensure that the project will not be a liability to the state, rather it should possess the potential to generate capital in addition to feeding the nation adequately. Lastly, one of the fundamental issues in the history of agricultural production today is the state of water resources and its potential to support irrigation farming. Most small-scale farmers depend on rainfall for their farming activities, a drawback to the promotion of food production as well as that of other crops. At this point the discussion will delve into these problems, the question of politics being the first on the agenda.

Traditional Authorities and Food Stability

The desire to maintain the status quo in so far as the political hierarchy is concerned in Swaziland has proved to be one of the most powerful handicaps to the realisation of self-sufficiency in food production and supplies.

In each chiefdom there is a chief who takes charge over the allocation and redistribution as well as the use patterns of land, as a means of production! In the majority of cases some of these political leaders have not been enlightened on the prerequisites for economic growth and/or development. The dearth of education, which will or should enable these authorities to lead their subjects with some up-to-date and relevant awareness, has often handicapped developmental projects. For instance, the allocation of land has not been governed by the economic needs of the leader's subjects, rather other related factors have intervened. Economic considerations have often been superceded by issues of social and political nature.

Before land allocation is made chiefs have often been bothered by the social and political background of their followers. In cases where the applicant's social and political background is either humble or unknown very little land would be allotted.

This is done in a bid to maintain the status quo whereby the destitute should continue in that state while the well-to-do are assisted to continue with capital accumulation by amassing more of the means of production land - as is allocated. In short, limitations on the amount of land allocated to people who are not associated with chiefs or their assistants are a cause for meagre and marginal food supplies.[2]

Once land allocated to each family proves to be too little for grain production, which forms a staple food crop, the cultivation of supplementary crops such as millet and sorghum and beans, automatically gets cut out of the economic activities of the growers. Lack of such diversification is detrimental to the viability of any nation not only in terms of food supplies being limited but even in so far as balancing up one's diet is concerned. In other cases commoners who are quite prosperous in their agricultural production would be forced to give up parts of their land for redistribution to those who need more. What it all means is that some chiefs develop antipathy towards their productive subjects, a phenomenon that counteracts any form of development or progress. In those instances where land reductions may prove a futile attempt to throttle progress in agricultural production some case that would necessitate the expulsion of the subject would be concocted. Since there is no law providing security to the subjects, the latter live in perpetual fear of being expelled and as a result become less productive agriculturally. Not only do these factors impinge on grain production but virtually every economic activity gets affected thereby rendering the rural economy weak and dependent on the South African agricultural economy.[3]

Apropos of the latter obstruction to the realisation of food stability is lack of government support for the projects that are geared towards security in food supplies. For the Rural Development Areas projects, hereafter referred to as RDAs, to take off, the government needs to design a clearly defined policy on land allocation, tenure and use patterns that would supercede the whims of the traditional authorities like chiefs and their assistants. A spectacular example is that of land enclosure which is anathema to some chiefdoms while others do

permit its practice. Land enclosure allows the growers to cultivate their fields anytime of the year without much interference from livestock and similar intervening factors. Also, land development projects could be implemented without any fear that the investment would turn out to be tantamount to some waste in the sense that wandering animals would come in any time to destroy whatever crop that could have been cultivated. In short, land enclosure encouraged growers to invest in the form of rejuvenating the soil and other things without any reservations because they would realise the fruits of their capital and labour power in due course. But where the politicians reserve their pronouncements in relation to the development of the rural economy, output in production goes down. However, in certain instances, some decree gets published, for instance in 1980, when Prime Minister, Prince Mabandla, passed some national policy towards redeeming the food situation by making each military barrack to produce its own food, he did not receive much support.[4] It was due to such apathy that his policy towards remedying the food crisis fell on rocky ground, especially after his overthrow. Prior to his fall the Malkerns Camp had begun some industrious work on the project to the extent that not only did they feed the whole defence force but even went to the extent of depositing some of the maize onto the local market. Vegetables were also produced in abundance for consumption by the military as well as for sale, and this development coincided with the short supply of South African vegetables to Swaziland following some cholera outbreak which led to these being stopped at all the border posts.[5]

Alongside these obstacles is yet another bewildering obstruction to the improvement of the agricultural and rural economy of the state. In the same way as in the above case, the state has remained inactive in relation to the consumer market for agricultural produce such as foodstuffs. This aspect stands astride the economic and political issues in so far as its absence (market) affects the economy of the producers and at the same time its absence results from either the failure or the unawareness of the state or administration to provide it or realise its viability to the improvement of the national revenue.

Ensuring the establishment of a viable food market locally would encourage each region to step up production of each crop suited to a region thereby introducing some economic interdependence between the climatically various areas of the territory. In other words, local producers need the state to support them against any outside producers by decreeing some policy that will govern trade in agricultural products. Such security would gradually lead to some food stability. But since Swaziland has not yet designed such a policy the state of food security becomes precarious by the day as the population increase assumes a faster rate than that of food production.[6] This aspect links up with the various economic problems that have stood very firmly on the way of progress in so far as food security is concerned.

Cultivators and Financial Facilities

When maize gradually replaced traditional foodcrops like millet and sorghum in the 1950s, the position of food and food supply became precarious. This was caused, among other factors, by the new technology and concomitant demands the latter crop (maize) had on its growers. The simple and relatively backward mode of production which had been used to produce millet and sorghum needed some overhaul, an expensive undertaking in terms of time, capital and labour power. In practical terms what this process meant for the grower was that while he was busy upgrading his farming technology so that he could adopt maize at the expense of millet and sorghum, his harvest in maize did not rise adequately. In order to master the technology that would give them (cultivators) reasonable returns, they also needed to identify the types of soils and climatic conditions that were suited to the production of the crop in question. This process lasted until the latter days of the '60s, when in September 1968, Swaziland was once again declared an independent African sovereignty. Since this political event occurred at a time when the people were struck by famine, made worse in the same year by some drought, the government deemed it imperative to address itself to the food issue before anything else.[7]

As though this was the long awaited opportunity, the World Bank moved in swiftly and introduced to the still 'confused' government solutions that could ease the food shortage problem. As an indication of a 'confused' state of mind regarding the direction to be followed to alleviate the food shortage in the country, the 'independent' government accepted the economic package of the bank. Among the most undesirable clauses of the package, was the fact that maize should be turned into a commodity in order to whip up sufficient enthusiasm among the cultivators not only to expand the area under cultivation but to seek means of maximising their harvests of the crop. At this stage it had dawned even on the less observant that maize and the farming technology of the growers were not congruous. Supporting the expansion of maize production before an overhaul of the farming system of the growers was tantamount to rubbing salt onto an ulcerous wound. Yet another alternative could have been to promote the cultivation of those crops that were already on the losing end. These were the traditional ones such as millet and sorghum whose production technology was already well-known and could only need some improvement here and there to jerk up output to keep abreast of the expanding population.

But before the discussion goes beyond this premise an unavoidable question at this juncture would be, what was the objective of the bank to intervene and seek to commoditize maize? To commercialise a crop and meet satisfactorily the consumption needs of a nation seem to stand parallel to each other. It would be fallacious to describe these bank ideals as sympathetic to the problems of the Swazi nation which was attempting to stabilise the base of the very foundation of the country prior to their embarkation upon other subsequent prerequisites for development. Apropos of the commercialisation of subsistence agriculture was the basis upon which the marketing of maize would be done. Cultivators had been ordered by the financing organisation through the Ministry of Agriculture, to deposit to the market 75% of their maize harvests while retaining 25% for domestic consumption.[8] The cultivators were further enlightened on the fact that their receipt of financial assitance to promote farming from the bank

was dependent on their observance of the proportion of maize for the market and for domestic use.

Naturally farmers or growers, like all other groups of human beings, are intelligent in so far as they know their needs and can plan carefully any future adventures geared towards meeting the needs. In the Swaziland of the 1970s, such as 1971 and 1972,[9] growers were preoccupied with the problem of what should be done to stabilize food supplies? The question of producing for capital acquisition and accumulation was secondary to those of feeding because a nation without food is dead. In order to qualify for the bank finances growers "accepted" somewhat without flinching the economic package of maize while retaining the balance for domestic use.

The explanation of the latter statement is based on the culture of the Swazi. Whenever a traditional Swazi speaks of his family, not only does he have in mind his wife and children but it goes beyond just that perimeter: Swazi families are extended and support extends to all other needy members. These could be great-grandparents, parents, aunts, uncles, nephews and nieces, which automatically meant that the 25% to be retained for consumption purposes never went even half way to meet the needs of extended families. Culturally, the protagonists of the economic development package were not well-versed with the way of life of the recipients. In short, the problem of international aid is that the amount and uses of the money lent are discussed and concluded at a much higher level, which excludes the participation of those directly affected by the credits. The result of this has often been the destruction of whatever might have been constructed and the promotion of suffering consequent upon the consistent decline of food supplies.[10]

The commercialisation of maize also went along with the introduction of new seeds that required a relatively short period for maturing. These seed varieties could not be grown anyhow and anywhere but did also require some special know how which governed the time for planting, fertilizers to be used, soils where the varieties would prosper and many related

prerequisites. Growers in the pilot areas were expected to discard traditional maize seeds in favour of the former because these hybrid seeds took a much shorter time to ripen and be harvested.[11] The implications of such a project were that seeds could not be procured from any past harvest because such seeds would not produce an adequate return no matter how good the crops might have been. Cultivators would therefore have to purchase seeds every year. Along these purchases were also those of fertilizers and urea as well as insecticides all of which worked jointly towards a good harvest. Some cultivators, among those whose purses were flagging, had depended on kraal manure for a good harvest when they still planted their traditional seeds. But in the case of hybrid seeds kraal manure needed the support of fertilizers and urea both of which are expensive which meant that poor small scale growers could not afford to acquire enough to meet their requirements. Such was a capitalist mode of production carefully calculated to exclude and eliminate from the world of commercial farming those who were poor in support of the rich. At this time, 1972 and onwards, industries that produced and sold these inputs in Swaziland, had their base in South Africa, and that explains why input prices were at a level far above that of the poor Swazi grower. The strategy was to continue in the support of the agricultural industry of South Africa that has continued to patronise agricultural economies of the neighbouring states to a point where they become dependent in every sense.[12]

Since maize has been undergoing some transition from being purely a subsistence to a cash crop, the need to secure a viable market for the crop has been growing. It was part of the Ministry of Agriculture's duty to ensure some smooth network between the producing fields and the consumer market. This could have served as a powerful incentive to produce more maize than before among those whose responses to the commoditization of the crop were positive. But the situation has rather been discouraging due to the fact that the only local agent, the Swaziland Milling Company, has not been injecting zeal into the growers to maximize their maize production.[13] The reverse has been the case mainly because

the company would purchase maize from large scale producers and other corrupt politicians. Once all this maize has been consumed the quarter reserved by the consumer for locally produced maize, reaches saturation point. At this stage only a marginal proportion of small scale growers' produce of maize gets purchased, with the bulk being turned back.[14] This kills whatever incentive there might be among the growers, and inspite of a series of petitions made to the Ministry of Agriculture to intervene on behalf of the growers, there has not been any progress, rather the situation continues to worsen.

The explanation to the latter problem is not hard to find. Influential politicians in the country become partners with organisations of this kind by having shares in these businesses so that instead of attending to the needs and problems of the people to whom they minister they guard their own interests. What most politicians are concerned with is to satisfy themselves and agnates and forget about other members of the nation. This problem goes hand in hand with that of credit facilities which are a necessity for any agricultural sector to take off. By independence in 1968, already the Swazi Bank had been established to help make available to Swazi farmers financial assistance with a view to improve their farming economy.[15] An assistance of this nature was meant for farmers and not cultivators who produced for the sake of meeting consumption needs first, and as a result small scale growers who produced for domestic use were left in the cold. The view that credit facilities were meant for commodity producers is borne out by the fact that both food and commodity producers competed under the same conditions for financial help inspite of the fact that producers of the former variety of crops did not produce for sale, and even when they did their crops did not command a reasonably lucrative price.[16]

There is yet another anomaly in the selling of inputs by those companies which produce them, in that, both cash crop farmers and growers of food crops purchase their inputs of fertilizers,

insecticides and other requirements at some uniform price. This practice has given rise to some dissatisfaction among food crop cultivators due to the fact that failure to lower the price for them was too destructive. The bone of contention is that the crops they grow are meant to meet consumption needs and not to generate capital. In the case of cash crop growers the situation is slightly different in that the money spent on the inputs is recoverable with some profits over and above the equivalent of the expenses incurred at production. The argument goes on to involve the dimension that even if maize were looked upon and treated as a commodity the price it commanded on the market did not in any sense justify the expenses which are often incurred at the production level. In short, it did not offer a competitive price in order to attract many growers to produce not just an equivalent of their domestic consumption needs but also to afford some marketable surplus.

The discussion above has already referred to credit facilities meant to help farmers purchase most of their farming requirements. At this point it is necessary to once again refer to other facilities of a secondary nature in the case of maize production and marketing. Indigenous Swazi farmers and cultivators lack a marketing system that will distribute food from those areas which have the potential to produce it to those that suffer from some continuous deficit. The circulation of such locally produced items would ensure farmers who concentrate on food production of a viable and secure market. This could have worked out conveniently for both groups of farmers (cash and food crop producers) and could have further encouraged them to push up production on crops that are suited to their respective environments. In short, this issue ties up very neatly with that of food distribution as one of the obstacles to realising food security in Southern Africa. Lack of machinery that will facilitate food distribution from areas that produce to those that suffer from shortages in food, makes it difficult for the producers to know the level of the need in order to maximise foodstuffs in the country. This aspect corresponds neatly to that of food storage whose

absence and undeveloped state would constantly bedevil the security of food supplies in the country. What has been happening as a result is that farmers, after the Ministry of Agriculture's advice to sell their maize crop before it was spoiled due to poor storage, have been selling their crop to the Swaziland Milling Company who store it, but in South Africa. Due to limited and poor storage facilities of individual cultivators and farmers, it becomes imperative to sell their crop in a hasty manner to get rid of it before it gets spoiled. This deprives them of any form of bargaining power in terms of negotiating the price to a level not too depressed for the producer. Since every effective Ministry of Agriculture would know or at least have some general knowledge of the level of the standard of living of the people it ministers to, the onus is on the ministry to ensure the provision of storage facilities where the poor growers could store their food for future use or sale.

On the field studies that we conducted, growers who could not afford to purchase their own storage tanks felt that if the government intervened and provided these facilities on a rental basis, and whenever the sales were made have it deduct rent, the precarious food situation could be saved. In their testimonies they gave the impression that they were fully aware of the expenses involved in the exercise. Not only does it involve the purchase of tanks but the acquisition of certain chemicals without which it would be difficult to store the crop in a way that attacks by moths can be counteracted. The provision of local storage would also make it possible for the food to sell at affordable prices even for the poverty stricken yet when stored outside the country the prices get so inflated that some people fail to purchase adequate amounts.[17] This leads to starvation and a nation that suffers from the latter cannot invest its resources profitably to promote the nationally constructive development projects. Food that is stored outside a country becomes more expensive than the locally stored one due to transport charges and tariffs at the port of entry. In short, these facilities are a necessity for the stabilisation of food supplies in the country and these cannot be realised unless the finance necessary is adequately available.

Climatic Conditions and Food Stability

It would be erroneous to leave out yet another variable in this area, and that is climatic conditions which either work counter or for food stability in Southern Africa, especially in Swaziland.[18] The latter territory is divided geographically into four different climatic zones, namely the highlands which have a fairly temperate climate, the middle-lands which possess a climate that is somewhat temperate and yet can be dry and hot at other times, the lowlands which are dry and finally the Lubombo mountains or plateau with some temperate climate but less so relative to the highlands. Maize production fitted neatly to the first and last regions of the country, while the midlands could grow the same crop and a variety of others. The lowlands are congenial for cattle grazing and the production of sugarcane and cotton as well as other crops, provided wherever they are grown there are sufficient water resources to allow for adequate irrigation farming. Since not every farmer could afford the latter form of farming, those poverty-stricken ones depend on the availability of rain. Reliance on rain for farming is a major handicap in Swaziland, and yet the majority of growers, if not all, on Swazi Nation Land practice dry land farming. The implication of this dependence on dry land farming is that should the rain delay to fall, the farming season would also be delayed.

