Background to the Food Shortage in Sub-Saharan Africa.

Over the past two and a half decades Sub-Saharan Africa has become a significant net importer of foodstuffs, notably cereals. Since Sub-Saharan Africa is amongst the world’s land rich areas and since the vast majority of the population is composed of agricultural producers, this portrays a grim picture. Until about 1962, Sub-Saharan Africa had been a net food exporter. Since then, Sub-Saharan Africa has increasingly become a net food importer.

To better understand the gravity and the long-term nature of Sub-Saharan Africa’s food crises, the following comparison between India and Sub-Saharan Africa is of interest. In 1960-61, India and Sub-Saharan Africa produced annually about 87 and 32 million tons of food-grains respectively. Today, over thirty years later, India has more than doubled it’s food cereals output, while Africa’s food production is just a little more than 50 million tons, i.e., 58 percent more than thirty years ago, which strikingly illustrates the enormity of Africa’s current food crises. In the early 1980s, India even managed to achieve self-sufficiency, and in 1985, had stored 26 million tons of food cereals, even participating along with developed countries, in the emergency food relief for Africa. Another comparison that further highlights Africa’s food crises is the productivity of the African farmer. While the average African farmer produces around 600 Kg of grain a year, in the United States or Canada, the average farmer produces approximately 80,000 Kg that is 130 times more.1

Since the early 1970s, food production in Sub-Saharan Africa has declined. Per capita food production has grown at an average annual rate of less than 2%, while population growth has continued at around 3%. Production of major staples (cereals, roots and tubers) has increased only 1.4% a year (i.e., less than half the annual population growth rate). The deterioration in overall food supplies is illustrated by the per capita food production index that, for Africa as a whole, declined from 210 Kg (in wheat equivalent) in 1970 to 197 kg in 1980.²

During 1980-84, food production growth rates deteriorated further, resulting in severe food shortages and causing widespread famine in 25 countries. A comparison of food growth rates during 1980-85 and 1986-87 shows an average annual growth of 2.8% during the first period and only 1.9% during the second (that is a decline of 0.9%). In 1986-87, per capita food production declined in 32 African countries, remained unchanged in two other countries and increased in only 11 countries. Moreover, in 1986-87, only seven countries achieved a per capita food production growth rate that was significantly higher than their population growth rate during 1980-85. Non food production, however, did better, with the growth rate improving from 2.5% during 1980-85 to 3.2% in 1986-87.³ Taking into account the adverse effects of the 1983-84 drought, and the very good weather conditions in 1985, one might expect in normal years, such as 1986-87, food production growth rates have at least

³ Ibid.
covered that of the population growth rate. Unfortunately this was not the case.

As domestic production failed to keep pace with the population growth, the gap had to be filled in with imports. Food imports as a percentage of agricultural imports were about 80%, on average, during 1975-85, and 83% during 1981-85. In volume, Africa's agricultural imports of which food is the major component, grew at 6.2% a year during 1980-85. This was more than 3% per capita a year. This substantial rate of increase is explained by a food production growth lagging behind the population rate. The drought alone cannot explain these soaring imports. In 1980-81, food imports increased 12% a year, while during the drought years (1983-84) their increase was less than 5%. However, this decrease in agricultural imports was probably due to Africa's overall economic crises that resulted in cutbacks in agricultural imports.

In the 1980s, in value, agricultural imports have accounted for 23% and food imports for about 19% of merchandise exports. During 1981-85, agricultural imports, as a proportion of agricultural imports, increased while the share of agricultural exports declined compared with the period 1975-80. Since 1980, the food and agricultural sector has been a net foreign exchange user and has contributed to Africa's balance of payments' deficits. This is a complete reversal of the sector's role in the mid-1970s.

Food self sufficiency ratios or the domestic production as a percentage of total consumption worsened during 1983-84. Of the

4 Ibid.
5 Ibid.
41 African countries for which data were available, 31 experienced a low self-sufficiency ratio during 1983-85 compared with the 1971-81 period. For the quarter of the latter, the decline was over 10%. For Sub-Saharan Africa, food imports soared from an annual average of $598 million in 1961-63 to $1 billion dollars during 1980-82 (Norton 1987). About two thirds of this increase were for cereal imports, mainly wheat and maize. Since 1960, per capita food production in Africa has declined about 20%. While just 10-20 years ago most African countries were able to feed themselves, they now face the prospect of not being able to do so in the near future.

A FAO in depth study reported that despite food imports and food aid daily caloric intake in Africa remained at a stagnating level of 2100 calories per capita. Today nutrition levels have fallen sharply. Though the developed economies would produce more to cover the food deficits of African countries, many of the least developed countries will not have the resources to acquire the foodstuffs on a commercial basis. This means that food aid will have to increase many times by the year 2010. The FAO study (1986) indicated that distribution and transport facilities of many African countries would not be adequate to handle such huge quantities. The result is that food availability will decrease further. While some countries may be able to cope with this alarming situation by relying on income generated by non-agricultural sectors, many will experience widespread chronic famine and or mass starvation.

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unless they are provided with substantial support from the international community.

**Fundamental Causes of the Food Shortages**

Sub-Saharan Africa is the only region in the world where per capita food production has declined over the past two decades. Any attempt to solve Africa's enormous food security problems should start with an analysis of its fundamental causes as well as factors that tend to aggravate the effects of these causes.

Three factors may lie at the root of the problems pertaining to the present agricultural crises and food insecurity in Sub-Saharan Africa:

- Inappropriate policies pursued by African countries with a bias and neglect against the food and agriculture sector;

- Lack of technological change; and

- Institutional weaknesses and lack of basic infrastructure.

**Inappropriate Agricultural and Food Policies**

Although in many Sub-Saharan countries, the agricultural sector accounts for more than 50% of GDP, employment and foreign exchange earnings, many African countries devote less than 10% of their national budgets to the sector. For example, in Benin, the share of agriculture in public expenditure is 8.5%, whereas the sector contributes 47.6% to GDP. Likewise, in Liberia, only 9.4% of public expenditure is devoted to agriculture, whereas its share of GDP is 35.1%.8 Since independence, many African countries have favoured industrial and urban development at the expense of food and agricultural development. Within the food

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8 Norton., n. 2.
and agriculture sector, policies have favoured large commercial plantations for export crops and have neglected the food sub-sector.

