

Food Security in East and Southern Africa*

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INTRODUCTION

Alarm has been expressed on the critical food shortage in East and Southern Africa. As a matter of fact, the recent FAO report concerning the state of global food security described the region as facing acute food shortages and, in some areas, widespread famine and deaths from starvation. Of course, this is not surprising since Africa is the only region in the world experiencing a decline in the per capita food production for almost two decades. Consequently, the calorie intake remains below the standard nutritional requirements and more serious is its declining trend in relation to the developing regions of the world. As expected, the bulk of the diet is still derived from cereals and/or roots and tubers. Hence, any unfavourable production policy and/or supply shock on the grains sector will have a deleterious nutritional impact on the livelihood of the vulnerable section of the population. The empirical findings of the study indicate that cereal production is unstable relative to other food commodities in Eastern and Southern African countries; thus, worsening the variability of food production during the last two decades. This observed high variability of food production will, on the one hand, make food entitlements (in Sen's terminology) uncertain. On the other hand, it worsens the already declining trend of food production. Consequently, the objective of seeking food self-sufficiency will be difficult to fulfil, at least in the short-run.

A major conclusion to be drawn from the analysis of food insecurity in the region is that entitlement determination represents a basic shift in addressing food security in the region from a short-term to a long-term perspective. In turn, potential policy options were broadened to improve food security in the region: from reversing the historical production trend alone to a whole range of trade, inputs, investment, portfolio management and diversification of the sources of income and entitlements.

The study attempts to assess food insecurity in East and Southern Africa over the last two decades. At the methodological frontier, the study reconciles the definitional debate of food security with the appropriate indicators required to assess food problems in section 1. The most striking difference between this study and the majority of the surveys in food security issues is the attempt to interpret the short-run definition and its indicators as an integral part of the long-term

concept of food security. Consequently, the relevant measurement of food security in the long-run is extended to cover both the demand and supply issues. Section 2 assesses quantitatively food insecurity based on regional aggregates and section 3 extends the analysis of the magnitude of food insecurity at a country-level for East and Southern Africa. Factors that might have explained food insecurity problems are outlined in section 4 and finally section 5 concludes the study by suggesting a set of desirable future policies to improve the food security in the region.

1. DEFINITION AND MEASUREMENT OF FOOD SECURITY

Since Malthus' days, almost two centuries ago, food problems and food security have been formulated on whether food production can keep pace with population growth. Consequently, the definition and the measurement of food security evolved around the Malthusian fears. The common short-run definition of food security in a single country or in the world at large is the ability of food-deficit countries, or regions within countries, or households within these countries to meet target consumption levels on a year-to-year basis (for example, Valdés 1981: 2 and Bigman 1985: 6 among others).

The target consumption levels are represented in the literature by a constant: a level of average per capita consumption (trend) and/or a minimum person's caloric intake (energy requirements). I.e., the choice of the target level determines the measure of the food security. In practice the severity of the food problem, in the demand-driven approach, is measured by two indicators. The first of these is the expected food gap which is defined as the difference between actual average consumption per capita in any given year and a normal year (or trend) level of average per capita consumption, when a gap exists.¹ The second indicator is food insecurity which is defined as the probability that in any given year actual food consumption will fall below a minimum daily requirements level, employing nutritional criteria. The nutritional aggregate measure focuses on the energy intake required to maintain the body weight of an individual, which was determined by the World Health Organisation (WHO) and the Food and Agriculture Organisation (FAO) of the United Nations as the minimum requirement, about 2350 kcal per person per day. Despite some nutritionalists' doubts, this measure is widely used by the World Bank, the FAO and many food analysts.²

¹ Computationally, the measure is obtained by multiplying the probability that per capita consumption in the future year would fall below its normal year (trend) level, by the size of the gap. Reutlinger and Selowsky (1976) have estimated the food gap for several countries. However, their estimate is based on the caloric deficiencies of the undernourished people only. For detailed discussions on the use of trend level of consumption as the target, interested readers may refer to Valdés (1981) in particular Chapters 1 and 2, pp. 1-52.