While even casual observers are aware of the effects of droughts on farming something much more constructive could be done. The Ministry of Agriculture, an executive organisation that government gave the power or right to investigate all the obstacles that stand on the way of progress, stands to blame for failure to rehabilitate those areas that do not receive enough rainfall for agricultural farming to flourish. As a government's executive body in that section it has the right to make the necessary representations to the government regarding the state of affairs in farming. It does not mean that if there is lack of rainfall then farming cannot be undertaken. For instance, the territory is endowed with large amounts of water that could be harnessed to facilitate farming, either by diverting some water from the big rivers that flow

through the country and/or employ means to draw the water which lies buried in the swampy parts of the country by means of boreholes. In dry countries such as Burkina Fasso and others these means can be used to make it possible for farming activities to go on.

History has indicated that unless the latter means of ensuring some stability in food are harnessed this part of the continent will suffer from severe famines. There have been droughts before, especially from the late 1960's and the 1970's, but droughts that began their invasions of the region from as early as 1980 onwards, have left behind a trail of suffering. What is peculiar about the droughts of the 1980's is that there seems to be some abnormality in the manner in which rains come and the distribution even within one small area; that unless irrigation farming, expensive though it is, is assimilated to the habits of the farmers the state of food and supplies will continue to deteriorate.

While it might be true that droughts are sometimes responsible for famines, it is also important to know that there are resources that have not been harnessed and if they were employed constructively, the food situation which is deteriorating could be saved. This is indeed a political issue because politicians are the ones that make decisions and plan for the people whom they lead. Money might be a problem but could still be raised for investment in agriculture, which, for any nation, remains that nation's economic backbone. International financial aid, could be used to integrate irrigation farming to the economic activities of the farmers in the region. In short, the money could be invested in boreholes for very arid places and for the construction of canals where big rivers flow. Other means of irrigation like pipes could also be acquired to promote agricultural farming that could lead to some stability in food production in the region. In a nutshell the whole issue becomes a political one because something could and should be done by the politicians to save the situation. The need for them to know their priorities is crucial.

In conclusion, while one has dealt with the political, economic and climatic obstacles to food security in Swaziland, it seems that the main handicap to food security in the country is political. The need to adopt a clearly defined land reform policy cannot be underemphasized. Also there is some unavoidable call for an agricultural programme that will enlighten farmers on the main problems that hamper farming, and the solutions. Politicians need to work in close collaboration with farmers' associations and produce cooperatives so that they understand clearly the issues at stake. In this way whatever project that might get executed will receive the symbiotic cooperation of the farmers because it would be relevant to their real problems. Politicians need to realise that while it is empirically plausible that farmers work to improve their economies, it is equally factual that without them the nation would suffer. They provide all the necessary food, they boost the national revenue and contribute to the viability of the state in several other ways.

NOTES

1. In Swaziland nationals have a right to be allocated adequate usufructuary rights to the Swazi Nation Land, because land is held by the King in trust for the nation. The implications of this being that Swazi Nation Land, as being one of the categories of land, cannot be held on a private title deed land basis.

2. By being threatened with eviction and transfers growers shy away from industrious farming, and also avoid adequate development of land lest they be asked to shift and settle somewhere else. See Bonginkosi Sikhondze, *Food Production and Industrialisation in Swaziland*, paper presented to the conference on Scientific Agriculture in Africa, sponsored by P.W.P.A., Lome, Togo. 8th - 10th December, 1986.

3. Ibid.

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4. See The Times of Swaziland, September 25, 1980.

5. Bonginkosi Sikhondze, *The Social Impact and Responses to the Declining Standard of Living in Swaziland*, paper presented to CODESRIA Conference, Dakar, Senegal, 21 - 23 July, 1986.

6. Lomagugu Masango, *The Impact of RDA Projects on the Quality and Quantity of Maize: The Case of Ludzeludze*, B.A. Dissertation, University of Swaziland, April, 1983.

7. Swaziland Central Cooperative Union Centre. Annual Report, on 'Maize Production', Manzini, 1971.

8. This data is also contained in the Annual Report of C.C.U. Manzini, 1972.

9. MEU (May, 1973) RDA's Maize Production and Marketing, Study; No. 4.

10. These testimonies were made by those farmers who were interviewed during the field study trips undertaken in Manzini; Moses Dlamini, Gundwvini, 25 July, 1984; Sabelo Dlamini, Gundwvini, 21 May, 1985; Mhlupheki Shongwe, Ngqulwini, 9 August, 1985, and many others confirmed this view as being authentic.

11. Lomagugu Masango, *The Impact of RDA Projects*, April, 1983, p. 19.

12. This point is discussed at length in Bonginkosi Sikhondze, *Food Production and Industrialization in Swaziland*, Lome, December, 1986. pp. 10-15.

NOTES
(Continued)

13. Bonginkosi Sikhondze, *Some Problems of Economic Growth in Southern Africa: The case of the Manzini region of Swaziland*, 9th SAUSSC, Dar es Salaam, Tanzania, 2-6 June, 1986.

14. Since the year 1983 that has been the situation hence the review of this development in The Times of Swaziland, September 5, 1986.

15. Ministry of Agriculture, Annual Report, Swaziland, *Bank Involvement in Farming*, 1973.

16. The difference between the prices of cotton and maize per kilogramme was as big as R3 - R5 depending on the quality of cotton, sometimes it could be far more.

17. In the year 1985 for instance farmers sold their maize produce to the Swaziland Milling Company at E18.00 per 50 kilogramme bag and when the maize was sold back to them it had gone as high as E25.00 per bag.

18. Swaziland is the case study for the paper and most of the arguments raised are based on the Swaziland experience.

AGRICULTURAL PRACTICES; AGRARIAN ISSUES AND FOOD SECURITY: THE CASE OF BOTSWANA

Ntwaetsile Teedzani Morapedi

Background

By 1966 (i.e. at independence) over 90% of Botswana's total production was employed in agriculture and agricultural related activities. This means that most of the country's population was still in the rural areas. By 1985, about 75% of the total population was still in the rural areas and it is anticipated that by 1991 about 2/3 of the population will still be in the rural areas.

The trend in the Botswana population is demonstrative of the fact that in spite of rapid urbanisation since 1965/66 the largest section of the population is still rural and will continue to be so for some years to come. This means that the proportion of the labour force released to other sectors is much lower than that which remains in the rural areas. The rural-urban population relationship is indicative of the fact that most of the rural households are engaged in the production of food. This being the case, any policy efforts regarding the improvement of the standard of living of the rural areas should be largely centred on agriculture. Secondly, any agrarian issues/policies taken on national food security should take cognisance of the full participation of this rural sector which is agricultural oriented to achieve the objective goals of food availability. Their food production output would therefore determine the amount of food imports including food aid

required to offset any food deficit.

Agricultural Practices

Both livestock production and arable farming are the main activities in Botswana's efforts towards food production and as such national agrarian policies relate to these two major activities. Wide differences exist between groups of farmers in terms of resources, methods of production and technology employed. Because of arid climatic conditions livestock production especially cattle, has the advantage over arable farming. The cattle industry further dominates all other livestock like sheep and goats, poultry and pork. But this is mostly a monopoly of the rich since cattle distribution is so skewed that 50% of the national herd is owned by only 5% of the rural households whereas 45% of the rural households do not have cattle at all. This renders it difficult to create any observable trends to increasing food grain production amongst the poorest households since they drastically lack draftpower in the form of cattle for traction.

Botswana's agriculture is practised on a three-tiered land tenure system. These are the freehold (5% of total land), state land (25%) and tribal land (70%). Both the freehold and state land practice commercial farming and account for 0.4% of the total number of farms, hold 14% of total cattle population and produce 37% of sorghum, maize, millet and pulses. Most of the fruits, citrus and vegetables are produced through irrigation in these areas particularly the Tuli Block Freehold land. But owing to its proximity to South Africa most of the fruits and vegetables first find their way into the Republic of South Africa and later are re-imported at high prices.

Most of the traditional farming is practised on tribal land which accounts for 99% of all farms, 85% of the national herd and 63% of basic crop production. Both rainfed arable cropping and the open cattlepost systems are practised. There are two distinct groups of farmers; those who farm with cattle and aim to make a surplus but on a smaller scale than the

commercial farmers, and the resource poor with very few or no cattle at all whose food output is always below the subsistence requirements. Variations in food output and intake are therefore a serious problem.

AGRARIAN ISSUES AND FOOD SECURITY

Background to Food Security:

The major factors that influence Botswana's national food security are its geographical and climatic situation as well as its strategic position and the economic dominance of some of its neighbours within the region. The uncertainties of rainfall, prolonged droughts and a poorly adapted arable subsistence agricultural sector and both an increased population growth (3% p.a.) and rapid urbanisation have all contributed to the country's increased dependence on food imports supplemented somewhat by food aid. The imported foodstuffs are mostly consumed in the urban areas and big villages whereas the rural areas find these rather expensive. Food aid has thus become a permanent feature of the food supply situation in Botswana. This is a result of recurrent food shortages over the years.

The Demand and Supply of Food:

The annual demand for food grains has since increased from 100,000 tonnes in 1979 to 190,000 tonnes in 1985 and is expected to exceed 200,000 by 1991. Recent local food grain production/supplies have, except for two years, not matched the total demand for food. Instead yields have decreased substantially due to continued droughts, poor rainfall, poor soils and lack of appropriate technology. Most of the demand for vegetables, citrus and fruits are met from imports. Their local production is constrained by high temperatures and lack of irrigation facilities. The production of basic food crops between 1979 and 1984 reflects thus:

Basic Food Crop Production (1979-1984)

Food Crop (in 100 tonnes)	1979	1980	1981	1982	1983	1984
Sorghum	4.3	29.1	28.3	3.8	5.2	5.7
Maize	2.3	11.6	21.4	12.4	8.5	0.5
Millet	0.9	2.9	1.8	0.5	0.4	0.7
Beans/Pulses	1.0	1.8	2.7	0.5	0.3	0.4
Total	8.5	44.8	54.2	17.2	14.4	7.3

In the meat sector, the growth in beef production has exceeded demand but production is export-oriented. Production of poultry and pork-related products is almost accomplished but urban-biased. That of sheep and goats is promising and with its fair distribution amongst small farmers is appreciated to meet nutritional requirements. The high incidences of deaths from diseases affect both production of this small stock for local consumption and for the urban market and export. Very little dairy is practised and almost all dairy products are imported but end up mostly in the towns and big villages.

The present agricultural practices leave the country prone to serious food problems. The system reflects large variations in food production and wealth among the peasantry. The wealth of the rural households is based upon cattle but these are concentrated in a few hands. This enables the gap between the rich and poor to keep on widening. Whereas the majority of the farmers depend on crop production, many of these do lack the means to purchase food during periods of crop failure or when food stores from the past harvest have been depleted. The situation is aggravated by lack of meaningful employment opportunities in the agro-rural industry and this does limit the purchasing power of many people. The other fact to note is that many of the land-holdings are farmed by women with in-

adequate farm hands, draft power and essential implements, which adds to the household food security problem. About 1/5 of the males are outside the country and their absence increases insecurity of food grain production. However, in some cases migrant workers send remittances to their families and such aid reduces the incidence of hunger.

The Botswana situation reflects that food supplies still remain unevenly distributed between regions, socio-economic groups and within families. Large sections of the population remain inadequately fed in terms of nutritional requirements. The most affected are the young children, expectant and lactating mothers, the rural and urban poor, the old-aged, the unemployed and under-employed in low income groups. Agriculture fails to generate employment opportunities yet the rural labour force continues to grow. Underemployment therefore becomes a very serious issue. Those who make surpluses face problems relating to marketing, low prices, processing, storage, transport and high competition from hostile foreign markets which outbid the local producer in terms of quality control, variety and close food substitutes.

Government Response towards Food Security:

A number of policy instruments are used so as to make food available for all and redress the depressing hunger situation.

The policy efforts towards food availability are seen in Botswana's agricultural sectoral policy objectives which lay emphasis on:

- Providing adequate and secure livelihoods for those involved in agriculture.

- Meeting the employment demands of a growing labour force and increasing food self-sufficiency.

- Increasing agricultural output, and

- Conserving agricultural land resources.

The broad aims of the agricultural sub-sectoral policies, relating particularly to food production and the goal of food security cover:

- The development of a livestock industry on the basis of sustained production.

- Development of basic food crop production to provide improved and more reliable food supplies for most of the farm families and those who show sufficient management ability and encouragement of commercial production to increase cash incomes. This can be met through the provision of a basis for a progressive arable industry.

- Introduction of a system of land use that would allow for increased production while conserving the national land resources.

Although the policy instruments are sound they may promote contradictory or conflicting objectives. For instance, whereas high prices from agricultural production, increase incentives, food production, promote economic growth, create employment, they at the same time may reduce accessibility to food consumption. The poor majority will then suffer from hunger, and the urban workers and/or high income groups resort to food imports. However, low food prices are a disincentive to the above but promote food consumption. High prices, local currency fluctuations with regard to imports of agricultural inputs, lack of improved technology also have a bearing on food security.

However, a number of policy strategies were initiated to meet the goal of food availability, viz:

Food Grain Production:

Government has laid emphasis on the importance of cereal and legume production to attain the goal of self-sufficiency in staple foods. It therefore initiated programmes that can lead

to increases in food grain production. These include introduction of seed varieties that could survive the poor soil conditions, dry seasons and pests. Research programmes such as Evaluation of Farming Systems and Agricultural Implements Project (EFSAIP), Integrated Farming Pilot Project (IFPP) and Seed Multiplication Scheme were implemented and after thorough investigations came out with technical packages on farming systems suited to Botswana conditions.

Both the Arable Land Development Programme (ALDEP) and Accelerated Rainfed Arable Programme (ARAP) were recently introduced to intensify food grain production. The programmes respectively take care of developing both small scale and medium scale arable farming. They employ packages that can substantially improve food grain and ARAP in particular is expected to use improved farming technology that would have long-term effects of maximising production through higher yields and also boost farm incomes. The two programmes complement one another as their objectives cover increased food production, attainment of self-sufficiency in basic food grains and legumes at household and national levels, raising of arable farming incomes, income distribution and employment creation in arable production activities.

Another step towards local food production is the recently launched large scale rainfed and irrigation programme at Mpandamatenga in the Chobe District. The programme encourages farmers to intensify production of basic food crops such as sorghum, maize, wheat and possibly vegetables. Farmers are allocated land (of 500ha minimum) and qualify for funds to purchase basic inputs, equipment/machinery for land clearance and destumping.

In spite of these efforts Botswana still remains insecure in local food production. Most of the food grain production is dependent upon rainfed programmes and has failed mainly because of inconsistent rainfall patterns aggravated by recurrent droughts. There is therefore need to develop water resources and where available like in the Okavango Delta, intensify irrigated agriculture as a useful scheme for staple

food production, expansion and creation of employment opportunities.

Other Strategies towards Food Availability:

Efforts and achievements made in the raising of livestock and arable food crops do not alone suffice as the major means of making food available to the nation. Present policy strategies aim at making food available at all times including drought years or deficit periods preserving available food stores or production resources for difficult periods to come.

To achieve the objective goals the following institutions/ services were devised:

Drought Relief Programme:

Sometimes Government efforts to increase food production are paralysed by persistent droughts and result in dramatic falls in basic food production. For instance, during the past National Development Plan Period the production of cereals and pulses dropped below 15,000 tonnes p.a. resulting in increased importation of cereals (1983 and 1984) to levels beyond 160,000 tonnes. Also experienced during such recessions are significant reductions in wild plants and wildlife availability on which remote area dwellers largely rely, as well as increased cattle mortality rates. Such food shortages usually result in increased numbers of undernourished children.

To offset these drought hazards the Government introduced drought relief programmes. Appeals are usually made to the outside world and FAO for free measures to counter severe food shortages. Received food stores are usually delivered free to feed young children, schools, old age and lactating mothers, etc. Food for work programmes are organised for the able-bodied persons to receive the food while contributing to national development programmes. Since droughts have compounded difficulties in the promotion of arable agriculture,

Government also issues free seed, and financial assistance for programmes such as de-stumping, provision of water, tractor hire, etc.