The neglect of the agricultural sector, in general, and the food sub-sector in particular, is also illustrated by excessive taxation through overvalued currencies, coupled with lower official producer prices fixed by the governments and implemented and enforced by parastatals (e.g., various grain marketing boards, state coffee and Cocoa corporations, etc.). As a result, farmers have not been encouraged to produce more and/or beyond their family consumption requirements. Lack of long-term investment resources to acquire various farm implements and machinery, and short-term financial resources to meet cash input purchases (fertiliser, improved seeds, pesticides, etc.) have kept productivity at extremely low levels.

Overvalued currencies have made food imports cheap for urban consumers (e.g., in Nigeria in 1983, imported maize cost approximately dollars 315/ton for locally produced maize). With rapid urbanisation, the demand for imported cheap food (wheat and rice) has increased rapidly. One offshoot of increased imports of subsidised food, especially food crops that are not produced domestically (e.g., wheat) is the changing consumption patterns. Reliance on imported food to feed urban populations may not be in the interest of African countries in the long run, as changes in taste shift consumer preferences away from traditional food to imported food, with adverse effects on domestic production and worsening balance of payments. Price policies have been significantly less favourable to African farmers than elsewhere in the developing world.

Lack of Technological Change for Increasing Productivity
As mentioned, the productivity of the average African farmer is extremely low, as is the land’s productivity. In India, which in the late 1950s and early
1960s was one of the poorest countries in the world, food production grew on average by 2.8% a year. This 2.8% increase was largely achieved by increases in yield per hectare (which increased 2.4% annually while increases in area accounted for only 0.4%). Increasing yield per unit of land was therefore the key to India's success. But, other supporting services and physical infrastructure had also markedly improved, including transport, irrigation, input supplies, etc.9

The maps show that in Sub-Saharan Africa, on the contrary, yield per hectare has barely increased since the 1960s. Of a total 1.6% increase in food production, yield increased only 0.1%.10 This means that overall food production growth in Africa has been achieved mostly through expansion of area under cultivation. In other words, there has not been a significant technological change in African agriculture since the 1960s.

The low productivity is a result of the low level of input use in food and agricultural production. For example, fertiliser use on food crops is about 5 kg/ha for export crops. Several reasons explain why technological change is not taking place rapidly. One is the poor incentive structure facing producers, including lower product prices, poor marketing and extension services that do not make investing in productive inputs profitable. Moreover, the lack of foreign exchange makes it difficult to import inputs. Many farmers, especially small farmers (primarily women) do not have easy access to available input supplies. Even when imports of inputs is not a major constraint, a number of other hindrances, including poor transportation infrastructure, lack of credit and

9 Tapsoba., n. 2.
10 Ibid.
SUB-SAHARAN AFRICA

CHANGE IN CEREAL YIELD - 1985-1997

Change in Cereal Yield 1985_97
Percentage

- Dark grey: 30 to 58 (10)
- Medium grey: 6 to 30 (10)
- Light grey: -7 to 6 (11)
- Lightest grey: -46 to -7 (14)
ill managed marketing and distribution systems, prevent farmers from acquiring the quality and quantity of inputs needed, let alone on timely basis.

New technologies have been developed, often without taking into consideration the complexities of the "real world", including risks and socio-economic constraints. Research often has been confirmed to research stations rather than experimenting within the complex farming systems of the farmer. Moreover, most research activities have been related to cash crops rather than food crops.

Unless special efforts are made to bring about significant breakthroughs in biochemical and mechanical technology that will be profitable to small farmers, productivity in the food sector cannot increase substantially. These small farmers constitute an overwhelming majority of the agricultural population in most African countries.

**Institutional Weaknesses and Poor Basic Rural Infrastructure**

Institutional weaknesses with unfavourable effects on food and agricultural production can be found in areas such as manpower development, agricultural research and extension, local institutions and land tenure.

The lack of skilled manpower is reflected by the fact that a number of African countries will experience shortages of professional manpower in the coming years, and more will experience major shortages of technical intermediate manpower. Many Sub-Saharan countries seem to have given more support to the training of high-level professionals than to those who are working closely with farmers. This has resulted in a severe shortage of trained managers, accountants and other skilled workers required to run co-operatives and other local and national farmer organisations.
The shortage of skilled manpower in the agricultural sector also should be understood as being partly the result of past colonial educational policies, which tended to favour educational systems to train lawyers, general economists, history and geography experts, rather than agricultural scientists. For example, in the 1960s, there was no agricultural training institution at the university level in all of Franco-phone West Africa.

Agricultural research has not been as successful in the food-crop sub-sector, as it has been in the cash crop sub-sector. Traditional technologies cannot be expected to provide the increased output necessary to keep pace with a rapidly growing population. Research resources have been concentrated on export crops, while research on food crops has lacked the funds it needs to develop profitable technological packages for small farmers. The performance of national research centres has been generally weak. This state of affairs is due to a number of constraints, including lack of experienced research managers, insufficient number of researchers, inadequate funding and poor identification of farmers' problems. Many technologies that are good merely on purely physical terms were developed outside the farmers' "real" environment. As a result, these technologies turned out to be socially or economically acceptable. The nature of traditional farming has not been thoroughly studied nor understood adequately, and the adaptive research that is needed to suit prevailing farming systems has been neglected.

Few high-yielding technologies are available for arid and semi-arid rainfed agriculture in areas experiencing growing population pressures and for other marginal areas such as inland swamps. International Agricultural research centres have tended to concentrate on the more favourable zones, or have failed to take local concerns into account. National research institutions have had inadequate resources and no
clearly formulated research strategies. Research systems have relied heavily on technological transfer and have neglected local acceptability criteria (palatability, taste, colour, texture, etc. As regards training of researchers, it has tended to be too academic and theoretical, with many students going through graduate and postgraduate training with little experience.

Extension, which is a key link between the farmer and research, has appeared, at times, to be a weak component of the system. Moreover current extension services, like research, have tended to concentrate efforts on export crops rather than food crops, and often small farmers (who in many countries, are primarily women, constituting up to 80% of agricultural workers in West Africa) are forgotten in the process. It is important to note that in many countries, governments find it difficult to finance extension services and have had to rely on external to support extension services. Furthermore, existing extension practices are essentially "top-down" in nature. Only a few countries have developed techniques that help farmers organise themselves, to make effective use of their resources and become self-reliant in the process.