² Srinivasan (1977, 1981), Bigman (1985) and Ehrlich et. al. (1983) among others summarised the nutritionalists' concern that a single standard of calorie needs (based on an ad hoc base for body weight for men 60 kg and for women 52 kg) fails to take into account interpersonal

FAO publishes updated calculations of per capita food availability derived from food balance sheets and based on national averages. The average per capita availability in developing countries is lower than that in developed market economies. The former is estimated to provide 93% of the defined energy requirements and 115% of the requirements for the latter (FAO 1982 and FAO/WHO 1973).³ In essence, the national average per capita calorie intake determines the number or the proportion of undernourished people for each country. Although the FAO and the World Bank have attempted to take account of some personal characteristics in defining undernutrition, undernutrition has been considered as a proxy for undernourishment in the literature.⁴ In addition, other objections have been raised to reflect the extent and the scope of undernourishment. Consequently, the philosophy and dimensions of food security have been influenced by Sen's (1981) concept of entitlement.

In this long term equilibrium view, food security is defined as access by all people at all times to enough food for an active, healthy life (Sen 1981; Bigman 1985; World Bank 1986; Osmani 1988; Maxwell 1989; Drèze and Sen 1989; Ali 1993). The essential elements of this definition are the emphasis on both the demand (access) and the supply (availability) of food. Hence, food insecurity is simply the lack of access to enough food. The elaboration on the definition and the underlying conceptual framework of this approach focus attention on issues ignored in the previous definitions. These are the distinctions between transitory and chronic insecurity, inequalities in the distribution of income and wealth, seasonality and inter-annual variation and the functionality of an adequate diet.

Transitory food insecurity is a temporary decline (or shortage) in a country's or households' and/or regions' within the country access to enough food. These shortages may result from instability in food production, food prices, incomes, etc. The continuation of these shortages or persistence of inadequate diet caused by the inability to acquire food results in chronic food insecurity. I.e., chronic food insecurity is the continuous inability either to buy enough food or to produce own food. Thus, the definition provides a testable hypothesis of food security;

differences attributable to age, body size, level of activity patterns, climate and the like. They also argue that an inadequate intake of calories is not the only cause of undernutrition.

³ Bigman (1985) assumed the minimum level necessary for survival and adequate health to be equal to 90% of the normal year level of average per capita consumption.

⁴ Although the two concepts are tied, this study will contrast the two concepts following Drèze and Sen (1989: 14) implicit distinction. Undernutrition is usually seen in terms of a shortage of food calorie intake, while undernourishment is taken to mean an unsatisfactory state of being. It follows immediately that the former is connected with commodities (in particular consumed food relative to the nutritional standard), while the latter is connected with the state of human beings (e.g. a person being somehow inadequate in energy or strength or some other feature associated with nutritional sufficiency).

namely the decline in food availability (or rather the stability of both consumption and production).⁵

2. QUANTITATIVE ASSESSMENT OF FOOD SECURITY IN AFRICA

Food security in Africa has deteriorated since the early 1960s as reflected in the decline of per capita food production over the past two decades by 4% per annum (Table 1).⁶ In contrast, food output for all developing economies went up (in Asia by 1.8% and in Latin America by 0.4% per annum), indicating that Africa is the only region in the world plagued by production problems (in addition to other problems) over nearly two decades. Despite the high population growth rate, the contrasting trend of food output in Africa vis-a-vis other regions of the world reflects significant differences in output performance rather than population growth rates. More alarming, in this analysis, is the higher degree of production instability in Africa relative to the rest of the world, using the coefficient of variation as an indicator of variability. The observed variability in food production is nearly 10% for Africa compared to less than 3% in other developing regions (Tables 1 and 2).⁷

Although food production includes cereal and non-cereal staples, it is the higher variability in cereal production that explains most of the observed variance in total food production. Table 1 and Figure 1 suggest that fluctuations in staple food production, follow closely the fluctuations of total food production. This is particularly true for Africa but not generally for Asia and Latin America, as indicated by the estimated coefficient of variations, thus confirming the general rule of food security (Table 1).⁸

The higher variability of cereals production reflects a high share of cereals in total food rather than the differences in the degrees of freedom used in the calculation of the coefficient of variations (Table 2).⁹

⁵ The interpretation of the general hypothesis of the entitlement approach offered by Osmani (1993) attests to this fact. That is, famines can be caused by food availability decline since it worsens the entitlement of a person. Of course, factors other than food availability decline can also cause famines by worsening the entitlement mapping; e.g. raising the price of food, general inflationary pressure or loss in purchasing power.

⁶ The average annual rate of decline in food production in Africa is 0.6% and the growth rate of its population is 3.3% in 1979-90.