The implication of such relief programmes is that diversion of finance and manpower to relief measures tends to hold back progress in other development projects.

National Food Strategy (NFS):[1]

The NFS is another major government policy strategy that has laid the foundation for drought recovery and longterm increases in food production at household and national levels. The NFS developed "*appropriate medium and longterm responses to the situation of growing food deficiencies and deteriorating nutritional status that had developed in the context of drought*". The major areas of concern of NFS are:

- the construction of an adequate data base at both national and household levels to support planning for food security and the reduction of dependence on outside food supplies;

- priority for the design and implementation of effective support and incentive policies for smallholder/subsistence farmers and for investment in the limited areas of the country that may prove suitable for irrigated or large-scale commercial crop production;

- the strengthening of nutrition-oriented programmes, ranging from information gathering on the causes and incidence of malnutrition among various groups, educational activities, improved availability of consumer goods and promotion of locally available foods, to measures for the supplementation of rural incomes generally, a high proportion of which is spent on food purchases;

- medium term contingency planning for drought preparedness, relief and recovery measures.

The NFS has therefore direct relevance to a number of national programmes/projects of which the most important are:

- The consolidation of the Department of Food Resources which ensures availability of food resources to mount any human relief programmes, processing and distribution of relief food and coordination of a large part of Government Labour Intensive Works Programme, not only as relief programmes but post-harvest measures as well;

- Investigation of Botswana's irrigation potential (for the sake of increasing food production) by the Ministry of Agriculture and Department of Water Affairs;

- Building up and maintenance of National Grain Strategic Reserves at levels sufficient to achieve about 3 months of import coverage in maize and sorghum to be drawn on in times of emergency;

- Post-drought recovery measures to assist arable farmers to rebuild productive assets in conjunction with the continuation of ARAP and a number of farming systems research and testing projects which can identify improvements in technology;

- Consolidation and strengthening of data collection and analysis in areas relevant to drought, nutrition and food security, nutritional surveillance and related research;

- Regular training of district officials, health, agriculture, education personnel in programmes such as relief planning, implementation, food management and distribution.

National Grain Strategic Reserve:

This is a policy move considered as far back as 1974 (but implemented in 1980) as a national safeguard against food shortages in times of drought, or other emergencies to stabilise prices and support government plans for increased agricultural production. The Government owns and controls the reserve

and Botswana Agricultural Marketing Board (BAMB) operates it. Food reserves and stores at strategic points based on population distribution and needs have so far been established throughout the country.

Reserves are therefore used under conditions of severe shortage of grain supplies which could not be received from commercial stocks or imports or when BAMB decides to market supplies of a given quantity when temporary shortages manifest or prices rise significantly.

The Reserve has support of the World Food Programme (WFP) which in 1980 donated 6000 tones of grain. Grain reserves have so far been increased from 6000 to 30,000 tones (by 1984) being the equivalent of three months imports. But severe droughts usually force draw downs on resources to levels below 1000 tonnes. But the Government still attempts to maintain the balance through a combination of purchase and donor contribution. The scheme contributes significantly to increasing Botswana's security of access to basic foods and ability to deal with short-term emergency situations whilst reducing the country's vulnerability to possible disruption in food prices.

Crop Forecasting and Early Warning System:[2]

Since 1979 Botswana maintains a crop forecasting and early warning system. This enables the Inter-Ministerial Drought Committee (IMDC) to monitor the onset of droughts, declare drought emergencies and to coordinate relief programmes. The IDMC therefore receives reports on rainfall, agriculture, food stocks purchases and sales from BAMB and on the nutritional status. It is through such data that the committee can assess the food situation and in liaison with the Department of Food Resources plan for sufficient food supplies and distribution to the affected people.

Wild Plants and Wildlife Utilisation:

Hunting and gathering which take place throughout the rural

areas make significant contributions to rural household food consumption particularly among the non-stockholders and remote area dwellers. For the past few years the Government has been studying various plants to establish degree of utilisation as food and cash crops. The evaluations are still going on. Regarding wildlife, the Government issues free hunting licences to remote area dwellers who live mainly by hunting and gathering. In this way food resources for the remote area dwellers are to some extent ensured.

The problem is that although both wildplants and wildlife are sources of food and incomes to a number of the rural poor; hunting and gathering is not yet considered a form of land use and as such the hunting zone is often disrupted by projects which do not take cognisance of this important activity.

Pricing Policies:

Regarding food crops, before the establishment of the BAMB, all saleable grain was purchased by private traders who had little regard for the economic interests of producers and consumers. Grain would be bought cheaply, exported to South Africa and re-imported in times of need and retailed at exhorbitant prices. The BAMB guarantees prices and acts as government instrument in crop pricing. It guarantees a market for producers with immediate cash payment. To enhance food production BAMB encourages guaranteed minimum producer prices at the start of the ploughing season and this influences decision-making by producers.

To enhance production for local consumption and export BAMB maintains two price policies for oilseeds, pulses and other grains. Since the domestic market for oilseeds and pulses is small and lacks processing facilities, these food stocks are exported and produces are paid the export price less marketing costs. For other food grains, producers are paid an equivalent of import price plus a transport differential, thus making BAMB pay prices higher than those prevailing in South Africa. This creates an incentive to producers to sell their grain locally and thus ensure that all grain produced locally is stored locally and

re-distributed in times of need. BAMB also keeps sorghum at premium over maize to encourage production as a drought resistant crop and major staple food crop. For producers to sell produce within easy reach BAMB maintains 14 depots and agencies in towns and major villages. This reduces transport costs, accordingly.

Like BAMB the Botswana Meat Commission (BMC) maintains guaranteed prices for producers. It pays prices equivalent to export prices based mostly on those prevailing in the EEC market. Such efforts lead to improvements in beef quality and increased offtake. But the system is still affected by high transport costs but may be alleviated by the establishment of the Maun and Francistown abbatoirs. The BMC prices have also led to a tendency of cattle producers to keep on increasing their herds, a trend which results in overstocking, overgrazing, and land use degradation.

Finally, Government maintains a favourable pricing policy in basic commodities so as to enhance food production. Commodities such as veterinary requisites, stockfeeds, seeds/fertilisers, implements and farm equipment are retailed at reasonable prices or sometimes even subsidised. There are in addition various institutions and support services associated with food production. These institutions play major roles in areas of providing markets, capital, inputs credit, etc., to farmers. Also of importance is the policy towards manpower training in various fields and the base ministry, departments, research stations and extension support all aimed at increasing food production.

Evidence of conflicts in the beef industry exist. This was promoted by beef prices hiked to international levels. This trend on the supply side stimulated growth in beef production with high marketed surpluses and as such increased real producer incomes and created employment opportunities particularly in the tertiary industry. The stimuli at the same time led to increased cattle population resulting in range deterioration. On the demand side (for beef) high prices decrease the purchasing power of the consumers particularly

that of the rural poor and the urban workers. Many consumers do not therefore get adequate access to beef. Because of the lucrative nature of the cattle industry the social system of lending out cattle for draftpower and milking purposes to the non-cattle holders is now dying at a very fast rate.

Regarding food grain, low prices were at first emphasised. This means buying the farmers produce at very low prices and selling at such. The dilemma here is that both the producers and the consumers react to low prices in opposite directions. To consumers such low prices offer scope for greater food intake, wide variety of stuffs, high quality of diet and occasional increases of basic commodities. This also promotes consumption patterns of locally produced food grains. To the producers such low prices somehow kill their production incentives, reduce their real incomes vis-a-vis prices of essential inputs most of which are imported. Farmers are therefore reluctant to sell to the local Marketing Board in preference to South African markets which bring their grain much higher prices. If sold to SA markets the grain would eventually be re-imported this time at prices very much above the consumers' purchasing power.

Once producer prices were raised over and above prices obtaining in SA the trend induced supply responses, raised producers' real incomes and efforts to expand production. The problem is that the majority of the rural consumers now find the prices for locally produced staple food rather too high. This trend has a negative impact on peoples' nutritional values.

The general perspective regarding food consumption patterns is that Botswana's locally produced foodstuffs, meat, grain legumes, citrus, vegetables, etc., are found to be rather too expensive when compared to similar products from SA markets. People's consumption patterns have thus changed towards imported foodstuffs from SA, a member of the Customs Union. This trend is also aggravated by the appreciation of the value of the Botswana Pula currency over and above the SA Rand which induces wholesalers and retailers to take advantage of and purchase goods more cheaply from SA and accrue high

profit margins that way. There is therefore too much dependency on imported foodstuffs particularly by the urban workers who could be promoting the consumption of locally produced foodstuffs. For instance, whereas sorghum is the traditional staple food and a drought resistant crop, the consumption of this cereal is still superceded by that of maize and related products which are easily and cheaply available in whatever ready-made form from the SA maize millers. Such imported products are not just cheap or in various processed forms but of high quality as well. A good number of sorghum mills are operating in the country but consumers find the prices of locally processed sorghum meal rather too high when compared to imported maize products.

The unchecked trend of wholesalers and retailers to freely import cheap foodstuffs from another Customs Union member is rather disruptive to the supply and distribution of local food products. The system imposes heavy strains on the traditional food production capacity.

Conclusions:

Conclusions drawn from Botswana experiences regarding the food security situation are that various efforts were taken over the past 20 years or so to improve agricultural productive capacity and overcome the problems of local food shortages resulting in hunger and a malnourished population. In spite of these efforts the goal of self-sufficiency in food production is not yet accomplished in Botswana. This is a deficiency that characterises most of the countries in the SADCC region. The main and common problems still faced by Botswana (and other countries in the region) are those which include:

- persistent droughts, this affects mostly arable farming most of which is dependent upon rainfed production;

- weak infrastructure which includes poor government policies which do not properly address the problem of food security and also fail to provide the necessary

institutions to deal with food issues;

- poor or lack of appropriate technology which includes draftpower, improved seeds and essential inputs and difficulties of adopting scientific extension programmes to local farmers needs;

- lack of meaningful employment opportunities in the agro-rural sector which often results in out-migration by able-bodied males seeking wage employment elsewhere.

Failure to produce enough food particularly food grain often leads to situations characteristic of:

- severe food shortages;

- food deficits are often met from imports including food aid;

- imported foodstuffs change consumption and dietary patterns in favour of imports irrespective of their nutritional values or appropriateness as staple foods.

These food imports and aid tendency are dis-incentives to local production. In some cases imported food commodities are rather too expensive and as such the majority of the households do not get adequate access to food.

Generally during times of shortages the most vulnerable groups to food shortages are children, expectant and lactating mothers, the rural and urban poor, remote area dwellers, the unemployed, underemployed, the old age, etc. These are the very groups which normally are considered for food aid and other social services and means of livelihood. For instance by 1983, 220,000 rural vulnerable groups received drought rations, 12,000 vulnerable people received non-drought rations, and 166,000 rural primary school children and 21,000 urban children received rations on school days. For 1987 it is estimated that 250,000 primary school children, 73,000 expectant women and nursing mothers, 180,000 children between six months and five

years of age and 7,000 tuberculosis out-patients will be receiving rations under the food programme as vulnerable beneficiaries.[3]

It is further concluded that if the present strategies for food self-sufficiency and food security are not rigorously changed, it will take Botswana a long time to solve the food problem. These strategies are rather too mild and are short-term measures that cannot accomplish long-term objectives. There is therefore, the need for consideration of new strategies for adoption so as to make food available to the entire population.

NOTES

1. Ministry of Finance and Development Planning - Report on National Food Strategy. Gaborone, 1985.

2. FAO: Technical Cooperation Programme: Preparation of Project Proposals for the Establishment of an Early Warning System for Regional Food Security (SADCC countries). 1982.

3. Botswana Daily News. No. 38. 25.2.1987.

FOOD SECURITY IN LESOTHO: THE CHALLENGE AND THE STRATEGY

Atnafu Tola

Introduction

In recent years there has been a widening gap in Lesotho between domestic food production on the one hand, and both demand and requirement for food on the other. Since the 1970s there has been a consistent downward trend in the production of cereal grains and the hectarage devoted to the cultivation of these, with a corresponding increase in the import of food both commercial and donated. This is the direct result of government inaction in stimulating peasant farmers to grow more food. The offshoot is a particular scenario of increasingly falling per capita food production and the lack of strategic food reserves against the worst case of drought or other natural disasters. Unless generous and prompt payment, rapid expansion of collection and storage facilities, credit and agricultural advice are made readily available to peasant farmers, the food situation will reach crisis proportions in the foreseeable future.

The Challenge

At any one time, the total food available for the Basotho nation is the sum total of domestic production, commercial imports and food aid. When the nation attains food self-sufficiency, commercial imports and food aid will be eliminated.

Despite several years of food self-sufficiency programmes, Lesotho is still a net importer of food.

Although this trend has been increasing for some time, the situation has become serious since the early 1980s. The contribution of domestic production to total food supply has been decreasing at an alarming rate. In 1983/84, Lesotho met only 40% of its total food supply from domestic production. The largest amount of food, 46 percent, came from commercial imports. 14 percent was covered by food aid, mainly coming from Canada, Belgium, China, Germany, Italy, U.S.A. and the EEC. The U.S.A. is the largest donor, accounting for about 60% of the food aid to Lesotho with the EEC contributing 36%.

Commercial imports of major food items rose sharply to fill the gap of falling domestic production. In 1983/84, there was a net increase of 21,000 tonnes over 1982/83. What is most startling is that the total food supply to the society in 1982/83 and 1983/84 was 183,000 and 102,000 tonnes less than 1977/78 and 1978/79, respectively. The relatively favourable trend in domestic production established during the second part of the 1970s has been wiped out in the early part of the 1980s.

Between the mid and late 1970s, Lesotho was able to provide 50 to 60% of its total food requirements. A gradual but general decline started to emerge in the late 1970s and the rest of the 1980s. As a result, commercial imports and food aid increased by 32% and 180% respectively in the ten years form 1974 to 1984.

Commercial imports of food grain have been estimated at about M40 million out of a total bill of M110 million for all food and live animals imported in 1982. This represents 36% of the total imports of food.

In less than five years, that is, from 1978 to 1982, the value of commercial imports registered a dramatic increase of 45%. Taking all commodity imports into account, commercial imports of food represent 20% in 1982. This, of course, negatively affects the balance of payments of Lesotho with exports valued

at M40 million in 1982.

Even though most debt-ridden African countries spend something like 20 to 50% of their foreign exchange earnings in debt-servicing, thereby enormously reducing their ability to finance imports for economic development, the case of Lesotho is more alarming than other African countries because the country spends three times more than the value of exports on commercial food imports. Lesotho's gross external liabilities were US$128 million in 1984. Again, total long-term debt services as a percentage of export of goods and services was 51 in 1984.

An Increasing Menace: Population Growth and Diminishing Domestic Production

The relationship between population and food supplies has been subject to major economic debate for the last 200 years. Even though agriculture contributed a low 18% of Lesotho's GNP in 1982, nevertheless, about 90% of the population were engaged in one form of agriculture or another.

Agriculture is still traditional and a high rate of population growth prevails. In such a situation it is possible to uphold the pessimistic Malthusian population projection, where provision, it is argued, should be made to increase food supplies so that seriously affected households in particular are aided and that the economic lot of the broad masses of the population is improved.

Between 1970 and 1982 Lesotho had an average annual growth of population of about 2.4%. The projection for 1980 to 2000 is about 2.8%. In other words, by the year 1990, Lesotho will have a population of 2 million. This represents a 100% increase over 1982.

Since 1977/78 there has been a reverse process both in total food supplies and domestic production. Of particular importance is the "nose dive" of domestic production which

failed to match the corresponding steady increases in population. As a result almost half of the population had been declared critically affected in 1984. Even though the population has been growing at an average annual rate of 2.4% in the 1970s and 2.8% in the 1980s, total food supply did not keep pace with population growth in the early part of the 1980s. In 1983/84 the population consumed 40% food than in 1977/78 against a net 8% increase in population.