Unfavourable policies have hampered the development of local institutions and the active participation of the people in the activities that affect their lives. Projects that are supposed to increase incomes and improve living standards of rural populations are often designed and implemented without involving the very people the projects are supposed to benefit, neither at the planning stage nor at the implementation stage. The formulation of coherent national policies that would enhance local initiative in various development activities at the local level is badly lacking. Most governments have failed to establish institutional and decentralised administrative structures that are necessary to foster local participation in the developmental process. Government
agencies and state owned corporations have tended to exercise technical and organisational controls that are too tight, frustrating local initiative and responsibility. In critical areas, such as price policy, marketing, credit and land tenure, local action did not receive adequate support from the central government bureaucracy and, as a result, has failed to achieve stated objectives.11

Most Sub-Saharan governments have not aggressively pursued policies that would promote village-level organisations to defend the interests of producers. But such local-level institutions could serve as intermediaries between central government offices and individual farmers in the provision of a number of vital services necessary for increasing food and agricultural production. National non-governmental organisations have been quite effective in areas such as credit, distribution of inputs, building of village-level storage facilities, keeping food security stocks, etc.

Basic rural physical infrastructure, such as an effective year round road network and seasonal feeder roads to ensure that food surpluses can find their way out of producing areas into consuming areas and for inputs to be delivered on time, is an essential component of agricultural development and food security. Weak transport systems contribute to high distribution costs and irregular input deliveries. Transport systems in many countries built with grants and loans from international financial institutions have deteriorated in recent years, as the shortage of foreign exchange has limited supply of necessary fuel, spare parts and raw materials for road and transport equipment maintenance.12

12 Ibid.
**Aggravating Factors**

Among factors contributing to aggravating the food crises are:

1. a high population growth rate;
2. environmental degradation, drought and desertification;
3. slow rate of arable land development;
4. political instability, wars and civil disturbances; and
5. an unfavourable international economic environment and heavy debt burden.

**High Population Growth Rate and Rapid Urbanisation**

There is considerable debate about whether or not the rate of growth of population in Africa is one of the fundamental causes of Africa's food crises or just one aggravating factor amongst others. Views range from overly Malthusian to those who dismiss the issue altogether as unimportant. Still, many simply believe that the problem is serious enough that it deserves serious attention on the part of governments, which should include the population issue in socio-economic development programmes and policies.

The preoccupation with population in Africa is not so much about absolute numbers or density, but rather the rate at which the population is increasing that is cause of concern. The growth rate at about 3% a year, is the highest in the world and still increasing. Recent analysis show that the population growth rate per year in Africa was 2.1% in the mid-1950s, 2.7% in the late 1970s and 3% in the late 1980s. Sub-Saharan Africa's population was growing at the rate of 2.7 percent per year in the mid
1990s. At this rate, the population would double in just 25 years. The Sub-Saharan population is growing faster than that of any other region in the world because of the vast gap between birth rates and death rates. Death rates in Sub-Saharan Africa fell significantly in the past decades, although they are still high by world standards. At the same time, birth rates remained high and population surged as more people survived to reproduce. Rapid population growth can only aggravate the food security situation by straining heavily available per capita food supplies, while causing increasing damage to the environment. At the same time arable land is being degraded, as fallow periods shorten and little fertiliser is used to maintain soil fertility.

Rapid urbanisation and rural-to-urban migration has added another dimension to the precarious food security situation in Sub-Saharan Africa. Population growth has been about three times as rapid in urban areas as it has in rural areas for Sub-Saharan Africa. Migration, out of the rural sector to the urban sector, has resulted in labour shortages in the agricultural sector, a paradox at a time of high population growth. Furthermore, as those who stayed in the rural areas cannot produce enough to meet the demand of the ever-increasing urban population, food imports have risen sharply. This is reflected in the proportion of imported cereals in total quantity of marketed cereals, which averaged 62% in the Sudan-Sahel and 48% in coastal West Africa during 1979-81. In addition to aggravating the balance of payments problem, the changing consumption patterns of urban consumers, with wheat and rice accounting for a higher share of total cereals consumed, pose serious problems in terms of socio-political implications of trying to reverse these trends.

14 Tapsoba, n. 3, p. 13.
Environment Degradation, Drought and Desertification

Increasing population and livestock densities have been a continuing threat to the delicate balance between people and land. In Sub-Saharan Africa as population increases, marginal land is being farmed and fallow periods are being reduced. Clearing land for cultivation without proper soil management practices and land and water conservation measures has accelerated land degradation by erosion and loss of fertility.

While forests provide fuel wood, construction materials and other industrial products, in addition to protecting the environment, they are being depleted at an alarming rate. The destruction is a cause for concern. Overgrazing by animals has also taken its toll by destroying grazing land and range-land. Recent recurring droughts have contributed to the degradation of the environment by speeding up desertification, mostly in areas with high population densities, fragile land and low rainfall.

Slow Rate of Arable Land Development

In Africa, a major decline in the rate of land development occurred between the 1960s and 1970s. In some cases, the reason for this decline was that quality land was running out, such as in Togo where by 1980, 90 percent of its potential arable land was being used. Other reasons include poor incentives that discouraged producers from expanding area under cultivation, shortage of labour because of migration to urban areas or to other countries and general disaffection with agriculture on the part of the younger generation. Drought and the general decline in rainfall constitute other factors that have affected land development unfavourably, as prospects of low yields and bad harvests associated with bad weather have deterred farmers from planting on more land.
Political Instability, Wars and Civil Disturbance

While agricultural development must be viewed as a long-term process, many African governments have short-term objectives because they are mainly concerned with short-term measures that would ensure support from the most politically influential groups. Tax proceeds levied on export crops, instead of being ploughed back into the sector, are used to cater for the needs of the powerful minority, namely urban populations who are the most vocal and constitute, therefore, a potential threat to the Sub-Saharan governments. Scarce resources are not being used to meet basic productive requirements for the silent majority (i.e., rural populations). It is well known that riots have occurred in urban areas, not in rural areas, when prices of imported cheap food consumed by urban people are increased to cope with balance of payment disequilibria, or to allow a competitive edge for domestically produced food.

Wars between countries and internal civil unrest have also aggravated the food security situation. Physical infrastructure has been destroyed, resources have been diverted to purchase weapons, farmers have left their land by thousands and refugee camps are swelling, while food production has dropped.