⁷ The fluctuations in various regions rarely occur in unison. As a confirmation to the elementary statistical property, fluctuations for the world are uniformly much less than for any one region.

⁸ The general empirical rule states that for most countries, fluctuations in staple food consumption follow closely the fluctuations of domestic staple production (Valdés and Konandreas 1991: 33-34).

⁹ The estimated coefficients of variations for the sample period 1981-91 (Table 2) are more relevant, uniform and comparable to the estimates in (Table 1) than those reported in the sub-period 1961-80.

What is salient in Figure 1 is the high correlation between food and agricultural production indices in Africa. This suggests that food production is not only an important source of food supply, it is also a major source of income and livelihood for the population. Consequently, any reduction in per capita food production will reduce the income of at least 60% of the population in Africa.¹⁰ However, the observed decline in per capita food output in Africa need not have resulted in a collapse of food entitlement, if that decline had been compensated by an expansion of alternative incomes usable to acquire food from other sources, e.g. through food aid and/or imports (Drèze and Sen, 1989, p. 33). This is the case for Africa as a whole, in particular in the 1980s when the average calorie intake has improved and consequently food consumption was relatively stable around 3.5%, measured by the coefficient of variations (Tables 1 and 3). However, the improvement in caloric intake was short lived and does not represent the majority of the countries. The experiences of food problems in many African countries are at variance, especially in the East and Southern region of the continent.

¹⁰ Agriculture employed more than 70% of the labour force, accounted for 40% of GDP and agricultural population represents 60-90% of total population in the majority of African countries (ADB 1992, FAO 1992 and the World Bank 1989).

Table 1. Stability of Food Production and Caloric Intake in Eastern and Southern African Countries - Measured by C.V. for 1979-1990 (in percent)

Country	Agriculture	Food	Cereals	Caloric Intake	Membership
Angola	1.7	8.8 (-2.5)	13.6	8.5	SADCC
Botswana	8.7	14.8 (-3.2)	81.9	4.1	SADCC
Burundi	9.7	4.3 (-0.9)	15.6	8.1	
Comoros	-	-	-	3.2	
Ethiopia	4.8	8.2 (-2.0)	12.4	6.9	
Kenya	15.3	7.1 (0.1)	18.9	7.5	
Lesotho	7.0	11.4 (-3.0)	23.8	6.3	SADCC
Madagascar	7.4	4.1 (-0.8)	7.5	15.2	
Malawi	6.4	8.4 (-2.2)	7.3	12.6	SADCC
Mauritius	8.7	8.2 (-0.7)	72.8	6.8	
Mozambique	3.8	6.7 (-1.5)	8.6	10.3	SADCC
Namibia	11.3	6.3 (-0.6)	17.6	-	SADCC
Reunion	11.5	16.3 (-3.5)	9.7	8.6	
Rwanda	4.8	12.6 (-2.8)	9.1	6.5	
Seychelles	-	-	-	8.1	
Somalia	12.5	3.1 (-0.4)	28.3	20.3	
South Africa	9.1	9.9 (-1.0)	22.8	-	
Sudan	9.5	15.5 (-2.8)	40.7	8.7	
Swaziland	10.2	5.6 (-0.3)	38.7	7.4	SADCC
Tanzania	8.4	5.2 (-1.8)	17.5	7.0	SADCC
Uganda	10.2	7.6 (-1.0)	20.1	12.0	
Zambia	15.5	6.4 (-1.5)	33.5	6.1	SADCC
Zimbabwe	16.9	16.0 (0.3)	34.9	4.8	SADCC
Africa	9.4	9.9 (-0.6)	13.4	3.5	
The World	7.9	2.0 (0.4)	7.9	-	
Latin America	8.8	2.4 (0.4)	9.5	-	
Asia	13.0	2.6 (1.8)	10.6	-	

Notes: C.V. and growth rate are calculated from data in ADB (1992, Table 40, Appendix A42), FAO (1990, Tables 5, 8 and 9, pp. 41, 47 and 49 respectively) and Table (3) in the text.

C.V. abbreviation of the Coefficient of Variations and is defined as the sample standard deviations adjusted by its arithmetic mean.

- means not available.

Numbers enclosed between brackets are average annual rates of growth during the period.

Table 2. Index of Agriculture, Food and Cereals Production in Africa (Base Year 1979-81)

Figure 1. Agriculture, Food & Cereals Production Indices in Africa for 1965-91.
(1979-81=100)

[Note: Figure 1 not available in the web version.]