Food Security

Food security refers to the ability of food deficit countries, or regions or households within these countries, to meet target levels of consumption on a yearly basis. What constitutes target consumption levels and ability to maintain consumption are two central issues of a country's food policy.

It should, however, be made clear right from the start, the difference between national food security and national food strategy.

According to C.P. Timmer, a national food strategy is comprised of four basic objectives:

a) efficient growth in the food and agricultural sector;

b) improved income distribution, primarily through employment creation;

c) satisfactory nutritional status for the entire population through provision of a minimum-subsistence floor for basic needs;

d) adequate food security to ensure against bad harvests, natural disasters, or uncertain world food supplies.[1]

From the above it is rather difficult to draw a line of demarcation between the two systems, except that the subordination of food security to food strategy may be

indicated. For clarity, national food strategy can be described as a long-term process whose positive outcome depends not only on increased growth of the sectors of food and agriculture, but also on the economy as a whole with special reference to the accelerated growth of the secondary sector, that is gainful employment and income distribution. On the other hand, food security is a conscious and deliberate act on the part of the state to increase food stocks, foreign exchange reserves and to intensify national and international mobilisation to counter the misfortunes of agriculture, for example, bad harvest, natural disaster, social and political turmoil, aided by the day-to-day activities of an early warning system.

Thus, food security cannot be seen in isolation from food strategy. In this respect, because it is believed that objectives *(a)* and *(b)* of a national food strategy are the pillars of the entire system of adequate food supply to the Basotho nation, an attempt has been made to devise a strategy for the development of the rural sector specific to the conditions of Lesotho.

In considering food security, the primary task for a country is to stipulate minimum recommended levels of nutrition consumption for households during times of food shortages. Due to income inequalities or low level of economic development, food supply instability will be felt severely by the poor and by those suffering from chronic malnutrition caused by persistent poverty.

Distinction should be made, however, between the former and the latter groups, and so the solutions to the latter's problems call for provisions outside food security. As a marginal remark, it should be stressed, however, that changes in income distribution in favour of the mass of the population may have some desirable results.

In Lesotho, by and large, two groups of people are found. The first, about 50% of the population, who live on "Emergency Food Aid" can be classified as rural. The underlying and immediate causes leading to famine, food shortages and

malnutrition, can be attributed to economic underdevelopment and a low level of income generated by agricultural activities. The second, a segment of the population is found in the 14 urban designated centres, where unemployment and underemployment is rampant.

Insecure supplies of food and the general problems associated with food security are undoubtedly the product of the misfortune of agriculture. In Lesotho, in the past decades the country has suffered from periodic drought and shortages of rainfall for crop production. Drought has been shown to occur in nine to ten year cycles for the nation as a whole, and in two to three year cycles for particular areas. In other countries, and Mozambique is a good example, natural disasters and political upheavals help to reduce national output and often disrupt established market channels. The most common phenomenon in Africa is the general tendency of domestic agricultural output falling short of population growth.

Another area of food security relevant to Lesotho will take into account the immediate micro-economic impact of reduced domestic production and the corresponding price rises. The unprecedented rural-urban drift coupled with a high rate of unemployment, produces urban destitutes. There is often a considerable danger of these displaced people taking themselves to the streets unless their problems are addressed within the provisions of food security. There is also a growing body of literature in Lesotho which characterises its rural landlessness as the worst in Africa. This means that in addition to the urban destitute, about 20% of the rural population are a special case for food security.

The second aspect of food security relates to the opposite circumstances of a food deficit country. It assumes that a country has attained the ability to produce all or even more than its food requirements but large segments of the population still have insecure supplies of food. The state is duty bound to meet the nutritional needs. The situation is not typical of

most African countries south of the Sahara. For purpose of clarity, the U.S.A. is taken as a classical example, where over a million people are considered food-deficient by American standards.

Aspect three of food security refers to societies where there is specialisation in agricultural production, for example in wheat, or cotton, or bananas, or pineapples or sugarcane. Fluctuations in production or reduced prices for their produce, or rising prices for non-food products inevitably affect farmers' consumption of certain foods due to reduced income. These farmers are then objects of food security.

Provisions of Food Security

Two broad approaches will be considered.

Domestic Food Reserve

The issue of what is the best form of food security is difficult to resolve and covers considerations of whether a reserve should be international, regional or national. Should it consist of food or be a monetary reserve? Should it simply be a food insurance scheme? These considerations have been debated in international circles after the food crisis of 1973/74.

Umalele and Candler suggested three major components of a domestic food reserve at any time:

a) an Official "National Food Reserve";

b) stocks held by the official marketing organisation for its routine purchase and sale activities;

c) stocks held by the private sector, predominantly individual farmers.[2]

National Food Reserve

The recurrent food shortages facing Lesotho result from a variety of factors but mainly from the low level of economic development and poor growth of food output together with year-to-year short-falls in production on account of unfavourable weather conditions.

Since more than 50% of the population are critically affected in any calendar year, provisions of food stocks and storage capacity are undertaken. These include *Food for Work, Primary School Feeding, Post Primary Education and Institutional Feeding* programmes and the *Mountain Emergency Food Reserves*. Stock as at 30th June, 1984, amounted to 7,385 stocks units. In addition to these stocks, a strategic reserve of wheat is maintained by Lesotho Flour Mills on behalf of the government. In 1984, this reserve amounted to 7000 tonnes. Strategic reserve accounted for a bare 2% of total food available in 1983/84, or approximately a week's supply of food for the entire nation.

Buffer Stock Price Stabilisation

Most Southern African countries use Marketing Boards, which are parastatal organisations, partly as a food security instrument but primarily as a bufferstock price stabilisation mechanism. The exercise is simple. Buffer-stocks are built up to raise market prices in periods of overabundant supplies, and run down to lower prices when current supplies are less than normal. The wisdom of this state-sponsored activity is very questionable. First, there is no food surplus to start with and second, even if there is surplus to stock, it is not possible to stabilise prices, and third, the system runs contrary to African governments' twin goals of expanding agricultural output on the one hand and the transfer of surplus from agriculture to the remainder of the economy on the other.

Stock held by the Private Sector

The private sector contribution to food security has always been underestimated by African governments. It plays an important role during times of food shortages provided micro-economic incentives are available, in other words, prices are utilised to coax farmers to release extra food reserve at their disposal. Given the fact that rural food consumption patterns are substantially more diverse than homogenous urban consumption, and involves consumption of several different crops, price increases of certain food items consumed by the rural people may temporarily alleviate the crises of food shortages in urban areas. But, if the food crisis has completely depleted rural individual stocks the diversity of rural consumption may aggravate problems of ensuring rural food security through official channels. The rural economy is often inaccessible and government bureaucracy and political considerations are urban-biased. But, above all, food coming in the form of aid does not take into account food consumed in rural areas. So, under the regime of serious food shortages, the rural poor are most vulnerable.

Monetary Reserve

Whether the Lesotho government should opt for holding assets in the form of either food stocks, or monetary instruments, such as foreign exchange reserves or cash balances to purchase food when the need arises, depends on the state of the balance of payments. Assuming surpluses both in the current and capital accounts, rational use of scarce resources dictates a restricted use of foreign exchange.

National food security can only be achieved at a lower cost by varying the amount of imports while maintaining a relatively small buffer stock. In other words, maximum caution is required to hold liquid assets in the form of foreign exchange reserves rather than in the form of food. Lesotho's gross international reserves were estimated at US$ 49 million in 1984. These reserves can only cover imports for six weeks.

Although Lesotho is a price taker, increased foreign exchange reserves will improve her bargaining position in the world market dominated by a handful of nations, namely the U.S.A., Canada, Argentina, Australia and the EEC countries. It is again advisable that households should hold cash rather than food. On the whole, there is no easy formula through which to achieve national food security unless the country embarks on a radical transformation of the agricultural sector.

National Early Warning System

The Global Information and Early Warning System was established on the recommendations of the 1973 FAO Conference and World Food Conference held in 1974. Its main objectives are to give advance warning of impending changes in world food conditions, and to enhance the capacity of government and international organisations to take prompt and appropriate action to deal with emerging food shortages. To achieve its objectives, the system is enjoined to monitor continuously world food supply/demand conditions, to identify countries or regions where acute food shortages and worsening nutritional conditions are imminent, and to assess possible emergency food requirements. In 1983, the system had 92 member countries.

The National Early Warning System is an offshoot of the Global Information and Early Warning System. It is the totality of arrangements, facilities and services, through which national administrative staff related to food security, carry out data collection and coordination in order to provide the required information on the food situation in a country.

The first National Early Warning System in Lesotho, which has been under consideration, may well be launched very soon under the auspices of the FAO. Prior to this, there have been several related activities, including three national nutrition planning conferences held in 1975, 1979 and 1981. The last conference dealt specifically with food security and nutrition surveillance with the sole aim of achieving self-reliance in food

by 1980.

At all these conferences, it was clearly stated that there has been a widening gap between domestic food production, on the one hand, and both demand and requirements on the other. It was also noted that there does exist in several parts of Lesotho isolated famine, serious malnutrition in children under five years of age, and a worsening situation of individual households in remote areas.

To alleviate the food crisis, the Lesotho Food and Nutrition Council (LNFC) was given the following tasks:

a) Food Security;

b) Surveillance and Early Warning;

c) Skill promotion at the village level.

Surveillance and Early Warning was intended to provide food and nutrition data for programme managers, planners and policy makers about cases of malnutrition and rehabilitation; to warn of impending drought and crop failure; to plan appropriate packages of food and nutrition interventions; and to monitor their implementation and impact in reducing malnutrition.

It is not the object of this paper to evaluate the activities of the institutions involved in related Early Warning Systems, but it is imperative to suggest important parts of the systems which have not been covered so far, so that the system can effectively render optimal services to Lesotho.

The Early Warning System is part and parcel of food security. It is designed to assess food shortages with particular reference to crop forecasting and the improvement of agricultural statistics. In broad terms, the main purpose of the system is to provide a clear signal, in advance, of an impending large-scale food shortage so that there is sufficient time in which to prevent its occurrence or at least to minimise its effects.

In practical terms the system provides individual governments, especially those vulnerable to crop failures, with early information which can improve the planning of national stock releases, of commercial food imports, of requests for food aid, and of requests for financial assistance, as well as initiating other national action to meet emergency situations; to pin-point provinces, districts, or segments of the population which are critically affected and thereby provide the necessary food delivery to avert famine.

Need for an Early Warning System

The earlier a government is alerted about threatening shortage, the greater is its capacity to take anticipatory steps, improve the preparedness for eventualities and take mitigating action. A forewarning of crop failures or possible disruption in the distribution system facilitates timely action with regard to importation, if necessary, and planned management of available food supplies. Even a few days or hours notice of such phenomena as floods, earth-tremors, typhoons or other natural disaster, enables a government, even a householder, in fact, to take precautionary measures to move food to safe places or to such areas where it may be most needed. It is therefore in the interest of Lesotho to establish new national monitoring and early warning systems, in addition to strengthening existing ones, so that timely signals are available about imminent food shortages.

The usefulness of the early warning system to Lesotho depends on the ability of the government to improve the existing data base. If information collected in the field about areas planted with food crops, about crop conditions, about prices and relevant data - that is, amongst other, weather conditions, pests, locusts, infection, estimated production, use of farm inputs, government procurement, and imports - is scanty and does not reach the users in time, the nation's food security will be seriously handicapped.

It is of paramount importance to narrow the information gap if

a national warning system is to fulfil its task of averting famine, hunger, and malnutrition in a developing society as Lesotho.

Increased Agricultural Productivity and Income

Agricultural development and the raising of levels of nutrition in Lesotho require increased agricultural production to meet the continually growing demands of an increasing population; to reduce reliance on overseas supplies; to provide reserves to cushion the effects of crop failure in bad seasons; to increase non-food agricultural production to meet the raw material needs of industries that will expand in the future and to provide productive employment in rural areas; and above all, to improve the quality of life in rural areas.

The required increase in farm output to meet these vitally needed economic goals represent a formidable challenge to Lesotho because the country lacks a strong economic base. The problem is compounded by the rapid growth of population, the general and rapid downward slide in agricultural productivity, and the total lack of mechanized high-income irrigated agriculture that could probably ease the burden on the balance of payments. Alternatively, the non-existence of an export-oriented industry and manufacturing sector has compounded the problem of the balance payments.

For Lesotho to break away from her dependency on imported food and be able to build a strong and viable economy capable of delivering the required food, it is in the national interest for a radical structural transformation to increase agricultural production to be carried out.

In general, increased agricultural production is closely associated with rural development. A World Bank sector policy paper defines rural development as:

> *a strategy designed to improve the economic and social life of a specific group of people - the rural*

poor. Its objectives encompass *improved productivity, increased employment and thus, higher incomes for larger groups, as well as minimum acceptable levels of food, shelter, education and health.*[3]

The focus of this part of the paper is on a rapid means of raising agricultural output and achieving widespread increases in farm income, a central requirement of rural development in Lesotho.

Historical evidence indicates that the first concern for the rural population is an increase in income. Purchasing power provides access to other benefits. In this respect, agricultural development effort in Lesotho should have income generation through increased productivity as a primary objective.[4]

A movement away from the present rut in agricultural production requires government action to do two things: firstly, there must be action to stimulate small farmers to grow more food in order to meet the needs of the rural households, and secondly, action to allow individual farmers to produce a surplus for sale so that the total output of a given rural locality exceeds total local requirements and permits sales in urban centres, other rural regions, or in international markets as has been shown to be successful in Zimbabwe.

It has become an established fact that subsistence peasants can be induced to increase their productivity provided four requisites are met. These requisites are:

1. **An Improved Farming System**

   This refers to a combination of materials and practices with an acceptably low level of risk, that is clearly more productive and profitable, than the one currently used which must be available to the farmer. Improvements in technology or production systems which promise significantly higher yields and incomes than previous

practices are essential to initiate change. Provisions must be made to show the farmer which combination of all the production factors and crops will give him a maximum net income, this being a measure of success for the farmer.

2. Instruction to Farmers

The farmer must be shown, on his own farm or nearby, how to put the practices into use, and he should understand why the new farming systems are better. This could be achieved only when there are skilled and dedicated extension workers.

Although classical economics has identified capital as the "missing factor" in developing economies, in Lesotho one could fairly accurately conclude that extension services and market outlets are the two missing factors which need to be addressed if this country is to make headway in the future. Given the complex nature of extension services, four important requisites extension agents should possess if they are to gain the confidence of farmers will now be considered:

Technological Competency

Extension workers must have a basic understanding of agricultural science and be able to conduct field experiments to test whether innovations would be feasible and profitable for the farmer. They must also be able to diagnose common problems and abnormalities and to prescribe proper solutions.

Economic Competence

They must be able to help farmers estimate, that is, calculate costs and benefits, the profitability of choices such as combinations on inputs, cropping or

animal husbandry practices, or alternative markets.

Farming Competency

The extension agent must be capable of performing all physical tasks that a farmer performs in producing crops or animals. As mechanisation advances, the agent must learn to operate and maintain various machines.

Communication Competency

The agent must be able to describe new advances to rural people and help them to try new ideas. The agent must be able to plan, prepare and present *appropriate information* for the relevant audiences and to obtain feedback from them. The relevant audiences include farmers, chiefs, credit agency personnel, input distributors, wholesalers, retailers, consumers and project personnel of bilateral and multilateral agencies.

3. Supply of Inputs

In order to shift subsistence farmers to a high-yield system, they must invariably use inputs. Due to the limited mobility of farmers, the required input, that is improved seeds, fertilizers, pesticides or other materials, will remain inaccessible unless outlets in a village in the area sell them. Farmers should be able to buy all the inputs they need at a single location, in the small amounts they need, and on credit if they need it. Prices on inputs must be such that these prices allow the profitable use of the inputs.

4. **Availability of Market**

Most agricultural commodities are bulky and some are also highly perishable. Consequently, there must be purchasing points near each farm to which the farmers can bring products and receive a fair price. Farmers must be convinced that they will get a price for their product which seems to be an incentive before they decide to invest in inputs, and that they can expect a higher rate of return than if they did not invest.