Unfavourable International Economic Environment and Growing Indebtedness

The following three external unfavourable developments have contributed to aggravating the food crises:

1. falling commodity prices in the export sector, coupled with
2. burgeoning foreign debt and
3. dwindling financial resource flows.

Since 1980, as a result of the 1980-83 worldwide recession, world commodity prices have fallen more sharply and for a longer period than they have for several decades. By 1985, the terms of the trade of primary commodity exporters declined to their lowest point since 1957. Many Sub-Saharan countries have suffered more than other countries in other regions because the fall in prices was coupled with a decline in export volumes in 1981 and 1982, and stagnant volumes in 1983. While the deterioration in terms of trade during 1981-93 was about 6% for Africa as a whole, it was worse for Sub-Saharan Africa (18%). As exports declined so did foreign exchange earnings. This obviously led to drastic cutbacks on imports, including imports of agricultural inputs. Between 1980 and 1985, Sahelian countries experienced net losses in agricultural exports of 14.6%, and coastal west Africa, 5.9%. But in 1986, coastal West Africa recovered with net gains of 13.2%, while Sahelian countries still had a net loss of 6.2%.\(^\text{16}\) In the midst of falling commodity prices, and the concomitant decline in foreign exchange earnings, the debt burden has become increasing difficult to cope with. For example, between 1970 and 1983, Nigeria and Cote d'Ivoire total debt increased more then twenty fold. The Cote d'Ivoire used over 30% of total export earnings to service its debt in 1983, Ghana 20.9%, Nigeria 19.5%, and Nigeria 18.6%.\(^\text{17}\)

The rate of increase of external resources flows to agriculture in Africa has slowed down. The majority of the poorest countries in Africa did not receive any increases in multilateral concessional funds in 1986. During 1980-85 multilateral and bilateral assistance contributed roughly equally to official concessional and non-concessional flows. While there was an increase in overall multilateral commitments to agriculture in 1986-87 compared with the early 1980s, this was achieved mostly through non-

\(^{16}\) Ibid., p.16.  
\(^{17}\) Ibid.
concessional flows. The proportion of concessional commitments fell by a third between 1980-81 and 1986-87.

**Nature of Food Shortages**

Starvation is a widely known fact as far as Sub-Saharan Africa is concerned, thanks to the coverage given by television news, papers, and magazines. But in sub-Saharan Africa itself, where actual famine is the exception, widespread concern over growing food deficits have moved the issue in to centre stage. "Population growth, droughts, crop shortfalls, accelerating food import costs along with foreign exchange problems and the rising debt crises have exacerbated the problem". And outside, especially in the western capitalist nations, the dramatised news worthiness of starving and disabled people has stimulated increased aid from both public and private sources. "Suffering sells, but the most ubiquitous, more mundane problem of developing food self sufficiency is the truly pressing issue." 19

Only a few years ago, it was possible to characterise policy debates about short run growth in food production in Sub-Saharan Africa as an emerging issue where all means were acceptable to increase the aggregate supply of food, provided it was done as quickly. Policy debates about long-run issues at the time concerned relative merits of strategies based in getting prices right as against greater emphasis on increased government expenditure in agriculture. Fortunately, "better rains and policy changes have substantially alleviated the aggregate food supply situation in most of Africa since then." Also, the "prices right"

19 Ibid.
faction has come to "understand the importance of cutting production costs as a necessary part of improving incentives to farmers."20

With significant exceptions the good rains from the mid 1980s have provided some respite, but long term vulnerability remains and solutions still elude us. Indeed, if a workable solution failed to emerge for a long period, donor fatigue may set in and a consequent turning from the issue to other less intractable ones of third world development may occur. As Ronald Cohen points out that "part of the insolubility lies in the overconfidence of the intellectual and experts whose pet theories were tried out among the hard and poorly understood realities of African contexts."21 Much of what has been offered so far in way of solutions has been logical, well intentioned, often persuasive and for the most part insufficient to the task of getting African Agriculture moving. Possibly this is the result of the great faith westerners place in technology. Unfortunately technology is only one of the factors, albeit a major one, among many others that facilitate and constraint adequate and increased for supply on the continent. But theories about how such factors operate, which ones to give more attention to, or how best to implement the required changes, have not always been, and are still not agreed upon.

This has in no way deterred outsiders from giving advise, offering panaceas or in extreme cases threatening doom and bloody revolution, unless their guidelines were made the basis of current rural development policies. Nevertheless, expect for a few ideologically led systems most of the policies emerged from a combination of local conditions and the waxing and waning of particular theories of development that dominated the policies of outside donors.

21 Cohen., n. 2.
It is widely accepted that one of the most important factors for Africa's declining food production is the colonial and post colonial emphasis on urban as opposed to and often at the expense of rural development. Most revenues from the government controlled marketing of cash export crops were used by both colonial regimes and their successors to pay for government itself. The bulk of the remainder was "then siphoned in to hoped for growth of a modern industrialised sector."22 In Africa the attractiveness of urban amenities and incomes, the wide appeal of western style education that brought school leavers in to the migrant stream and the misguided notion that rural people were underemployed soon accelerated urban migration. Theorists suggested that this could provide cheap labour for the initial takeoff to import substitution. On the other hand food supplies were judged to be adequate and would continue to be so well in to the future.

In addition to this, the post war period saw a dramatic rise in prices for African export crops. This rise provided "cash for farmers and revenues for governments that used marketing boards to mobilise the increased revenues depriving the farmers of much of the gain."23 At the same time one often loses sight of the fact that the late 1950s were the wettest rainfall periods of the century. In Sub-Saharan Africa, just before most of the colonial states acquired independence, both food supplies and cash crops were booming. This factor can primarily be held responsible for Sub-Saharan Africa's "false start".

Certainly the lack of attention given to food crops and the colonial as well as post colonial pressures placed on farmers to grow for export to finance urban development inhibited the intensification of agriculture. "In some places exports did indeed replace food or at least did so for some

22 Ibid., p.3.
23 Ibid., p.4.
sections of the farm populations". In others it simply stimulated farmers to expand the amount of land under cultivation. Even though the production figures for Sub-Saharan Africa climbed steadily in most part, per capita production began to decline by the 1960s and has continued to do so since. "Add to this the severe droughts of the early 1970s and 1980s and a rising urban taste for imported wheat and rice, along with cheap maize when needed, and a groundwork for the food problem was laid."25

Now, when we look back on this period it is easy to point out the mistakes with the knowledge of hindsight. Population growth was underestimated or not even considered seriously, and rapid urbanisation was believed to be a means of stimulating the productivity of the underemployed farm sector. At the same time, this was calculated to increase the incomes of those remaining in the rural areas (through technology transfers, expanded urban markets and decreased numbers in agriculture), which would feed back to create a rural market for the newly developed African manufacturers.