3. FOOD INSECURITY AT COUNTRY LEVEL

The observed variability in food consumption in Eastern and Southern African countries ranges from a low 3% and 4%, such as in Comoros and Botswana, to as much as 15% to 20%, such as in Madagascar and Somalia. With the exception of Comoros, all Eastern and Southern African countries exceed the average variability in the continent (Tables 1 and 3). Two thirds of the countries had an amazingly high degree of consumption variability - more than twice the average variability in Africa and above the 7% cut-off point in Valdés and Konandreas (1981: 30).¹¹ The share of cereals and roots in total food consumption (measured in calorie equivalent) is very high in countries with high degrees of consumption variability: above 60% in East Africa and exceeding 74% in Southern Africa (Table 4).

Cereals are clearly the dominant food staple in Southern Africa, with the exception of Mozambique (Table 4). Almost all member countries of the Southern African Development Coordination Conference (SADCC) region obtained more than 50% of their average daily caloric intake from cereals. With the exception of Mozambique and Malawi, the observed variability in cereals consumption in SADCC region exceeded the average in Africa. This pattern is also common in countries with civil unrest or wars (e.g. Sudan, Somalia and South Africa), countries with a large poor urban population (e.g. Zambia and Sudan) and countries with poor infrastructure (e.g. Uganda).

Food production has been relatively stable in most Eastern and Southern African countries, as their coefficients of variations are below Africa's average (Table 1). Observed production instability has been associated with countries faced by meagre and unreliable rainfall in the landlocked southern central region (Botswana and Lesotho), countries with civil unrest or wars (Rwanda, South Africa and Sudan) and historically food-surplus economies and currently experiencing severe prolonged drought (Zimbabwe). At least four countries in the region have experienced famine in the mid-1980s (Ethiopia, Mozambique, Somalia and Sudan), and all of them have experienced considerable decline in per capita food production (Table 1). If the poor rains and civil disturbances continue in these countries, food shortages will threaten vast expanses of East and Southern Africa. As a result, not only will incomes and entitlements decline in these economies, but the main source of caloric intake will drastically deteriorate. Domestic vegetable products provide 94% of the caloric requirements in Africa, i.e., significantly higher than other regions of the World (Tables A1-A5 in the Appendix).

¹¹ Observed consumption variability in 44 of 67 LDCs were found equal to or above 7% (Valdés and Konandreas 1981: 30-31).

Table 3. Calories per Caput per Day (FAO Food Balance Sheet)

[Table 3 not available in the web version.]

One important implication of this quantitative assessment is that even though current problems of food insecurity in Eastern and Southern African countries are afflicted *inter alia* by the decline in food production, remedial actions must not only take the form of reversing the trend. Other complimentary and possibly alternative actions, such as diversification of economic activities promoting internal storage and trade within the preferential trade area (PTA) for Eastern and Southern African countries and expansion of public support, deserve attention as well.

4. FOOD POLICIES

The common features of food policies in Eastern and Southern African countries can be traced back to colonial policies designed to integrate colonies into metropolitan trading networks and to protect settler population. Colonial policy in East and Southern Africa was shaped by two forces: the labour requirements of mining and the presence of large settler population (USDA 1979: 124). The labour reserve was required to provide low value-added activities for both mining and white-owned farming. Consequently, the need to feed the miners created a demand for food commodities. At the initial stage, African producers were the main suppliers of indigenous food-stuffs. At a subsequent stage, the introduction of dual land-tenure system and increased government intervention policies improved the position and hence the commercial procurement from larger white-owned farms.

Trade patterns shaped by colonialism have not been fundamentally changed and exports of primary commodities are still the order of the day. As a result no technological improvements nor wide range marketing activities have been introduced to enable countries to diversify their exports. The range of government food policies have been limited and their instruments were designed to provide much of the tax revenue and sources of foreign exchange. These policies were of short-term nature and some variant of these policies are still in force.

On the one hand, government policies failed to attract long-term investment in the food sector. On the other hand, the continuous decline in government investment coupled with its crowding-in effect of private investment have weakened the infrastructural support needed to promote marketing of locally produced food. I.e., the non-price factors have been shown to be extremely important in improving food sector's growth as translated in the low priority given to food production in Africa in the last two decades (Chhibber 1988; Lele and Mellor 1988; Taylor 1988; Binswanger 1989; Knudsen and Nash 1991; Chhibber and Fischer 1991). However, correcting non-price policies alone will not lead to sustained increases in food production.