Recent researchers have concluded that the marketing of fresh vegetables in Lesotho is predominantly underdeveloped. There are no market outlets and the bargaining position of farmers is weak. Among other things, the lack of markets has contributed to low national production.

To remedy the situation, government investment in storage facilities, transport, markets and communication are essential factors which will allow farmers to sell they products easily. Government guaranteed prices are, however, the most effective incentive that will shift peasant farmers from subsistence to production for the market.

Conclusion

The central point discussed in this paper is how to feed a fast growing population, projected to reach 2 million by the year 1990 in a time of acute food shortages.

While food security in its entirety is a device intended to build strategic food and monetary reserves in anticipation of minor or major setbacks in food production, Lesotho has been living for decades with an infant national food security supported by massive commercial food imports and substantial amounts of food aid.

If the present trend in food production continues its downward slide, Lesotho may well face dire consequences unless the

country embarks on a radical structural transformation, namely, massive investment in agriculture so that the rural economy will be able to produce a marketable surplus.

As sanctions against South Africa start to gain momentum, Customs Union reserves, which are about 70% of total government receipts, and remittances received from miners will dwindle enormously. As a result, commercial imports of food, about 50% of the total food supply, will be hard hit. Subsequently, Lesotho will enter a period of extreme shortages of food.

In order to avert this pessimistic scenario, it is most urgent that scarce resource should be diverted to rural development, the best insurance policy for food security in Lesotho.

NOTES

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COOPERATIVE AGRICULTURAL DEVELOPMENT AND FOOD PRODUCTION IN LESOTHO

B. M. Swallow and B. Borris

Introduction

SADCC's Updated Food Security Strategy paper states that the two components of food security are:

> *food availability (through expanded production, stocks, commercial or other food trade, or through expanded aid) and the ability of all people to acquire that food once made available.*[1]

In Lesotho the food availability/accessibility issues must be addressed from two different perspectives: firstly, what are the options facing Lesotho in the event of a break-down in relations with South Africa given its dependence on that country for imports of food, agricultural inputs, and foreign exchange through migrant remittances? Secondly, what are the options for developing the agricultural sector to generate increased production and employment opportunities? The Government of Lesotho must develop contingency plans in the unlikely, but possible, event that it is thrown into a short-term food security crisis particularly during this uncertain phase of Southern African history. Ronsholt has recently outlined a number of options possible in such a crisis situation.[2] This paper addresses the long-term issues of agricultural development in Lesotho. In particular, it examines the issues of farmer cooperation and what role it may have in future

agricultural development efforts.

From the devastation left after the *Lifaqane* wars (1818-c.1824), Lesotho rapidly emerged as a major political and economic force under the guidance of Moshoeshoe I. Basotho rapidly increased their cultivation of the fertile lowland region and used the increased food supplies to meet the subsistence requirements of their growing population and to trade with neighbouring black nations and white settlers in what is now the Orange Free State. Demand for Lesotho produce heightened with the discovery of diamonds in the Orange Free State (1867) and later with the opening of the gold mines in the Transvaal (1885). Lesotho's food grain exports reached a maximum in the decade of 1910-20. After this time exports declined as (1) South Africa imposed trade restrictions; (2) increased supplies of imported and South African produce came on the market; (3) the Lesotho subsistence requirement expanded; (4) soil fertility gradually declined; (5) technology remained stagnant; and (6) more Basotho labour was siphoned into the South African workforce. By 1930 Lesotho was a net importer of maize.[3]

Since independence in 1966, food demand in Lesotho has continued to increase in response to growth in both population and per capita income (primarily migrant income). Far from keeping pace with this increasing demand, food production has actually declined since the late 1970s because of the decreased area planted and perhaps most importantly, persistent drought. Consequently, Lesotho has had to rely increasingly on food imports, most of which have been in the form of commercial imports from South Africa. Concern over the increasing dependence on South Africa is reflected in the recent policies of the government. The Food for Self Sufficiency Programme is one of the programmes focussed on expanding food grain production, while a number of government initiatives and donor projects have been focused on vegetable production.

Current Food Production in Lesotho

The five major food crops of Lesotho, in order of their

importance, are the staple food grains, maize, sorghum and wheat, and the major pulses, dry beans and peas. The major vegetable crops include cabbages, potatoes, tomatoes and onions, again in order of their importance. Recent production of the five major food crops is shown in Table 1. It should be noted that these figures are for total production and do not represent that available for consumption, adjustments must be made for harvest, transport and storage losses and the amounts used for seed, which together might amount to some 20 percent of production.[4]

Table 1: Lesotho Crop Production 1970/71 to 1984/85 (1000 tonnes)

Crop year	Maize	Sorghum	Wheat	Beans	Peas
1971/72	59.0	20.0	24.0	NA	NA
1972/73	70.0	43.0	36.0	NA	NA
1973/74	122.5	84.0	57.0	NA	NA
1974/75	70.3	37.4	45.3	13.4	5.8
1975/76	49.1	24.5	44.6	8.7	5.8
1976/77	125.9	62.3	61.4	20.9	7.0
1977/78	143.2	85.8	57.9	10.8	4.4
1978/79	124.9	69.0	33.6	8.4	6.9
1979/80	105.6	59.3	28.2	3.6	4.6
1980/81	105.7	47.7	17.0	3.5	3.2
1981/82	79.8	26.0	14.5	2.6	4.5
1982/83	76.2	30.7	14.8	1.6	3.4
1983/84	79.4	33.8	17.1	1.3	3.6
1984/85	92.4	54.8	18.4	2.5	3.3

Source: Lesotho Agricultural Situation Report, 1985 Edition.
NA indicates information not available.

Except for peas, production in the early 1980s was well below that of the late 1970s. Production declined steadily following the 1978/79 crop year until 1983/84 when a modest recovery

was reported. The 1984/85 crop year showed substantial gains in production owing to a break in the drought conditions of the previous six years and indications are that production was up again in the 1985/86 crop year.

Imports of food grains and pulses from both commercial and donor sources are reported in Table 2. While commercial imports of all products have remained relatively constant since 1977/78, total imports have increased, indicating an increased reliance on donated food.

Table 2: Lesotho Imports of Major Crops 1974/75 to 1983/84 (1000 tonnes)*

	Commercial imports				Total imports**			
Crop year	Maize	Sorghum	Wheat	Pulses	Maize	Sorghum	Wheat	Pulses
1974/75	62.7	3.1	32.0	0.3	74.5	3.1	33.8	0.9
1975/76	76.4	5.1	31.2	0.1	83.1	5.1	32.7	0.3
1976/77	86.5	5.8	32.8	0.6	96.3	5.8	33.9	0.8
1977/78	109.2	2.1	31.7	0.5	115.0	2.1	33.0	0.9
1978/79	122.4	1.9	35.7	0.6	130.7	1.9	42.6	1.6
1979/80	108.8	1.8	30.8	0.5	118.3	1.8	38.2	1.0
1980/81	121.9	1.4	31.5	0.2	136.8	1.4	37.9	0.9
1981/82	128.5	1.0	30.3	0.5	140.2	1.0	42.1	1.2
1982/83	107.4	1.7	23.9	0.5	116.6	1.7	44.5	1.6
1983/84	117.5	3.3	22.0	0.6	126.6	3.3	48.6	1.7

Source: Lesotho Agricultural Situation Report, 1985 Edition.[5]

* All figures in whole grain equivalent.

** Includes donated plus total commercial imports.

Grain and pulse donations and self-sufficiency percentages are shown in Table 3. The self-sufficiency percentages are calculated by dividing domestic production by the total imports plus domestic production. This procedure is appropriate for grains as there are virtually no grain exports. However, this

calculation is inappropriate for peas and beans as Lesotho has been a net exporter of these pulses. Donations of maize were 8.1 percent of total supply in 1974/74; 2.2 percent in 1977/78; 6.1 percent in 1980/81; and 4.4 percent in 1983/84. Since 1980/81, donations of wheat and pulses have increased substantially. There have been no donations of sorghum. Percent self-sufficiency in the 1980s is considerably lower than in the late 1970s.

Table 3: Lesotho Percent Donated and Percent Self-sufficiency for Five Major Crops, 1974/75 to 1983/84

	Percent donated*			Percent self sufficiency**		
Crop year	Maize	Wheat	Pulses	Maize	Sorghum	Wheat
1974/75	8.1	1.4	3.0	48.5	91.0	66.0
1975/76	5.1	1.9	1.0	37.2	91.0	57.9
1976/77	4.4	1.2	0.7	56.6	91.5	54.7
1977/78	2.2	1.4	2.5	55.5	97.7	60.1
1978/79	3.2	9.1	5.9	49.0	97.3	44.3
1979/80	4.2	11.1	5.5	47.2	94.0	32.8
1980/81	6.1	11.7	9.2	48.1	90.0	27.6
1981/82	5.3	20.8#	8.4	38.6	92.2	24.3
1982/83	4.8	34.7#	19.6	39.5	94.8	18.5
1983/84	4.4	40.5#	16.4	38.5	83.8	26.0

Source: Lesotho Agricultural Situation Report, 1985 Edition.

* No sorghum was donated during this period.

** Total production divided by total production plus total imports.

\# Includes donated whole wheat sold through commercial channels.

Fresh vegetables consumed in Lesotho are produced in a variety of situations; home gardens, communal gardens, private commercial farms (with or without project or donor support),

institutions, state farms, donor assisted projects, and South African farms. Data on Table 4 indicate the degree of reliance on South African imported produce (56.6 percent), and the relative importance of home gardens, 21.8 percent, compared to private commercial producers, 9.3 percent, in meeting total demand. Despite the large donor effort in production projects and state farms, they supply only 8.4 percent of consumption. Over 2200 households are involved in communal gardens, but together these produce only 2.4 percent of total consumption.

Table 4: Lesotho Fresh Vegetable Supply-Disposition, 1985

Item	Tonnes	Percent of total consumption
Consumption	48,974	100.0
Project production	2,718	5.5
Private commercial production	4,551	9.3
Communal garden production	1,158	2.4
Imports	27,722	56.6
Home garden production	10,662	21.8
State farm production	1,414	2.9

Source: Swallow and Mpemi 1986.[6]

The Agricultural Production Environment in Lesotho

In this situation of high dependence on food imports, the Government and its donor agencies have taken two main approaches to the problem of increasing domestic food production in the two decades since independence. The first has been to stimulate increased production under irrigation; the second to stimulate increased production under dryland conditions. Most of the development projects have been area-based and have centred around large-scale cooperative development. The experience of those projects will be reviewed in the next section. Before exploring cooperative

development, however, it is important to review two aspects of Lesotho agriculture: (1) the land tenure system and (2) the composition of the labour force.

The Land Tenure System

Under the traditional land tenure system, the land of Lesotho is held in trust for the people by the King. The King then assigns the responsibility for distributing land-use rights to chiefs. Under this rule, the chief of each village allocates usufruct land rights to the male villagers, provided they meet certain criteria: they must be married, pay taxes and respect the authority of both the local chief and the King.[7] Through this process, a married woman also gains access to land, although the usufruct rights actually belong to her husband. Once a man meets all of the above criteria, he is assigned three fields, although all three are not generally allocated at once and are, most frequently, not contiguous.

As long as the man crops his fields, he can use them throughout his entire adult life. In the event of his death, his widow is allowed to remain on the land. If the wife is dead, the lands revert back to the village chief to be allocated as he sees fit. There are no inheritance laws.

It was thought that the traditional land tenure system would bring equality, since every male household head has a right to three parcels of land. It has been shown, however, that land distribution is not as equal as once perceived (Table 5). Not only does the top 25 percent of the landholding population hold over half of the land, but the per capita holdings of these land-rich households are over three times that of the households in the second quartile. While these statistics are dated, there is no reason to believe that this situation has improved in recent years.

Table 5: Distribution of Land Among Farm Households in Lesotho, 1970.

Farm household group	Percentage of land	Mean holding size (ha.)	Mean family size (#)	Mean holding (ha.)
Top quartile	52	4.4	6.0	0.73
Third quartile	25	1.7	5.5	0.31
Second quartile	16	1.2	4.9	0.24
Bottom quartile	7	0.6	4.8	0.13

Source: World Bank (1981), Lesotho Agricultural Sector Review. Volume II: Annexes. World Bank. Rome, Italy.

Labour

The amount and quality of yearly and seasonal labour available in Lesotho is largely determined by the number of Basotho working in South Africa. Approximately 60 percent of Lesotho's male labour force between the ages of 18 and 60 is presently employed in South Africa, leaving the *de facto* population of work-age Basotho to be 71 percent female.

Migration extracts a very large number of the physically able males, leaving a population of women, children and disabled or older men to carry out the home and agricultural activities. The impact of this labour loss for agriculture is significant. Approximately 130,000 farms have no work-age male labourer present for crop farming.

Cooperative Agricultural Development in Lesotho

Throughout the 1970s and into the 1980s, most agricultural development programmes in Lesotho stressed the importance of cooperation in agricultural production. Government agents and donor experts sought to exploit the tradition among Basotho

farmers to share resources in agricultural production. This traditional sharing was seen as a solid foundation on which to build larger share production units. Much has been made of the potential economies of size in both production and marketing. By farming together on consolidated land blocks, it has been thought that Basotho could overcome the constraints imposed by the lack of resources and small fragmented landholdings. In this section the traditions of cooperation in agricultural production are first described, then the experiences with cooperative irrigation and dryland production schemes examined.

Traditional Agricultural Cooperation

Traditional arrangements of agricultural cooperation revolve around four important resources for agricultural production; land, labour, seed and draught-power (mechanical or animal). *Lemisana* is an arrangement where households, usually male members of households, share draught-power in ploughing. Individual households will contribute animals, equipment and labour to a common ploughing team which will then move from field to field. *Matsema* are work companies, primarily composed of women from neighbouring households, who perform agricultural operations -- primarily weeding and harvesting -- on each other's fields in return for food, drink, a small share of the harvest, or a small cash payment. *Seahlolo*, (share-cropping), is generally a relationship between a labour and draught poor landholder cooperating with a farmer who has surpluses of these resources. The landholder contribues his land, often some food, and half of the weeding and harvesting labour. The other partner in the sharecropping arrangement will supply the seed, the labour and draught required to plant the crop, and half the weeding and harvesting labour. The crop sharing relationship is agreed before planting, often a 50/50 split, though if the harvest is especially poor the landholder may receive the larger share.[8]

Sharecropping is common in Lesotho. The 1970 Agriculture Census found that in 1970, 18.3 percent of the households in

the lowlands, 10.4 percent of the households in the foothills, 9.7 percent of the households in the Senqu Valley, and 9.7 percent of the households in the mountains were involved in sharecropping. Gay found that approximately 50 percent of a sample of farming households in the Senqu Project area were willing to sharecrop.[9] Respondents cited lack of draught power and higher yields as the most common reasons for participating in sharecropping arrangements. "Few fields" and "too many problems" were the most common reasons for not sharecropping.

Robertson described considerable interactions between alternative types of agricultural cooperation, and found sharecropping to be a dynamic institution which has taken different forms over time depending on the agricultural and overall economic and social environment. According to Robertson the advantages of sharecropping is that it is flexible, it allows households to extend their agricultural resoures at a season's notice, it allows both landholders and non-landholders to spread their risks, and allows all households to fully utilize their available resources. In these aspects, it has many advantages over the more advanced productive arrangements such as fixed land rents and wage labour.[10]

Cooperation in Irrigated Crop Production

Interest in irrigated crop production pre-dates Lesotho's 1966 independence. While actual work in irrigated crop production has taken many directions since the early 1960s, interest has not waned. It is still believed that by carefully controlling water and properly timing the application of water and other inputs, Lesotho can move closer to self-sufficiency in food production. The purpose of this section is to briefly review the experience of irrigation development in Lesotho with particular attention paid to the issues of cooperative development.

Between 1965 and 1975, ten pilot projects were introduced in Lesotho. These schemes were originally designed as production

units for determining the optimal arrangements needed to develop viable irrigated agriculture systems. All of the pilot projects were located in the western perimeter. In the early 1970s, donors started coming into Lesotho to begin large, area-based projects. The five largest projects were: the Leribe Pilot Project; the Khomokhoana Project; the Senqu Agricultural Extension Project; the Thaba-Bosiu Project, and the Thaba-Tseka Mountain Development Project. The Senqu Project had the largest irrigation component of these area-based projects.