Unfortunately, this logical sequence of linkages was overgeneralized with regard to the actual facts of rural life. Labour was and still is, not in oversupply in the rural areas of Sub-Saharan Africa. Farmers are, often as not, engaged in non-farm as well as farm occupations, especially in those regions of short rainy seasons and labour is always a scarce resource. "Furthermore the lack of a tradition of fully commercialised agriculture meant that serious inattention was given over to the process of establishing and expanding a stable agricultural supply system for both urban and rural demand. Instead, food grain staples were

25 Cohen., n. 3.
judged to be adequate while in real world stagnated peasant agriculture was being called upon to satisfy an accelerating demand. And this oversight was occurring within societies where economic, political, and social integration, especially that between rural and urban sectors, was at the very least, problematic.”\(^{26}\)

In the 1960s and 1970s the idea of development was progressively influenced by notions which emphasised on welfare and a concentrated attention on the equitable distribution of benefits as the basis criteria for assessing the success or failure of development policy.

In geographical terms, this explanation implies that getting agriculture moving has little to do with incentives. Incentives are assumed to occur in sufficient degree but require emancipation if farmers are to benefit from, and contribute their share to the overall development process. The farmer is constrained by chains of power vastly beyond his reach that bind him to low levels of production and productivity. Development, therefore means not just growth but the unfettering of the peasant from political and economic relations that presently give the benefits of production to the few at the cost of the many in a national and international system of exploitative relations developed over many generations. This, according to Lofchie and Cummins, explains “why the export sector has been favoured historically over food production in terms of inputs, technology, research, extension, credits and transportation, leaving peasant food production underdeveloped both in terms of achieving its growth potential and getting the food to urban markets”.\(^{27}\)

The neglect of peasant production is caused by the structure of power and economics relation. “This structure forces the African

\(^{26}\) Ibid.

economies to work for the benefits of the core capitalist nations, with the co-operation of local elite whose own power derives from their capacity to maintain the exploitative relations of the global system.”

This over-generalised view or theory that Cohen calls the “emancipatory theory” believes:

- that development is determined primarily by power differences, which support the systems of inequality in wealth and access to the means by which wealth is created;
- that the benefits of economy and society are finite, with the result that differential rewards signal some gain and some loss as far as resource utilisation is concerned nationally and internationally;
- that consequently there is need for transformation of the structure of power to enable the weak to benefit;
- that there is need to regulate the development process, otherwise the inequalities already present will be exacerbated because of the differential powers of the actors.

The preposition of this over-generalised theory that treats vastly different countries and situations as examples of its sweeping propositions is now widely acknowledged. But, there is little scope if any of withdrawing from what the adherents of this theory refer to as “capitalist penetration”. It is an accepted fact that Sub-Saharan African, indeed all third world, countries cannot exit the system of international trade without paying a heavy price. Technology, finance, education, medicines, and a host of other imported goods are now a part and parcel of the national culture of all the world’s people. Some of the inequality can be alleviated and the penetration checked but withdrawal “is a cure, which may harm

28 Cohen, n.4, p. 5.
29 Ibid., p.4.
the patient rather than free them from poverty and the dynamics sustaining their underdevelopment."  

This theory encompasses all pervasive involvement of the state in combating underdevelopment and mobilising resources for the benefit of the agrarian masses. But the capacity of African government and specific regimes to combat forces of national and international exploitation itself is suspect in the light of real world experience. Whether they are dedicated to such goals or not, these governments have until now faced such extraordinary powerful forces generates inefficiency and incapacity to carry out programs that many observers see as a major problem. Given the "lack of internal social, economic and political integration, the links to the state are those primarily of interest groups that use it as an arena to compete for jobs and favoured access to resources."  

In Sub-Saharan Africa what has emerged after several decades of intense research is a picture of extraordinary complexity in which a highly differentiated rural population behaves quite rationally to maximise subsistence needs and to obtain cash, both through on-farms as well as off-farm activities of farm household members. Even more importantly the degree to which this population is integrated into a national system of food and production and distribution is also quite various and in no sense assured, or even fully understood. What is clear, however, is that there is no unified single category of African peasant who as a class is forced to act against its own interests because of domination by forces beyond its own control.

30 Lofchie., n.2, pp. 6-7.
31 Cohen., n.5, p. 6.
Approach to Food Shortages

As the focus shifted to increasing food supplies through the intensification of farm production, two opposite positions have emerged. There is a lack of agreement between them, highlighting research frontiers and the weight to be given to differing assumptions and policies (claimed as solutions to the problem). More concretely research has revealed that a number of general factors - technology, labour, land, marketing, credit e.t.c. - interact with contextual determinants such as household composition, inheritance patterns, local kinship and ritual obligation, and community and political relations".32 In other words, both formal and subsistence ingredients are widely recognised as significant components of the game.

Amidst this lack of any specific or locally applicable understanding, theory and discussion tilt towards one or two polar positions. The two has been identified as the unimodal model and the other a multimodal one. Both deal directly with the problem of increasing food production; both claim a capacity to predict progress and improvements in rural development and food security; and each contradicts the other on crucial assumptions and relationships.

The unimodal model rests squarely on the fact that the bulk of Africa's food production comes from smallholder production. Assuming little or no difference in productivity, the model suggests that a very small increase in production from the many millions of small farmers will enhance the food supply significantly. "It is unlikely that more than five percent of current food production comes from large farms. In that sense, a 3% growth of productivity of small-holders is equal to a 60% growth of

productivity in large farms.” By contrast for the proportionately few large farms, which constitute only 30% of the land, to make a dent in the food supply requires very large increases per farm unit if supply is to come anywhere near meeting demand.