Table 4. Averages of Daily Per Capita Calorie Intake from Cereals in East and Southern Africa in the 1970s (in percent)

[Table 4 not available in the web version.]

There is voluminous literature on food pricing policies in Africa (for example, Mellor 1978; Timmer 1986; Salih and Affan 1986; Hay and Rukuni 1988; Krueger et al. 1988; Pinckney 1988; Timmer 1988; Franzel et al. 1989; Wright and Takavarasha 1989; Lele 1990; Oyejide 1990; Rukuni et al. 1990; Jiriyengura 1991; Rubey 1992; Jayne and Rubey 1993; Salih 1993; Valdés and Muir-Leresche 1993). Frequently cited policies include domestically produced food staples at low procurement prices in order to keep domestic food prices artificially low so as to benefit urban consumers. Although policy implications are at variance, strong empirical evidence from the majority of these countries suggest that these policies have failed to achieve their designated goals and in some instances they destabilise food production.

In May 1980 the first economic summit of the Organisation for African Unity (OAU) recognised the severity of food insecurity in the continent and placed increased food self-sufficiency on its agenda. The concept of food self-sufficiency has also been emphasised in the Lagos Plan of Action and the year 2000 was set as a target date to achieve self-sufficiency.¹² The fulfilment of this objective will require more than organising political campaigns. A whole range of policies are identified and sequenced to compliment the expressed political commitment and loyalties needed to enhance food security in the region.

5. CONCLUSIONS AND FUTURE POLICY OPTIONS

The recent wave of structural adjustment and stabilisation programmes throughout East and Southern Africa has been associated with the removal of controls on consumer prices of staple foods. It has been shown in various country studies that the proportion of the population affected by this economic hardships have increased in the short-run (e.g. Lele 1990; Oyejide 1990; Ali 1993).¹³ The resumption of across the board food price controls in these countries becomes less viable under structural adjustment programmes. In addition, remunerative producer prices encourage food production. Moreover, empirical evidence suggests that the major threat to food security are more related to low and unstable incomes and to unemployment than to food production deficits (Hay 1988). The alternative policy option is to improve food entitlement through direct cash

¹² The argument for self-sufficiency to fulfil food security is derived from the observed fact that many African countries which become increasingly dependent on food imports from abroad have also developed problems of food inadequacy and hunger within their economies as witnessed in the last decade. There are opposing arguments to this view stemming from the success of some countries (e.g. Botswana, Cape Verde and to a lesser extent Kenya) in enhancing food security in spite of poor records in terms of food self-sufficiency. These experiences will be discussed in the section to follow.

¹³ On the opposite side, analysis of five African countries indicates that structural adjustment has caused no unequivocal pattern of increase or decline in the real welfare of the rural poor (Sahn and Sarris 1991; Jayne and Ruby 1993).

support to protect the entitlement of vulnerable groups as experienced by Botswana and Cape Verde (Hay and Rukuni 1988; Osmani 1988; Drèze and Sen 1989). Such income-generating resources (not just immediate relief) will enable the beneficiaries to acquire the inputs (food, clothing, etc.) which will in turn create the desired functionings such as living a healthy active life. Similarly, food aid resources could be transferred into commodity wage; in particular when food aid represents a substantial portion of international resource flows to some countries (e.g. Malawi, Mozambique and Zambia).

It is not clear whether food aid will ensure adequate availability of food during a long series of droughts in the region. In this case, there is a need to appeal to different strategic measures to protect food entitlements. These long-term measures include depletion of public stocks, increased regional trade, diversification of production and technological deepening.

Theoretically, buffer stock from own production gives a country (or a region) a more secure basis for managing crises as demonstrated in large countries such as India (Osmani 1993). However, grain storage is costly to implement in small African countries. Alternatively, there is considerable scope for decreased costs and increased efficiency through regional trade within East and Southern Africa. Despite Lipumba and Kasekende (1991) pessimistic discussion about successful economic integration in East and Southern Africa, the potential for expanding intraregional trade does exist within the Preferential Trade Area (PTA). The PTA Treaty calls, *inter alia*, for cooperation in marketing and stabilising prices of agricultural commodities including food-stuffs.¹⁴