For the purposes of this paper it is not necessary to provide a detailed description of the historical development of past irrigation schemes. Interested readers are referred to Boris for more detail on the schemes.[11] In this section only a summary of the general experiences is given. Particular emphasis is paid to the issues of land consolidation and cooperative production.

Thaba-Phatsoa (Pilot Project)

Thaba-Phatsoa is the oldest and most dynamic scheme. It has undergone many significant changes since its inception. Work toward irrigated crop production began in 1962 with the two-year construction of a 15 acre foot dam. Irrigated production actually began in 1964 on 2.4 hectares. For reasons which are unclear, this original effort failed, although the scheme was revitalized in 1967. By 1974, 75 landholders were growing 65 hectares of maize, beans, wheat and potatoes under irrigation. In 1975, the severe economic problems at Thaba-Phatsoa were abruptly unmasked by an outside institution, the Agricultural Development Fund (ADF). Because of low pay-back rates the Agricultural Development Fund would not grant any more loans. At this point Thaba-Phatsoa, as well as most of the other irrigation schemes under the Crops and Pasture Division of the Ministry of Agriculture ... "*[had] ... reached a critical stage and ... [were] ... balanced on the point of complete failure*".

This economic crisis required the Ministry of Agriculture to take immediate action if the pilot projects were to be saved. In 1976, the Irrigation Research and Development Project (IRDP) took over Thaba-Phatsoa and the contracts made with the farmers were revised. However, the project continued to accumulate debts, no longer with the ADF, but rather with the input organizations, particularly Coop Lesotho (a parastatal input supply firm) and LEMA (a government equipment hire service). With operational conflicts and no additional funding, the IRDP collapsed in December 1977.

In 1978 the Taiwanese took over the Thaba-Phatsoa scheme. They concentrated their efforts and funds on high-value vegetable crops and changed the method of irrigation to small pumps which supplied water out of the existing concrete channels. While these donors provided some inputs and technical advice to the existing cooperative unit, they leased a number of fields from the landholders and went into production for themselves. It is also believed that the Taiwanese provided a truck for the transport of produce to Leribe, for their own use as well as others.

When the Taiwanese left Thaba-Phatsoa in the winter of 1983, there were 6-10 acres (2.4 hectares) of cabbage under irrigation, being worked by nine families. In August 1983, the People's Republic of China took over the management of the scheme. For the most part, this donor group inherited the small, cooperative group already at Thaba-Phatsoa; they are cultivating the same land area and dealing with the same people as the Taiwanese did. During the 1984/85 production year, 15 hectares of project area were producing vegetables under irrigation, with the remaining 61.4 hectares producing maize under dryland.

Many financial, technical and social problems existed on the scheme during its life. Low yields resulted in low, or negative returns, though in the first seven years members were receiving positive returns through subsidization from the scheme's depreciation fund.[12] Inadequate management and disorganized labour resulted in a number of technical problems

and labour shortages. Landholders were confused about both the overall and daily operations of the project, disheartened by some of the decisions, and generally dissatisfied with the organization. The system of profit sharing utilized for the first seven years, where member-families contributed labour equally but shared profits on a per hectare rather than a per family basis, did not work. This system might have been viable had original land-holdings been of equal or near-equal size, however, land contributions ranged from 0.2 to 1.8 hectares. Consequently, members received widely different returns. Furthermore, because of direct correlation between landholding size and profit share, there were constant disputes over tenurial rights. In short, participants felt like simple labourers -- asked to contribute toward the scheme as factory workers contribute to the building of an automobile. In theory, however, members controlled two factors of production, labour and land. In fact, they wanted this to be recognized and to become more active participants in the management of their lands.

Tsa-Kholo (Pilot Project)

This scheme, located in the southern district of Mafeteng, followed much the same development pattern as Thaba-Phatsoa. Irrigated cropping in this area began as a research endeavour in 1965; here, studies on the irrigated crop potential of duplex soils continued under the IRDP which folded in 1977. Through the work of the IRDP, 100 hectares were put under irrigation.

As with Thaba-Phatsoa, when the IRDP ended, the scheme was taken over by the Taiwanese, and provided with the same type of assistance. After the departure of the Taiwanese in 1983, the People's Republic of China came in to run the scheme, which today consists of three individual farmers growing cabbage on non-adjacent lands. Producers appear to be generating good returns, and the farmers and the Chinese are enthusiastic about the operation.

The technical and financial success of Tsa-Kholo clearly led to

its high acceptability by farmers. This scheme did not experience nearly the magnitude of social problems as Thaba-Phatsoa. While the method of employment during its first years was, as with Thaba-Phatsoa, generally considered unsatisfactory, with the village chief and development committees choosing labourers, there seemed to be a better relationship between the scheme members and the Chief. Unlike the chiefs on the other pilot projects, the Chief of Tsa-Kholo "*willingly wrote a letter to the effect that the committee should employ labour for his field and pay from his share, the balance only going to him*" (Report on the Request). This type of leadership tends to build morale and instigate cooperation.

Senqu River Agricultural Extension Project (Area-Based Project)

The Senqu Project started in September 1972 with funding from the UNDP. The FAO was the executing agency. The long-range objective of the project was to:

> *assist the Government of Lesotho to increase agricultural production above the largely subsistence level, and to create employment opportunities by promoting competitive earnings from agricultural production.*[13]

To achieve this long-range objective a long list of short-range activities were undertaken. These included a number of animal production, conservation, dry-land crop production, credit, input supply, marketing, and irrigation activities. The Ministry of Agriculture requested that the project establish consolidated farm blocks to demonstrate the advantages and examine some of the problems inherent in such organizations. In response to this mandate, six dryland and two irrigated farms were created. These served as core areas throughout the life of the project. By May 1976, three additional irrigated farm blocks had been added to the project and a total of 105 associated landholders were involved in irrigated production.[14] In May/June 1975, a mid-term review mission recommended a full project revision.

By August 1977, the decision had already been made to cancel the entire project.

Like Thaba-Phatsoa, the irrigation component of the Senqu Project was plagued by a series of problems which relatively quickly led to its demise. To a large extent, the bulk of the production operations were carried out by the project staff; cropping patterns were selected, credit operations were carried out, inputs ordered and distributed, mechanical operation executed, and the produce marketed. One hundred percent in-kind credit was supplied to the farmers for seasonal inputs. The farmers, however, never fully understood the credit system and often mistook the arrangement to be share-cropping. This led to confusion and disappointment as, after a full season of work, the project, at times, claimed all the produce in repayment for loans. Without a full understanding of the credit system the project had imposed, farmers felt the project had cheated them out of their share of the produce and/or profits. In contrast to how the system was outlined, bills for inputs were not given to the farmers until, or after, harvest. At no time during the season did participants have a clear idea of how much they owed the project. As the project marketed the produce, many times the participants saw the efforts of their labour carted away while they received nothing, or very little, from the sale. Also, thinking their arrangement to be share-cropping, the farmers felt cheated. They could not understand if 400 bags of wheat had been produced, why they were not given 200 bags. They were further shocked to find out that, often, instead of receiving profits or produce, they were handed a bill stating how much additional money they owed the project.

Problems of the lack of farmer understanding and participating in the project may have been overcome if the project had been able to generate good returns to the farmers. However, low and often negative returns, destroyed any chance for the project to overcome these problems. Low returns resulted from low yields, inappropriate crop mixes, and farmer attitudes. Yields were low for a number of reasons. The weather throughout the life of the project was unpredictable and

destructive. Also, the crops were generally underwatered. After several seasons of low yields due largely to underwatering, labourers had to be hired to move the irrigation pipes.[15] The problem of low quality labour was felt acutely on the irrigation blocks although the reason for it was national, rather than regional or project related. Since much of the labour in the area had been expatriated to the mines in South Africa, many of the people left were women or the old, weak, disabled or generally infirm. The people left to carry out the work could simply not move large-scale irrigation equipment or participate in other physically demanding tasks.

Crop mix was critical, although many factors were ignored in the decisions. The crop rotation patterns chosen were inappropriate for the weather. This was compounded by the fact that markets could not be found for some of the crops. Consequently, some of the produce went unsold.

The Senqu Project had, from the beginning, not examined how the farmers felt about cooperative farming. In an attempt to get production underway, farmers were pressured into participating in the irrigation schemes and joining the associations. Critical survey work was only carried out after the project had been deemed a failure. It is not that the farmers did not want to cooperate, but they were never really given the chance. Planning, for the most part, was done without farmer participation and operations were carried out largely by project staff. The farmer's feeling of non-participation in the cultivation of his own land, coupled with the ease of obtaining credit, led to a general feeling of apathy toward the project. With the project carrying out most of the technical operations on the schemes and supplying full credit, the farmers felt no obligation to pay back loans. In short, they were not internalizing any of the risk of production and felt no compulsion to do so.

Hololo Valley Project (Area-based project)

The Hololo Valley Project is located in the northern district of

Butha-Buthe. The project got underway in April 1978. It was proposed that the Irish Government would cover inputs for a ten year period and possibly longer, although major expenditures would be incurred in the first five years. The major emphasis of the project was, and still is, agricultural production, with particular attention given to irrigation. The project is continuing operations at this time.

When the Irish came to the Hololo Valley in 1978, a communal irrigation scheme was already operating with some financial support from the Unitarian Service Committee of Canada (USCC). This communal farm, now under the jurisdiction of the Hololo Valley Project, covers 9 hectares and involves 13 farmers. The farmers manage the scheme through a yearly-elected committee. The committee operates under a constitution and a set of by-laws.

They keep their own records, administer their own funds, and supervise their own work. Farmers work communally (being paid a wage of 2 Maloti per day out of common revenues), own crops communally and share costs and benefits equally irrespective of the size of each individual's landholding. The Hololo Valley Project provides technical advice, tractors, and other equipment.

In 1982, a second communal irrigation scheme involving 3 farmers on 2.2 hectares came into operation. The three farmers involved work communally only when laying irrigation pipes and applying insecticides. The Hololo Valley Project provides most of the technical inputs for production.

In 1983, another new scheme came into operation. It is referred to as "a horticultural unit" and involves 9 farmers on 8 hectares of land. Each of these nine farmers held rights to some portion of the land before the project and is paid M150 per annum for project use of the land, which is an estimate of the amount they would have realized had they planted the land to maize. Of the 8.1 hectares, 2.1 hectares is covered by a demonstration orchard, 1.0 hectares is covered by a fruit tree orchard and 4.3 hectares is employed in vegetable production.

It is hoped that in time the farmers will be in a position to take over and the scheme will have recovered the establishment costs. The scheme is being funded and managed totally by the Hololo Valley Project.

In addition to these three schemes, the project is supporting seven individual vegetable producers and 14 individual orchards. The individual vegetable plots cover 8.4 hectares and the orchards cover 6.8 hectares. The farms are all operated and managed by the owners. The source of labour is either family members or hired labour supervised by the individual owners. The Project put in the irrigation pumps and lines, and provides technical advice.

Two additional group production schemes were scheduled to go into production in 1986. These schemes were to cover an area of 14.2 hectares and involve a total of 22 farmers. Three individual schemes covering a total of 3.2 hectares were also scheduled to go into production in 1986 (The Hololo Valley Project Manager, personal interview, 1984).

The Hololo Valley Project appears to be the most successful of the irrigation projects initiated in Lesotho to date. Farmers have been able to generate reasonable returns from their labour. The daily wage payment seems to be a particular attraction on the 9 hectare communal scheme. The Project has been flexible in the type of arrangements it supports. Where the main purpose is demonstration -- on the Horticultural Unit -- it does not expect farmers to bear the risks. The major problems appear to be the lack of labour, possibly because the schemes involve many female-headed households, and the high degree of reliance on the project. Marketing also tends to be a problem. Contracts with buyers in Maseru failed, and now the project sells most of its produce at the project site to individual buyers.

Projects' Appraisal

Most of the projects focused their irrigation efforts on group production. Apparently technical and economic factors

prompted the implementation of relatively large-scale production units which, in Lesotho, implies multiple family organizations. From a technical standpoint, overhead sprinkler systems seem to offer the most reasonable way to control water. Once the decision has been made to install a sprinkler irrigation system, presumably there were economies of size to be gained in the purchase and use of relatively large pumps, pipes, and other irrigation components. When combined with the economies of size that can be achieved in the bulk purchase of inputs, land preparation, the use of mechanized equipment and management services, the argument from a technical/economic point of view would seem to dictate the creation of relatively large production units.

However, with no change in land tenure, the implementation of large production units required the consolidation of lands and collectivization of the labour effort. Yet, with many families, often with different goals, working on a single project, social/ organizational problems were bound to arise. When combined with financial and technical problems, these have often caused projects to fail.

Project Experience in Cooperative Dryland Production

Five large area-based projects undertaken during the 1970s attempted to introduce group production schemes and land consolidation for the development of dryland crop production: Leribe Pilot Project, Khomokhoana Project, Senqu River Agricultural Extension Project, Thaba-Bosiu Project, and the Thaba-Tseka Mountain Development Project. A second type of cooperative development project, the Cooperative Crop Production Programme (later Food Self Sufficiency Programme), took the form of sharecropping -- in this case the Government is the farmers' partner.

Besides the five consolidated blocks involved in irrigated crop production, the Senqu Project also initiated a total of nine consolidated blocks which focussed on cooperative dryland production. A total of 231 hectares of land and 158 associated

landholders were involved. These cooperative schemes were fraught with all of the technical, managerial and financial problems that existed in the irrigated blocks. These were compounded by very low, and often negative, returns to farmers.

One successful experience with dryland cooperative farming occurred in the Khomokhoana Project with potato production. Attractive returns resulted in an expansion of the area planted with potatoes from 0.4 hectares in 1971/72 to 66.8 hectares in 1975/76. In contrast to many of the other schemes, the farmers themselves were involved in every stage of the production and marketing process. The farmers devised a system of penalties for members who did not adhere to the labour schedule which they had worked out.[16] In the 1984/85 production year a total of 21 producers were producing potatoes on 34 hectares of land in what is now known as the Potato Growers' Association.

The Food for Self Sufficiency Programme

A radically different approach to countering the increasing reliance on food imports is the Government's programme of sharecropping with farmers. This programme was first launched in 1976/77 and was intended to demonstrate the agricultural potential of Lesotho on the occasion of the Tenth Year Independence Anniversary. The programme, named the Cooperative Crop Production Programme (CCPP), produced wheat on a total of 3114 hectares in the winter of 1977/78, and achieved average yields of 1152kg per hectare. Landholders in the selected areas took very little risk, provided a minimal amount of labour, and were guaranteed to receive a share of the production, regardless of the overall financial returns. The wheat programme covered 6386 hectares in 1977/78, and 4576 hectares in 1978/79.[17] Though farmers were generally satisfied with their returns from the programme, poor planning and management contributed to heavy financial losses and the programme was terminated in 1980 and replaced by the Food Self Sufficiency Programme (FSSP).

In July of 1980 the Government signed a five year agreement with Taiwan to support the FSSP. The objectives of the project were to:

(a) achieve self-sufficiency in maize and sorghum production within the period of five years;

(b) achieve full utilisation of Government-owned farm machinery and equipment; and

(c) initiate agricultural production based on village cooperatives.[18]

Yields of over 5,000 kilograms per hectare were predicted, and by expanding the total coverage of the project to 12,000 hectares, total production of maize and sorghum was expected to reach 60,000 tonnes by 1984/85.

The total area covered by the programme expanded from 10,439 hectares of maize, wheat and sorghum in 1980/81, to 33,940 hectares in 1983/84. Average yields were only a fraction of those predicted; average yields between 1980/81 and 1982/83 were 856 tonnes per hectare for wheat, 1339 for maize, and 698 for sorghum.[19] In the 1982/83 crop year 28,782 households were involved. The farmers' share of the revenue from the maize production was 52 percent in 1981/82, 37 percent in 1982/83 and 33 percent in 1983/84. Farmers received 25 percent of the revenue from the wheat production in 1980/81, 32 percent in 1981/82, 30 percent in 1982/83, and 30 percent in 1983/84.[20]

Production in the programme is highly mechanized. Tillage, planting and fertilisation was conducted with tractor-drawn equipment. Herbicides and insecticides were applied by aerial spraying. Farmers were only expected to weed or cultivate the crops, and provide assistance in harvesting.