Based on this logic, the model constructs a series of propositions. Small farmers are said to be more productive than large farmers because they work their land more intensively. At the same time their numbers are growing in absolute terms even though their proportion of the work force is falling. Thus according to this model, directing scarce resources solely at this group will provide Sub-Saharan Africa with the largest possible production increases. The model also asserts that African farmland is increasingly becoming scarce. Arguably, then, as larger, less productive farms expand, the more productive smallholders will be squeezed in to a diminishing proportion of the land. This hastens urban migration increases unemployment and it lowers production below its potential because of the lower productivity of the larger farms. On the other hand, investing in rural amenities—schools, roads, rural electrification—slows down migration to the cities, which along with farm development programs and better produce prices helps the most productive farmers to expand the food supply.

This model builds on comparable experiences in Asia and Latin America. It is also attractively humane and decent in its belief that satisfying Africa’s food needs can be accomplished only by the equitable distribution of resources to the poorest elements of the population.

In the unyielding world of policy making, implementation and the rising tide of empirical research things are somewhat different. There are great risks in depending on advice that argues for single solutions to

multilateral mercurial problems whose determinants are often context
determined, that shift over time, and that are not clearly understood
even for post and present conditions, let alone future ones. According to
Ijere, "it is not safe or wise for Africans to accept guidance that asserts
that one solution is more likely than another to solve the food deficit
problem, only if all others are abjured". It takes only a very small
increase in productivity for African smallholders to upgrade production
evermously. However, investments in terms of public facilities such as
roads, storage facilities, and the vast increase in agricultural services
necessary to implement the model at mass level are, to say the least
daunting. On the other hand, the reverse is true if the job involves
servicing a relatively small number of larger commercialised farm units.
Delgado is of the view that, "production strategies that maintain large
farm output through subsidies would require twenty times more resources
if applied to smallholders".

With so many unknowns and the questionable nature of many of
the assumptions of the unimodal model, government regulated and
bureaucratically implemented policies are being questioned by African
intellectuals and policy makers alike. It is, therefore, less risky to vary
development strategies and allow real world outcomes to influence
future options.

This brings us to the multimodal approach. Proponents assert that
generalised solutions are "neither efficient nor rational in a world of both
invariant (situationally neutral) relationships as well as variant (context
dependent) ones". The problem with the unimodal model is the
variation among actual contexts. Empirical research has tended to make

34 M. O. Ijere, "The SocioEconomic Aspects of Food and Nutrition Policy for Nigeria", in Atinmo, T., and
Akinwulaje, L., ed., Nutrition and Food Policy in Nigeria. (Nigeria: National Institute for Policy and
35 Delgado, n.2.
36 Cohen., n. 6, p. 10.
scholars back away from the tenacity of the modal and tilt instead towards different starting conditions, based on variant as well as invariant relationships. This means that specific policies cannot be gauged easily because of previously unknown or otherwise unknown context determinants, until they are actually observed and measured overtime. Realistically thin, the conditions of rural development in Sub-Saharan Africa require that solutions be applied in real-world places so that relations between invariant and variant factors are exposed and made available as influences on policy formation, implementation and change.

At present there are at least “two very important constants”, that effect food production along with rural development and “four domains whose variant relationships require locally applicable solutions. African food production is significantly conditioned by two constant (that is presently invariant) features, population dynamics and soft government, along with a number of variant determinants including land scarcity, productivity, differentiation and commercialisation”.

In order to understand these factors hang together to form the ingredients of the multimodal approach, it is necessary to look at each of them individually.

**Population Dynamics**

Both the unimodal and the multimodal approaches assume that population growth rates in Sub-Saharan Africa will continue to be amongst the world’s highest for at least the next several decades. This means that the majority of Sub-Saharan Africa’s people will continue to live in rural areas for the foreseeable future, even though their proportion is a falling one. The unimodal suggests that using resources to aid only this group enhances food supply and slows down urban migration. But

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37 Ibid., p. 11.
contrary to this logic, urban migration is tied closely to more rather than less rural development. So far research has shown that "the greater the investment in rural amenities, especially in schools, the greater is the migration towards cities". This trend has remained the same even till recently

One important factor that is left out of this discussion is the attitude of the farmers themselves. Hardly any of the vast literature on the Sub-Saharan Africa peasants deals with the relative status of rural smallholder farmers to other forms of income generation. According to a survey conducted by Ronald Cohen in Nigeria in 1985, 47% of the heads questioned did not want their sons to become farmers. This is not surprisingly correlated with whether or not the sons are attending school. Thus, aiding peasant farmers and investing in better living conditions in rural areas may mean abetting the forces leading to urban migration.

It has been observed that as with other countries in Sub-Saharan countries too, the wealthier a country is in per capita terms, the fewer the farmers. "Thus in those countries with the poorest incomes (GNP<$250 per capita) agricultural workers made up 36% of the entire population (at the end of the 1970s), while the figure was 25% for countries with GNP over $500 per capita for the same time period. At the same time, and alarmingly, there is no indication that productivity per worker increases to fill the gap as the proportion of agricultural workers falls".

Logically, therefore, urbanisation should stimulate agricultural growth and development. The fact that this has not happened yet in Africa means that the transition is in its initial stages. Urban bias, it can be assumed, then is not completely wrongheaded; it simply ignores the

39 Cohen, n.6, p. 12.  
obvious conclusion that agricultural shortfalls caused by the process have to be countered. The farm sector must therefore, produce an accelerating surplus if homegrown supplies have to meet demand.

**Soft Government**

The assumption that centralised governments can set policies for the equitable distribution of scarce resources, plan and build the infrastructures, and then carry out the vast allocations necessary to turn unimodal theories in to concrete achievements, has not brought about expected results. Unfortunately, the record in the real world is a sorry one. Waste, corruption, inefficiency, and bad planning are deeply ingrained Leitmotifs of resource allocations and development efforts when government takes the lead and carries project to actual ground level competition. To say that it is solely the fault of specific regimes, or of an elite class who serve outside global interests, misses the point. The very nature of state-run distribution and bureaucratic capacities in Africa leads inevitably to the conclusion that allocations are consistently distorted by market forces that impinge on government agencies.

African state agencies contain almost uncontrollable tendencies for those in charge of allocative decisions to use their discretionary powers to place personal and group membership goals ahead of a generalised national policy. If we add the low level of accountability, sparse monitoring, and the notion of government as an arena in which ethnic and regional interest groups compete through bureaucratic representatives for scarce resources, then the difficulty the Sub-Saharan countries face in trying to implement policies and bring about an equitable distribution of resources and development is understandable. Under such difficult conditions the interposition of the state to combat forces of national and international exploitation introduces new, or
maintains farmer, sources of inequity, even when equitable allocation and results are clearly declared goals.