If member countries were to orient their production patterns towards products in which they have comparative advantage, then intraregional trade will be mutually advantageous. Such a strategy could be realised by establishing an active and integrated regional cereals market as suggested in SADCC Food Security Programme (Hay and Rukuni 1988).¹⁵ The elimination of tariff and nontariff barriers required to facilitate intra-PTA trade were set to be completed by the year 2000. Success has already been reported in the setting up of a PTA clearing house and foreign currency saving has been realised (Lipumba and Kasekende 1991). In addition PTA has succeeded in bringing businessmen and traders from the region together, a PTA Chamber of Commerce have been formed and information on products produced by each member country is increasingly available. This

¹⁴ PTA was established in 1981 when 12 member states (of the 20 countries of East and Southern Africa) ratified the Treaty and functioned formally in July 1982. According to the Lagos Plan of Action, Sudan was considered a part of Central Africa, however, Sudan joined PTA as listed in the statistical tables of the study. PTA has two main objectives: to promote growth in intra regional trade with the aim of moving gradually towards a common market and to promote regional economic development.

¹⁵ The impacts of seasonal and climatic variations on cereals could be minimised, since member states are located geographically both north and south of the Equator. Recent movements of food aid from grains-surplus countries (e.g. Sudan) to grains-deficit countries (e.g. Somalia, Zambia and Zimbabwe) was a case in point.

demonstrates that trade is fast-reacting and benefit may well be derived from marketing sooner than in production activities.¹⁶

PTA Treaty also calls for cooperation in agricultural development research, extension and the exchange of technical information and experience. Such activities are needed to sustain growth in farm productivity. However, regional cooperation in applying research results, developing natural resources across boundaries (rivers, lakes and valleys) and promoting infrastructural projects may require institutional buildings and financing. Experience within SADCC Food Security Programme indicates that such activities require a longer time than anticipated.

The indirect influence of technological transformation on agricultural productivity cannot be ignored. These long-run opportunities merit further research of advantages and costs of alternative diversification strategies in the region. In so far as the crisis of food production in the region relates to climatic uncertainties and to environmental deterioration, there is a need to consider other avenues of productive expansion.¹⁷ Given the actual climatic uncertainties, food production will remain vulnerable to fluctuations in the future and, in turn, income and entitlements will be uncertain. This is an argument for making use of opportunities offered by other types of production to improve the source of income and entitlement in Africa (Drèze and Sen 1989). The need for diversification has often been adequately stressed in outlining possible solutions to the food insecurity problem in Africa. Historical experience of many countries in the region tend to be severely underestimated in the literature such as diversification within the agricultural sector (e.g. between food crops and cash crops, or between crops and livestock), combination of agricultural and non-agricultural activities (e.g. crafts and trade) within the rural sector, and the use of extensive links between different rural regions and between rural and urban areas (through wage employment and remittances).

For each of the policies we have considered, there is a need for much more thorough probing of its political, financial and institutional implications. Besides, there are a good number of alternatives which we have not considered at all. For example, the debate on the prospects of industrialisation in the region provides a relevant alternative.¹⁸ Nevertheless, it may be useful to lay out the main conclusion that emerges from this preliminary analysis. That is, the entitlement

¹⁶ On the basis of this argument, Hay and Rukuni (1988) recommended a shift from food self-sufficiency to intra-regional trade to meet food needs.

¹⁷ There are ongoing regional and global efforts designed to improve the management and sustainability of the ecosystem in Africa within Agenda 21 adopted at the Earth Summit. At the prevailing politico-economic circumstances, some facilities are likely to provide increasing lending sources to Africa such as the Global Environmental Facility (GEF).

¹⁸ On the case for less pessimism on the promise of industrialisation in the future of Africa see Drèze and Sen (1989) and for relevant empirical studies see Riddell *et al.* (1989) and the literature cited there.

approach is more appropriate to the analysis food insecurity in East and Southern Africa and in particular in the long-run.

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Table A1. Sources of Calories Per Caput Per Day (FAO Food Balance Sheet)

[Table A1 not available in the web version.]

Table A2. Protein Per Caput Per Day (in grams)

[Table A2 not available in the web version.]

Table A3. Fat Per Caput Per Day (in grams)

[Table A3 not available in the web version.]

Table A4. Calcium Per Caput Per Day (in milligrams)

[Table A4 not available in the web version.]

Table A5. Iron Per Caput Per Day (in milligrams)

[Table A5 not available in the web version.]

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