The costs to the Government of this large scale programme have been enormous. Between 1980/81 and 1982/83 the Republic of China provided loans totalling US$6.6 million; the

Government of South Africa provided a line of credit of R2 million; three Barclays Bank loans were granted for a total of R3.6 million; a R4 million overdraft facility was provided by the Bank of Lesotho; and Government of Lesotho subventions for the programme were M0.775 million in 1980/81, M6.563 million in 1981/82, and M3.894 million in 1982/83. Total revenues generated from the programme's share of the crops were M0.095 million in 1980/81, M1.945 million in 1981/82 and M3.783 million in 1982/83.[20]

During 1984 several modifications in the FSSP were instituted to increase farmers' involvement, transfer responsibility for the Technical Operations Unit to the Ministry of Agriculture, and avoid duplication of services provided by other government institutions.[21] Indications are that these and other modifications have significantly improved the financial viability of the programme.

As it was organized prior to 1984, farmers had very little control over the use of the land which they committed to the FSSP. They were not involved in the production, planning, or in many of the actual farm operations. There were few opportunities for farmers to learn from the programme, apart from the benefits of large-scale, capital-intensive production practices. There is very little possibility that farmers could adopt such production practices themselves. On the positive side, national food crop production may have been increased under the programme; farmers received reasonable returns from their landholdings; and some cropland which may otherwise remain idle was kept in agricultural production.

CONCLUSION

From the beginning of the twentieth century Lesotho has evolved from a relatively large net exporter of food to today's situation where it is a large net importer. It is now highly dependent upon food aid imports and commercial imports from South Africa. While its self-sufficiency percentages are very low -- 40 percent for maize, 90 percent for sorghum, 30

percent for wheat, and 45 percent for vegetables -- its food security position is debatable. On one hand Lesotho derives many advantages from its relationship with South Africa: relatively stable and secure markets for imported produce, high income markets and good transportation infrastructure for exports, and employment opportunities in South African mines. On the other hand, Lesotho's economic and food security position is dominated by the will of a neighbour who is experiencing increasing political and economic turmoil. In the long-term Lesotho must take measures to promote sustained development of employment and income opportunities within its borders; in the short-term it must be prepared for the food security crisis which would result from a break-down in its South African employment, agricultural input and food supply links. In the short-term all of the options for national food security are very expensive, but can be clearly defined.[22] In the long-term the question must be asked; is self-sufficiency or a trading approach the best alternative for achieving long-term food security? No answer is given in this paper. Rather the paper has focussed on a particular approach to agricultural development -- cooperation in agricultural production.

The promotion of cooperation appears to have many advantages for the development of Lesotho's agricultural sector. Lesotho has a long history of agricultural cooperation and a high proportion of the households are currently involved in some form of cooperation. If individual households would consolidate their landholdings into consolidated blocks, economies of size in production, marketing and credit may be obtained making the total agricultural sector more productive and better able to compete with South African producers.[23] However, many past attempts to promote large production units have failed. Technical and financial problems have been important constraints, but the social/organizational problems may have also been important and have often been the most severely neglected.

Traditional cooperative arrangements have allowed individual households to exploit their key agricultural resources -- land,

labour, draught and seed -- to the maximum potential, while leaving the household unit intact as a separate entity. Sharecropping, the cooperative arrangement of longest duration, allows households to change the structure of their agricultural production from one season to the next in response to changes in their resource base. Households which contribute land to sharecropping arrangements are assured of receiving at least some return.

The irrigation and dryland production projects which have attempted to promote large-scale production through consolidated land blocks have not left individual households as separate entities, but have tried to form pools of land and labour for common production. In some cases, households were actually coerced into joining cooperative production units and had little input into the decision-making of the unit.

The social/organizational obstacles may be overcome if the projects are carefully planned, are technically feasible given the resources of the households, and provide reasonable and timely returns to the households involved. The bottom line of any productive enterprise is profitability, no project will be successful if it cannot generate returns for its members.

The spirit of cooperation is alive and well in Lesotho. Development efforts may be able to harness that spirit for the overall benefit of the nation. However, individual households will always form the basis of cooperatives, and their goals and constraints must be clearly taken into consideration.

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POLICY ISSUES FOR FOOD SECURITY IN ZAMBIA

Kapola Sipula

Introduction

The term Food Security has basically been defined similarly to the definition found in the World Bank Report "Poverty and Hunger".[1] The report defines the term as; "access by all people at all times to enough food for an active healthy life". The report adds that food security has two essential elements, namely; the availability of adequate food and the ability to acquire it. Individuals and households (or nations) must not only have access to reliable food supplies, but the food has to provide nutritionally adequate diets. The report also identifies two types of food insecurities. The first type (transitory food insecurity) is that of a temporary decline in access to adequate food due to a drop in production levels, household incomes or instability in food prices. The second type of food insecurity, chronic food insecurity, is that of a continuously inadequate diet caused by the inability to acquire food. The definitions described above will apply in this paper.

Food insecurity does not only arise due to lack of adequate food but also due to poor distribution and inadequate purchasing power of the people. There is an abundance of food world wide and countries with money to purchase on the world market are able to do so easily. It is, however, quite clear that millions of people go without adequate food. 730 million people are estimated to be on poor food diets in the

world.[2] The situation is so on both the international level, and the national levels. A good percentage of the national populations in sub-Sahara Africa and elsewhere do not have adequate food for an active life. A country may attain a rapid increase in food production and even reach food self-sufficiency but this does not guarantee food security for some households. In sub-Sahara Africa people had declining diets from 1970 to 1980. The declining diets were closely tied to declining per capita income growth. To a smaller extent food security disparities can also be found within a household. Children and women (especially lactating mothers) do not get adequate food requirements for an active life.

In Zambia, the problem of food security affects an estimated number of 3 million people. This paper will try to identify the groups of people threatened by food insecurity before assessing the national level situation. The paper will then discuss the causes of Zambia's food problems and thereafter provide some policy options for the country towards achieving Food Security.

The Zambian Food Security Situation

Zambia experiences both chronic and transitory food insecurity amongst its population. People who are normally affected by both temporary and chronic food shortages are mainly food producers, particularly subsistence and small scale farmers. In the urban areas the poor urban dwellers face basically chronic food insecurities. The causes of food insecurities between the two groups differ. The urban poor may face the problem due to a cut or drop in the income level or face high prices and thus have lower purchasing power. Small scale farmers (those who sell about 50% of their produce) who are net sellers face more problems other than lack of income or low purchasing power. The small scale farmers face also natural disasters and institutional problems. The causes of food insecurities will be discussed in detail later. Other groups that face mainly transitory food shortages in Zambia would include, refugees from Angola found in the North-western and Western provinces and from Mozambique found in Lusaka, and Eastern provinces.

Displaced groups, like those of Gwembe valley who were moved in order to give way to the Kariba dam and were again moved for a new agricultural project, are also victims of food insecurity. Chronic food insecurities in urban areas affect mostly those who are unemployed, the lowly paid workers in employment and in the informal sector people involved in petty trading. The construction industry has also a large number of people who work on temporary basis and such people face transitory food insecurities if not chronic food insecurities.

Zambia is a highly urbanised country with almost half of the population (48%) living in the urban areas. The labour force for the country was estimated at 3.3 million people in 1980 and about 350,000 people are employed in the formal sector leaving about a 30% unemployment rate. The rest of the people are in the informal sector. The majority of the unemployed people are young, most of whom are in the Lusaka and Copperbelt provinces. The Copperbelt has the largest number (23.5%) of the unemployed people.[3] The unemployed together with petty traders and poor wage earners are normally found living in peripheral areas of big cities in what are known as shanty compounds. This group of people has been reported to suffer from food intake inadequacies. A survey carried out in 1980 showed that 100 Kwacha per month was needed for the minimum nutritional requirements of six persons in a family. Twenty six percent of the urban families fell below such a modest estimate.[4] In fact an earlier survey done in 1974-75,[5] had found that 26% of the urban households (80% in case of rural households) had less than K50 per month (US $57.4) income. Within the urban areas, and among the poor the women and children get even less food. Malnutrition is very high among children aged five and below. Nationally at least 20-40% of the children die after their first week of life partially due to malnutrition. A 1970-71 survey [6] reported that 20% of children under five had second or third degree malnutrition and that the nutrition status had not been improving in the urban areas. The situation now should be worse considering what was reported in the Zambian Daily Mail [7] that malnutrition cases were on an increase even among the "well to do".

The people in the rural areas mostly affected by continuous food security problems are the subsistence and small holder farmers. Rural malnutrition exceeds urban malnutrition both in prevalence and in severity. The problem is worse in provinces that are least developed. Most of the malnutrition is a result of chronic food deficiencies and occasionally it may be due to drought. Other people affected by food insecurity are rural farm workers and the unemployed. In the rural areas, children and women are, like in urban areas, the worst affected people. In provinces like Northern and Luapula provinces due to the migration patterns, 25 to 30 percent of the households are headed by females. The households experience more problems in meeting their food requirements due to labour shortages at agricultural production peak periods. In rural areas seasonal changes aggravate food problems especially during the rainy season, particularly between January and March before harvesting.

On the national level, it is estimated that 3 million Zambians are malnourished or are at a high risk of malnutrition. Protein calorie malnutrition is a serious health problem in the country. An FAO report [8] had showed that 1947 calories on average (excluding alcohol) as against the recommended 2,038 calories per capita per day were being consumed. The average energy deficit among the malnourished in 1980 was estimated at 360 calories daily. Maize provides 60% of all the calories with the rural poor consuming even more. In Northern, Luapula and North-western provinces cassava is also important.

The situation in Zambia points to the fact that almost half the population of Zambia is under the threat of food insecurity. The rural areas and the urban poor are the worst affected people and that the number of people threatened by inadequate food is increasing. This is indicated by increasing unemployment, increasing income gap (between rural and urban areas and between households) and the reduction in the per capita income which recorded a loss of 15% from 1980 to 1986.[9] Within those people affected, the children especially those below the age of five are the worst victims. More than half of the country's pre-school children are at a risk of

inadequate and poor nutrition.

Causes of Food Insecurity in Zambia

Since the 1970s, per capita food production has been decreasing in sub-Sahara Africa. From 1970 to 1986 a decrease of 20 percent was recorded.[10] According to reports, the decrease was due to a rapid increase in population growth, decline in food production, natural calamities (e.g. drought), mismanagement and neglect of the ecology and the lack of incentives to farmers.

Similarly in Zambia the performance of the agricultural (food) industry has been declining since 1971. Both total and per capita crop production have had declining trends. Like most developing countries the goals set by the government have not been reached, especially those of self-sufficiency and income distribution. The Zambian First, Second and Third National Development Plans (FNDP 1966-1970, SNDP 1967-1976, and TNDP 1979-1983, respectively) have all emphasized the need for food self-sufficiency. The government realizes that almost all Zambian food requirements can be met within the country without having to import in view of the declined foreign exchange earnings from the mining industry. The government does also recognise that food self-sufficiency in itself would not provide adequate food to every Zambian. They, therefore, place an equal importance on reducing income disparities especially between the rural and urban households.

Like most, if not all, the developing nations, Zambia wants to provide its population with an adequate diet and to promote a more productive and efficient agricultural sector. The goals have not been achieved due to a variety of reasons ranging from population, agricultural policies, natural calamities to external factors. Some of the contributing factors to poor food security for Zambia are presented below.

Population Growth

Zambia has one of the highest population growth rates due to a high birth rate of 3.2%. In 1980 the population of Zambia was marked at 5.7 million people (1984 estimates give 6.4 million) and it is estimated to reach 11.8 million by the year 2000. The population growth rate has been around 3.4% per annum.[11] The high population growth rate has meant that more social services (e.g. health and education) are needed at the expense of economic investments. It also means that food production has to match the population growth rate. The problem for Zambia is then that of also satisfying the food needs of the rapidly growing population and achieving an adequate degree of food security for all the population. A population policy in Zambia does not 'exist' but is being formulated and will consider reduction of the population growth rate to manageable levels.

Migration Patterns and Unemployment

As previously mentioned, almost half the population of Zambia is in the urban areas. Zambia is characterised by a dual economy, with the urban areas having better facilities and better incomes as compared to the rural areas. The terms of trade between the rural areas and the urban areas in 1974 were put at 3.5 times more for the urban dweller than the rural dweller. In cash terms it was 6.3 times more.[12] The disparities were found to be in favour of the urban poor when compared to the rural poor even after considering the high cost of living and the unsteady nature of jobs in the urban areas. These income disparities have forced many people, especially the energetic youth, to leave the rural areas for towns. The rural areas are, therefore, left with mostly women, old people and children. In some rural areas, as stated before, as many as 30% of the households are female-headed. The migration pattern has had an adverse effect on food production in the rural areas, especially among the subsistence farmers. One notes that women are not only burdened with crop production and household chores but their access to agricultural inputs is very difficult. Within the rural areas are found

commercial farmers with high incomes and subsistence farmers with low incomes and inadequate food intakes. The subsistence farmers are far more in numbers than commercial farmers.

For those who have left the rural areas, they have been faced with the problem of unemployment. In Zambia the labour force was growing (1975-1980) at 3.5% per year and wage employment at 1.1% per year.[13] In order for the labour force to be absorbed a growth rate of 17% per year of wage employment creation was needed. The figures show that not only is the number of people threatened with food security increasing in urban areas but it will continue to increase. The rural areas on the other hand are losing labour and food production is threatened.

Income Distribution

Zambia's per capita Gross National Product (GNP) has been decreasing since the 1970s. From 1965 to 1984 a negative average growth rate of 1.3% was attained.[14] In 1980 per capita income was K351.40 and this dropped to K310.50 in 1985.[15] An article by Chikwanda reflected on the fact that Gross Domestic Product (GDP) had decreased by K1.95 billion in 1985 from 1980. Chikwanda attributed the decline in GDP to the decline in capital formation. He also noted that Zambia has an uneven income distribution which is due to "lack of a meaningful level of production". The income distribution in Zambia as indicated in the World Bank Report 1986, shows that in 1976 twenty percent of the population had 61.1% of the total dispossable household income accruing to them (see Table 1). The highest 10% had 46.3%. The data covered both rural and urban areas.

The World Development Report (1986) also showed the presence of an increasing average annual rate of inflation in percentages for 1965 to 1973 and for 1973 to 1984 as 5.8 and 10.4 respectively. The Zambia Daily Mail of December 13th, 1986 provided some up-to-date figures regarding inflation. The paper said that from 1982 to April 1986 the relative inflation for the high income groups was 165.2% but for the low income

Table 1: Income Distribution in Zambia, 1976:

Percentage share of household income, by percentile groups of households.

Lowest 20%	Second Quintile	Third Quintile	Fourth Quintile	Highest 20%	Total
3.4	7.4	11.2	16.9	61.1	100%

groups it was 172.5%. The figure for the low income groups was actually a moderate estimate but nonetheless showed the rapid decline in the purchasing power and widening gap in income levels of the Zambians. Not only is there poor income distribution but there is an even more serious problem of a rapid decline in the purchasing power of the people and hence increase in malnutrition even among the "well to do" households.