**Land**

There is not a uniform scarcity of land in Sub-Saharan Africa. There are large areas where up to one half of the arable land is unused. There are at the same time pockets of very high density and indeed of overuse. Assuming the unavailability of land to be a constant and increasingly widespread problem eliminates one of the most viable options for expanding food supplies—that of augmenting the amount of land under cultivation as rapidly as possible. There are large areas in Sub-Saharan Africa where up to one half of the arable land is unused. FAO country tables put the supply of land at approximately three to four times the area cultivated—800 million hectares compared to 185 million in use.41

Overall there is little doubt that Africa contains enough land to feed its present population and more, if rural areas were developed on a sustainable basis, such that, the land would grow the requisite food and the food were distributed to the needy people. Projections comparing land-use and population growth support the conclusion that the continent's unused land is sufficient to feed one and half times the estimated population of the continent for the year 2000, with relatively low levels of inputs. This assumes that the present growth rate of population will remain the same till the end of this century. However, on the other hand, the country figures show an uneven distribution. Land scarce regions like Lesotho, Kenya, Burundi, Rwanda, Mauritania and Somalia may be forced in to adopting policies that must rely heavily on increased yields per hectare.

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Technology and resettlement are important factors. Many fertile Riverine areas for example, the area north of the Benue River in Nigeria is so disease ridden that human settlements are either impossible or are already depopulated by River blindness. Cleaning up such areas as the Niger Riverine Plains in Burkina Faso has allowed for resettlement and has resulted as well in sudden increases in arable land, agricultural production and significant jumps in grain stores for resettled farmers.

Theories and policies that are based on increasing land scarcity in Sub-Saharan Africa overlook the great variety of situations and the vast size of the continent.

**Productivity**

Past research has come to the conclusion that Sub-Saharan farmers are capable of producing much more than they do at present. Given some form of water management and control along with scientifically proven inputs competently administered, it is clear the risks and instability associated with African food production can be lowered enormously, quite independently of land scarcity.

However, in Sub-Saharan Africa, transferring and creating more productive technology is not just a matter of capital, research and good intentions. The most important constraint on successful outcomes is the dependency of technology on the organisational relationships that are utilised to implement technological innovations in real world settings. These organisational relationships are matters of traditions, of choice and of social theories. "Possibly the most controversial facet of this problem is the widely used generalisation that productivity is inversely related to farm
size. If true, then small farms in Africa are better on grounds of yield alone.”

There are, however, bottlenecks associated with implementation of programs. When programs are aimed specifically at smallholders, most newly available inputs—fertilisers and other chemical treatments, as well as HYVs and visits by extension workers—are distributed in greater proportion to the larger, better-off peasant farms. Under these conditions, it is inevitable that the larger peasant farms will continue to receive an unequal share of new technologies aimed at increased productivity.

Small farm efficiency assumes that labour resources are spread more thinly in the larger units. However, research indicates that the farm size is correlated with increased use of hired labour and with large households. "It is not true as is so commonly assumed that small farms are apt to benefit from having more family members per acre on which to call. It is the rich farmers who benefit from the efficiency of the larger groups of farm workers, both family and hired." 43

Small farms have fewer resources to use for inputs and they obtain less energy returns per unit of effort than do larger ones. Even more important is the belief that the use of household members is cheaper than the hired labour, so that small farmers who hire less labour can produce more cheaply. However, most African farmers, especially in high-risk low rainfall areas, have non-farm occupations. Thus using household labour may be more, not less expensive when off farm work is more lucrative than the cost of hired labour. "In Botswana almost all of the rural households have at least one wage-employed member during the

annual cycle of work, and two thirds of rural farm families receive 40 percent of their farm incomes from non-farming activities".44

Differentiation
Sub-Saharan smallholder farmers differ in household size, wealth use of hired labour, farm size, off farm occupation for one or more household members, use of fertilisers, mechanisation and farm credits to name only the most obvious. At the extreme lower end the poorest farmers live farthest from roads, know less about prices and tend to live away from the market centres.

It is not correct to say that smallholders are similar enough so that equitable distribution and across the board benefits result from smallholder programs. No matter how well intentioned special programs, such as fertiliser’s distribution maybe, differences among smallholders increase once efforts aimed specifically at them are put in to effect. Thus, after only a few years of small holder integrated rural development, there may be an increased differentiation, with some farmers becoming larger and more successful, others changing very little and different shades of growth in between. Researchers are now suggesting that "Factor variations (land, labour and Capital) among peasant households are significant enough to warrant distinctively different packages of input aid if results are to be generally more successful among smallholders".45 In West Africa, researchers report that as programs reach out to smallholders, “the lower 40 percent in terms of income are steadily

decreasing their share of arable land, while the top 10 percent have been steadily increasing their share.\textsuperscript{46}

In Sub-Saharan Africa, in the most general terms we can venture to say that increased farm production and productivity per farm unit are a function of increased farm size and of agricultural variation among existing farms. Differentiation presents problems in rural social welfare and the distribution of benefits, possibly even of impoverishment, especially in land scarce areas. Attempts to intervene may provide some assistance, but ultimate relief lies in the creation of non-agricultural jobs to absorb those who benefit the least by accelerated rural development.

\textbf{Commercialisation.}

There is a definite need to expand the indigenous African food sales if Sub-Saharan Africa has to fulfil its own food needs. The unimodal model argues for an emancipatory and egalitarian solution in which Africa's small hold farmers can be transformed as a class or category into surplus producers. But, the peasant small farmer is not homogenous category. Not only are farmers different in terms of land and labour, but they vary enormously in food self sufficiency and crop sales. It is the larger farms from which most of the food sales originate. According to Cohen, surveys from all sections of the continent indicate that approximately 70 to 80 percent of smallholder food sales come from the largest quarter to one third of the peasant farms.\textsuperscript{47} On the other hand, it is customary for the small and medium sized smallholders to keep food crops for home consumption. "In Zambia the large majority of smallholders retain staple food crops for home consumption. In Eastern province 93 percent of all maize sales (1981-82) came from the small majority of larger farms (over

\textsuperscript{46}J.W. Mellor, C. Delgado., and M. Blackie., ed., \textit{Accelerating Food Production in Sub-Saharan Africa.} (Baltimore: The John Hopkins Press. 1987), p.280
\textsuperscript{47}Ibid., Cohen, p. 19.
seven hectares). Almost all of the small holders with 2.5 tons of maize or less sold no crop”.48

Even when the smallholders accept innovations that result in increased yields, there is no assurance that they will decide to produce surplus food for the market. McMillan reports that "although resettlement in Burkina Faso to well watered farming areas increased crop yields per household significantly, crop sales were dissatisfactorily low”.49 Therefore, there is no assurance that the small less commercialised farmers will commit themselves to food marketing and the needs of the natural economy given the unsatisfied demand of local economies. In effect, this means that even with better rainfall, better water resource management or in response to other effective government programs to raise smallholder production, there is no guarantee that the small farmers would sell their crops.

However, if the poorest and the larger, more successful smallholders do most of the selling off of food crops, then raising production for the poorest should enhance market supplies. This follows the assumption that this lowest income group continues to sell off food crops. On the other hand it is just as logical to argue that with better incomes they will join the slightly better off farmers who grow food first and foremost for subsistence rather than market.

Now if prices are considered, there is evidence from many parts of Sub-Saharan Africa that once food prices appreciate to a higher level than export crops, surplus producers switch to food crop marketing. On the other hand, shortages in other factors of production tend to suppress

this effect. Price increase has also stimulated the interest of the urban rich to set up farms and acquire land. This further quickens rural differentiation. Therefore, better prices and the policy packages that governments can implement to increase farm incomes serve to differentiate farming even further.

In the long run, satisfying Sub-Saharan food needs depends on the development of a specialised, commercial agriculture. The ways to do this may differ under different circumstances and in different regions. Unimodel solutions are based on a hoped for increase in the food supply through regulated distribution of benefits to the widest numbers of smallholder farmers. However, the realities of soft governments make regulation a problem rather than a part of the solution. Specialisation means a differentiated agricultural population. The future points towards a majority of Sub-Saharan farmers remaining subsistence farmers. The rich and urban people looking to diversify their investments through farming will continue to take advantage of development programs and economic conditions by moving into specialised commercial production. Therefore, the need of the times is to look for an approach that appreciates and deals with these variations in particular contexts. This seems to be a pragmatic approach to increase food supply sufficiently on one hand and on the other hand raise the standard of living of those who cannot or will not find a way to be included in these changes or developmental programs.

Conclusion

Sub-Saharan Africa is the only region in the world where per capita food production has declined over the past two decades. Natural calamities, inappropriate policies that have lead to the bias and neglect against the food and agricultural sector, lack of technological change, institutional weaknesses and poor basic rural infrastructure have mainly been responsible for food shortages.

Moreover, high Population Growth (signified by high birth rates and decreasing death rates, drought, desertification, slow rate of arable land development, Political instability and civil strife, and growing indebtedness has further aggravated the food shortages. Certainly the lack of attention given to food crops and the colonial as well as post colonial pressures placed on farmers to grow for export to finance urban development inhibited the intensification of agriculture and has lead to food shortages as well.

As the focus shifted to increasing food supplies through the intensification of farm production, two opposite positions have emerged. Both deal directly with the problem of increasing food production; both claim a capacity to predict progress and improvements in rural development and food security; and each contradicts the other on crucial assumptions and relationships.

The unimodal model rests squarely on the fact that the bulk of Africa's food production comes from smallholder production. Assuming little or no difference in productivity, the model suggests that a very small increase in production from the many millions of small farmers will enhance the food supply significantly.
The unimodal suggests that using resources to aid only this group enhances food supply and slows down urban migration. However, the Proponents of the multimodal approach assert that generalised solutions are neither efficient nor rational in a world of both invariant relationships as well as variant (context dependent) ones. Empirical research has tended to make scholars back away from the tenacity of the modal and tilt instead towards different starting conditions, based on variant as well as invariant relationships. This means that specific policies cannot be gauged easily because of previously unknown or otherwise unknown context determinants, until they are actually observed and measured overtime. Realistically then, the conditions of rural development in Sub-Saharan Africa require that solutions be applied in real-world places so that relations between invariant and variant factors are exposed and made available as influences on policy formation, implementation and change.

Another notable point is that theories and policies that are based on increasing land scarcity in Sub-Saharan Africa overlook the great variety of situations and the vast size of the continent. But it has been amply pointed out that there is not a uniform scarcity of land in Sub-Saharan Africa. There are large areas in Sub-Saharan Africa where up to one half of the arable land is unused. Overall there is little doubt that Africa contains enough land to feed its present population and more, if rural areas were developed on a sustainable basis, such that, the land would grow the requisite food and the food were distributed to the needy people.

Small farm efficiency assumes that labour resources are spread more thinly in the larger units. However, research indicates that the farm size is correlated with increased use of hired labour and with large households. Sub-Saharan smallholder farmers differ in household size,
wealth, use of hired labour, farm size, off farm occupation for one or more household members, use of fertilisers, mechanisation and farm credits to name only the most obvious. Therefore, in Sub-Saharan Africa, in the most general terms we can venture to say that increased farm production and productivity per farm unit are a function of increased farm size and of agricultural variation among existing farms.

There is a definite need to expand the indigenous African food sales if Sub-Saharan Africa has to fulfil its own food needs. Not only are farmers different in terms of land and labour, but they vary enormously in food self-sufficiency and crop sales. From our earlier discussion it is deduced that it is the larger farms from which most of the food sales originate. In Sub-Saharan Africa the large majority of smallholders retain staple food crops for home consumption. Now if prices are considered, there is evidence from many parts of Sub-Saharan Africa that once food prices appreciate to a higher level than export crops, surplus producers switch to food crop marketing. Price increase has also stimulated the interest of the urban rich to set up farms and acquire land. In the long run, satisfying Sub-Saharan food needs depends on the development of a specialised, commercial agriculture, which would produce surplus food for the market.

The growth of surplus marketable food has its many advantages, which are dealt with in detail in the following chapters. This surplus food would ensure low rates and decreased imports. This will not only save on precious foreign exchange, which could be utilised for sustainable development of agriculture and the economy. This would also help in making food available to the most vulnerable populations at all times.