Consumption Patterns

The inability to purchase food or grow enough food, are not the only problems to acquiring adequate food. Consumption patterns do also contribute to problems of food security. In Zambia, in the past 15 years the consumption of wheat has increased at the expense of cassava, maize, sorghum and millet. More and more people in urban areas are depending on wheat products. Zambia does not have any advantage in growing wheat and so far has had to depend on imports and aid. Due to subsidies on wheat, the consumption pattern of the urban dweller (including the poor) is shifting towards wheat from maize. Maize itself was promoted in every part of the country as a staple food crop. This resulted in people, especially in non-traditional maize growing provinces abandoning cassava, sorghum, and millet. They thus put their food security situation at risk, since maize like wheat is an expensive and

risky crop to grow. The urban poor in Zambia have over the years come to consume breakfast mealie meal over roller meal. Roller meal has a lower extraction rate and thus is more nutritious with 88% calories. Breakfast mealie meal which is preferred has a smoother texture and is whiter but contains only 60% calories and uses up more maize in its production. Although it is more expensive than roller meal, it is still relatively cheaper since it is subsidized. The price difference of the two commodities has not led to low income groups purchasing roller meal and thus saving the much-needed maize. This "taste problem" became even more pronounced when the government tried a selective subsidy application in November, 1986. The government withdrew all the subsidies on maize intended for the production of breakfast mealie meal and Chibuku (a local beer). Subsidies for maize intended for roller meal production were going to continue. This resulted in price-hikes of breakfast mealie meal of more than 100% (see Table 2). The people, the urban poor, who were the targets for maintaining the roller meal subsidy rioted over such increases because they are used to consuming breakfast mealie meal and could no longer afford it. The following month the prices were nullified and reduced to their original levels.

Table 2: Prices for Breakfast and Roller Meal

	BREAKFAST		ROLLER MEAL
Weight(kg)	Subsidised(K)	Unsubsidised(K)	Subsidised(K)
25	19.15	38.65	14.85
50	37.32	76.30	28.70

The problem presented above is indicative of the fact that food security problems in Zambia can to some extent be solved by redistribution of the existing food sources within the population.

Agricultural Development

Since 1971, both total and per capita crop production has been declining in Zambia. The reasons for this, apart from the natural calamities like the droughts of 1981 to 1984, have been largely due to policies. Cash crops (non-food and food) like cotton, tobacco, wheat, soyabeans and sunflower have shown some increased production due to the price incentives to growers. Livestock production has also recorded some improvements except for the poultry industry. Maize the staple crop has been dependent on weather and as such there has been an erratic production pattern. The agricultural industry in general has not performed well to increase its share of the GDP in view of the diversification objective. Table 3 shows the shares of each sector to GDP for selected years. The agricultural sector has not improved its share even though it has been a priority industry since FNDP. The service industry has increased its share and thus has contributed to the need for more marketed food requirements since more people are net buyers of food. This reduces the guarantee for food security in a country were foreign exchange for importing food is a serious problem.

Table 3: Sectoral Shares in GDP-selected years (% of total GDP at current market prices)

Sector	1965	1970	1975	1978	1981	1982	1984
Agriculture, Forestry & Fishing	14	11	13	16	16	14	15
Mining & Quarrying	41	36	14	13	14	11)	
Construction & other industry	6	8	10	18	05	05)	39
Services & other	32	35	45	46	47	51	46
Manufacturing	7	10	14	13	18	19	21

Source: CSO Monthly Digest of Statistics (quoted in World Bank Report, 1984).

The problem of the staple food crop maize is discussed below in order to illustrate some policy issues that have affected the food security situation for both the urban and the rural poor.

Maize which is produced mainly by small scale farmers (60% of marketed maize) has had adequate quantities produced in 1976, 1977, 1981 and 1986. National requirements for the crop are estimated at 8 million. Whenever there is a shortfall the government has had to import maize to make up. However, since the mining industry started having problems in generating foreign exchange, food aid has been playing a significant role as Table 4 shows.

Table 4: Maize Imports and Aid (in Metric Tonnes):

Year	Total imports	Commercial	Food aid
1976/77	-	-	-
1977/79	122000	91000	31000
1983/84	205000	129000	76000
1984/85	335000	120000	215000

Source: Agricultural Marketing and Input Distribution Study, 1986.

The importation of maize and food aid have had a negative effect on the producer price of the commodity with respect to the world price. This has been so because of the tendency for the Zambian policies to lean towards investments as dictated by the needs of the dominating urban areas. One of the objectives of the government's food pricing policies has been to ensure food availability at low and stable prices for the urban centres. As a result the government has had to regulate prices of both domestic and imported maize. The price of maize has been below the world price. The producer price consequently, has not been conducive for optimal maize production. In addition, uniform pricing has encouraged maize production in

areas which are not suitable at the expense of traditional crops like sorghum, millet and cassava. The promotion of maize all over Zambia discouraged food self-sufficiency on a provincial level and provinces with comparative advantage were not fully exploited.

The marketing and distribution of maize has been done through a statutory board, the National Agricultural Marketing Board (NAMBOARD). Until late 1986, the price of maize was fixed and uniform throughout the country and throughout the year. For farmers it was more profitable to sell off their maize as soon as possible and not be faced with storage problems. This created a big problem for NAMBOARD which had to collect maize from numerous collection points before the following rains. NAMBOARD (later together with cooperative unions) could not cope with the collection of maize and losses where high.

In addition to losses through collection points maize is also lost through poor storage. Proper central storage facilities are few and located in urban areas. The rest of the cereal is poorly covered in tarpaulin material. Small scale farmers in remote rural areas retain about 50% of their maize (usually the local variety) for home consumption. Despite the use of the local variety of maize which stores better, losses of up to 30% have been recorded. The small scale farmers who do not retain maize find themselves selling the maize they need for consumption. They then purchase processed maize (mealie meal) which is cheaper due to government subsidies. They risk food security which arises when the income so realised is spent on other consumer goods. This problem is also common among the farmers who grow non-food cash crops like cotton. Studies have found that such farmers spend their incomes on luxuries like beer. A constant price for the whole season and the subsidy provided by the processed products and transportation have discouraged own farm food storage in most parts of the country. As a result the burden on the central storage has been heavy. Currently there are enough storage facilities for maize in Zambia. A total of 111360 metric tonnes capacity is available (Table 5).

Table 5: Storage capacity for maize by type and ownership:

	Silos	Sheds	Hard standings
Namboard	110700	294000	417780
Provincial Coop. Unions		12727	278400
Total Capacity	111360		

Source: Agricultural Marketing and Input Distribution Study. 1986.

The problem is that the storage facilities are located along the line of rail and in some cases away from production areas. The storage facilities were constructed for serving the urban areas by storing locally produced maize and imported maize.

With proper post-harvest management, particularly storage and early collection of the cereals the problem of food security on a national level would be arrested to some extent within the existing facilities.

External Factors Influencing Food Security

Zambia was, and still is, highly dependent on copper exports for generating foreign exchange. Since the price of the mineral started going down in the early 1970s, the country has faced serious problems in the balance of payments. The situation was aggravated when oil bills rapidly increased in 1973. Low foreign exchange generation implies that the country has to depend more and more on internal food sources. Food aid plays an important role in solving transitory food shortages. It, however, has a tendency to decrease domestic producer prices in the long run. It also tends to change the consumption patterns of the local people. Wheat consumption is a case in point. In the short run, food aid can be used positively as first aid. In the long run, food aid can be helpful if used as a temporary solution to transitory food shortages and investments into development of infrastructure are

undertaken for purposes of increasing food production.

Agricultural export earnings in Zambia come from beef, coffee, tea, tobacco and strawberries. Food imports are mainly of wheat. Since the auctioning system of foreign exchange (which resulted in the devaluation of the Kwacha) was introduced in October 1985, protectionist policies towards external trade have been relaxed. This has seen the use of foreign exchange on luxury goods such as canned beer, chocolates and wines in supermarkets. A large part of the population is not able to purchase such goods and the foreign exchange used could have been put to use in capital goods. Zambia like other developing countries exports primary products and the international market for such products is unfavourable. The terms of trade are heavily against the country.

The problems of unemployment, rural-urban migration, consumption patterns, income disparities, low purchasing power, poor post-harvest management, poor marketing and distribution, agricultural price policies and so on have contributed to the poor situation in Zambia's food security. Having presented some of the causes of poor food security, policies which are to be directed at specific populations to improve the food security in the country, are discussed below.

Policies for Improved Food Security

The main concern of the government has been to secure access for all Zambians to adequate food supplies through self-sufficiency. Other concerns have been those of improving the economic sitution of the rural population by increasing output of both food and cash crops and the creation of linkages between agriculture and other industries like the agro-processing industry so as to create employment. In view of the poor performance of the mining industry in generating foreign exchange, the government has placed importance on improving agriculture so that it could replace the mining industry as the main export commodity. Despite the objectives of the government towards agriculture and food security (these

objectives are laid out in the FNDP, SNDP, and TNDP) the performance of agriculture has been far from reaching its goals due to the general economic policies. Generally the well intended policies have tended to create a bias against agriculture in favour of the service and manufacturing industries which are mainly based in the urban areas. Policies that were aimed at helping the poor, like subsidies, have resulted in the poor being more so especially the rural subsistence farmers who have had to face high prices for their consumer goods. Policies in particular have limited the growth of agricultural production and hampered efforts to reduce rural poverty because of poor price incentives.

Food security goes beyond reliability of supply, be it through domestic production or through external trade or aid. It has to be extended to different social groups within the country. The people within a nation who are not enjoying food security have to be identified and policies have to be formulated to help as much of the population as possible.

D. Evans and J. Jiggins made an observation that, generally to help the most food security vulnerable groups in both urban and rural areas, there is need for economic and psychological changes in the decision-makers and planners. They said that for quicker results, project type of actions are needed.[16] These could aim at improving productivity, income and rural industrialisation. A more permanent solution can on the other hand be attained through investing in education, and streamlining administrative practices and attitudes within the country. They noted too that there was need for structural changes looking at issues such as the land tenure system, food distribution, food consumption, and food production in terms of quantity and quality. Finally, Evans and Jiggins tell us in their report that in the presence of shortfalls in food supplies, food imports are necessary. The observations made by the two authors are mainly aimed at helping the vulnerable group that has direct access to food. For the urban poor, policies aimed at employment creation, stable prices, stable food supplies, better purchasing power, and so on, may be more relevant.

In Zambia, transitory food insecurities normally occur due to lowered food production as a result of poor weather conditions. In such cases the country imports its food and/or obtains food aid from food surplus countries. For a household that is a food producer or net-seller, the problem may arise due to a drop in production levels. The household in such a case may resort to selling its assets like animals, or some members of the family may go and seek employment in neighbouring areas or it (family) may depend on remittances from relatives to cover the food shortfall period. Policies that may help solve this problem should therefore be aimed at stabilising food production through the use of drought resistant varieties, drought resistant crops, building of dams and irrigation infrastructure (or drainage where applicable) and improvement of storage facilities. On the national level, the capacity to import food has to be stabilized if buffer stocks are found to be too expensive to maintain. In Zambia, a study by the Ministry of Agriculture and Water Development into the Agricultural Marketing and input distribution, found that a minimum acceptable food reserve level for Zambia would be for 3.77 months maize consumption equivalent stock kept at the end of April.[17] A maximum equivalent consumption level should not be for more than 6 months. The stocks could also be used to monitor and stabilize prices throughout the year.

Chronic food insecurity solutions call for more general economic development policy when compared to transitory food insecurities. The World Bank Report for example, notes that "*economic growth ultimately provides most households with the incomes to acquire enough food. Only the sick, elderly, unemployed, unemployable or other disadvantaged groups then need transfer of payments from relatives or the rest of the society*".[18] The solutions, therefore, lie in economic growth, increase and equitable distribution of real income.

Policies that promote agricultural production in Zambia are more likely to improve the incomes of many poor people. The immediate problem in the country may be that of satisfying the food needs of a rapidly growing population and achieving an adequate degree of food security. Per capita food production

in Zambia has been decreasing when the population growth rate is very high. A population policy to reduce the population growth rate to a manageable size could also be a step towards achieving food security in the nation.

The government has been liberalising the economy in order to enhance economic growth. The new policies are aimed at improving the efficient use of resources and reducing government involvement in the production process of goods. Although the producer prices have increased, there is still need for more improvements in the input and output price relations in order to change the terms of trade between the cheap agricultural products and the expensive industrial goods. Subsidies on inputs have drastically been reduced. In order to help the poor small-scale farmers absorb the high input fertilizer prices, for example, the government provided K80 million as credit facility to farmers belonging to the cooperative movement as a form of a selective subsidy. A selective subsidy targeted at the poor urban people was also applied on the staple food, mealie meal. The events that followed the withdrawal of subsidies on breakfast mealie meal indicated that people were not yet ready for such subsidies which can be used to help the poor acquire adequate food. In Zambia the problem of implementing such a policy appears to be a difficult one. The government should nontheless apply selective subsidies to help disadvantaged target groups.

Employment policies are also required in order to provide income to people without any source of income. The government has come to realize that the private industry has a high potential for employment creation. The informal sector in particular can absorb a lot of people in small industries. The government, therefore, supports the creation of small-scale industries through Small Industries Development Organisation (SIDO), Village Industries Services (VIS) and Small Enterprise Promotion (SEP). For those who cannot be absorbed in small scale industries, the government is in the process of drawing up a Nation Service Rural Reconstruction Programme which will train the unemployed people in agriculture. Food security will be enhanced with more people finding employment or involving

themselves in small-scale industries and farming.

Consumption patterns, unfortunately, cannot be changed within a short time. The best solution to changing consumption patterns is to let the actual prices of the commodities prevail. Zambia for example should not let the wheat donations suppress the domestic wheat prices and thus make wheat products cheap (Zambia Daily Mail of 24th September, 1986, reported donations of wheat worth 5 million US dollars and 3.5 million US dollars from the United State of America and Holland respectively). This may lead to Zambia consuming more wheat which they have to import and thus reduce the food security of the country.

The government should also try to invest in basic services for the rural areas in order to retain those already there and attract the urban unemployed. The terms of trade between the rural and urban areas have to be reversed in favour of the rural areas. Basic infrastructure like roads, and hospitals should be provided. Rural marketing and input supply networks need to be improved upon. Agricultural development and thus economic development cannot be achieved without the small-scale farmer. Policies, therefore, should continue to shift in favour of this category of farmers. Research programmes should concentrate on traditional crops like sorghum, millet and cassava which are drought resistant and cheaper to grow. Extension services also need to be increased and improved. The small-scale farmers are also capable of producing export crops like confectionary groundnuts, cotton, soyabeans, tobacco, beef, and coffee. Although Zambia has a higher potential for import substitution crops, export crops cannot be ignored.

Conclusions

The paper has tried to identify the groups that are highly vulnerable to food security. The unemployed, petty traders, lowly paid workers and workers holding temporary jobs are seen as the vulnerable groups in the urban areas. The rural areas have also subsistence farmers and the small scale farmers

who are mostly victims of chronic food insecurity. The rural areas have more food security problems than the urban areas. It is estimated that 3 million Zambians have no access to adequate food. Children and women are the worst victims in acquiring adequate food.

The causes of poor food security have been noted as, the general decline in per capita food production, high population growth rate, migration patterns, unemployment, consumption patterns, poor income distribution, low purchasing power, lack of export earnings, and the lack of proper incentives for agricultural development.

Food security, which has two components; availability and the ability to acquire food, can be solved to some extent within Zambia through proper post-harvest management, food distribution, changing consumption patterns, reducing the population growth rate and providing income through job creation opportunities for those who are unemployed.

The solutions to the food security problem are seen in the improvements of agriculture. Agricultural development will bring about economic development which will provide incomes to the majority of people and thus help them in food security. Investments in rural infrastructure research and extension are necessary to achieve agricultural development. Population policies that call for family planning and thus help reduce the population growth rate are necessary to help improve the per capita food situation. Employment generating policies through the encouragement of the private sector could help absorb people not in employment. Selective subsidies targeted at the lowly paid people can help the majority of the urban poor. Subsidies on credit and inputs to selected farming targets can help improve agricultural production and productivity and hence food security for producers. Food aid which is seen as a temporary solution to food insecurity, should never be allowed to suppress domestic producer prices in the long run. On the national level, adequate stock could be kept not only for emergency needs but also for regulating and stabilizing food prices.

The potential for Zambia to attain food security is high. The answer lies in agricultural development which is seen as the engine of growth for economic development. Policies have to be directed at the improvement of the subsistence and small scale farmers in order to obtain the best results out of the resources available within the country.

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Southern African Studies Series No. 4
Published by
the Institute of Southern African Studies
National University of Lesotho
1988

ISBN 0-620-12102-5