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Strategic Perspectives

Positioning African Agriculture for Food for the First Decade of the Twenty-First Century*

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ABSTRACT

The paper traces the historical emergence of subsistence farming as stemming from the colonial period when a more commercial agriculture was replaced by an export-oriented agricultural trade in introduced crops, such as coffee and tea, whose production and marketing was restricted to colonial farmers. The paper goes on to lay down policy and R&D guidelines for the consistent implementation of a modernized African science-led sustainable agriculture, which takes into contextual consideration the vital need for food and nutritional security. In this regard, industry provides a crucial link to this modernization.

Key Words: African agriculture, sustainable agriculture, subsistence farming, agricultural

trade, commercialisation, agricultural exports, agro-business, food security, poverty, industrial production

INTRODUCTION

Throughout his rich, varied, and cross-disciplinary professional career spanning four decades in agronomy, plant protection, plant breeding, genetic conservation, and economic botany, Bede Okigbo has harped on the need to build onto the persisting foundation of indigenous African sustainable farming systems, the new science-led agricultural technologies as a way of assuring a more productive, culture-sensitive, yet sustainable modern African agriculture. He, again, played this tune in his Inaugural Lecture for the honorific series, the *IITA Distinguished African Agricultural Scientific Lecture Series*, dedicated to him. This is what he stated:

It is essential that in the development of sustainable agricultural production in Africa [,] the existing systems, including the home garden, regulated ley farming, coconut/pasture agro-forestry system, the Asian wet rice system, the commercial tree crop plantations, the banana /coffee production system, and the *fadama* or valley bottom production systems, are studied and understood. Based on such studies, the various underlying processes that made them sustainable can be identified and improved upon through research (page 19).

This advice is not only prudent; it is at the very core of what scientific agriculture in Africa should have done at the very beginning of the colonial era, in the last decade of the nineteenth century. This was when colonial overlordship also ushered into the continent a European-type, temperate-climate oriented scientific agriculture. Until very recently and less than a decade ago, agricultural scientists in Africa behaved more as political propagandists than as scientists, whose research endeavours should always proceed from the known to the unknown.

An illustrative example of what is meant by this is the prevailing view among agricultural scientists, including rural sociologists and agricultural economists, that African agriculture has always been of the subsistence type. Keen evidence from oral literature and from the recorded observations of European travellers in the late nineteenth century - rather than their interpretations of what they saw - and subsequent historical writings, clearly reveal otherwise. the African phenomenon of subsistence farming, just as with subsistence artisan production, is a new happening in Africa; its history spans just about 70 years.

THE LATE COMING OF THE PHENOMENON OF SUBSISTENCE PRODUCTION

Prior to the onset of colonial suzerainty, African agriculture was very much part of the community's livelihood and trade was an integral part of it. Let us take a brief look at the

commercialization of African traditional agriculture in the nineteenth century in what is now called "Kenya", and select just two or three elements for elaboration:

1. First, the Akamba community in the present-day Eastern Province regularly organized caravans to the Indian Ocean's outlets, loaded with a variety of agricultural and animal products (comprising grains, tobacco, ivory and gum-arabic), while driving herds of cattle, sheep, and goats for sale at markets in Malindi and Mombasa, within a regional network that seemed to have been flourishing for at least two centuries. This network encompassed also the Kikuyu, Embu and Tharaka community in Central Province, and Maasai in Rift Valley Province. The food commodities included beans, yams, arrowroot, vegetables and maize as well as more industrial goods (such as hides and skins, beewax, honey and beer).
2. Second, the Somali were involved in a monetized agricultural trade, exchanging cattle, sheep, and goats for fabricated products (such as iron implements), fruits and grain with neighbouring peoples or with general traders at the coastal marketplace.
3. Third, the Wanyika community was very much involved in the production and sale of bananas, based on quality standards, which commanded price differentials in accordance with grading.

Thus, as the historian Talbott (1992) avers:²

Portraying Africans as an amorphous mass of subsistence cultivators producing solely for their own consumption[,] ignores the fact that numerous contemporary observers have indicated a significant commercialization evident in the Kenya agricultural economy during the initial implementation of British imperialism (page 75).

Indeed, we are told that the coastal people of Kenya engaged in agricultural trade within the coastal area as well as internationally. Trade transactions in traditional agriculture and capital accumulation were practices long in existence before the colonial system overtook this ancient tradition. For instance, African-produced *sim sim* dominated agricultural exports in the early years of the twentieth century. This accounted for 20% of the total value of commodity exports from Kenya, while hides and skins made up 43% of the total value of exports. there were no major food imports, other than rice and sugar. dramatic changes in African agriculture took place as a result of the construction of the Mombasa-Kisumu railway line, and the associated imposition of European settler agriculture, as the future economic basis for the Colony. Tremendous research funds were devoted to it, making maize, wheat, barley and coffee, produced solely by the settlers, the key agricultural trade commodities. By the end of World War I, exports of hides and skins from African traders had dropped in value to a mere 4 - 10% and *sim sim* had virtually disappeared (at 1.3% of the total export value) as a significant element of agricultural

exports by the end of the 1920s. in contrast to this, by 1921, coffee production, which was made the exclusive preserve of European farmers until just before the attainment of political independence in 1963, came to command 53.9% of the total value of agricultural exports². It is no wonder, then, that the vast majority of African crop husbandmen and livestock keepers were reduced to mere "subsistence production" and "subsistence trading", and that they altogether opted out of commercial agriculture and into doing other things, besides agro-business.

It is not surprising, then, that subsequent foreign agricultural economists working in Africa, such as A. M. Cock at the Joint FAO/ECA Division in Addis Ababa, were to consider that Africa was, in the 1960s, ripe for "an accelerated transition from subsistence to market agriculture," not realizing that African farming households had been there before. Cock stated candidly in this vein:³

... it is quite clear that powerful stimulation may be needed to bring the largely uneducated, often undernourished and perhaps disinterested rural peoples of Africa into a more commercial frame of mind ... all this will require a much more modern and sophisticated agriculture than exists in most African countries today (page 243).

This was the aberrant, but pervasive view among the colonial administrators, the agricultural economists, and the development policy analysts in the period after 1910. It neglected to take into its purview the bigger historical process of production, food security and agricultural trade that had been manifestly at work for centuries in Kenya and in the larger region of Eastern Africa as a whole.

With the onset of British colonial rule nearly a century ago, three processes began to be at work. the most important was to generate cash income to support the colonial establishment, by way of various forms of taxation and pressures on the African population ⁴. These included:

1. the introduction of "hut tax" and "poll tax", to be paid for in cash
2. commercial crops (e.g., coffee, tea, wheat, barley, and dairy products) which could have provided money for the taxes but were, by law, denied Africans and
3. the most productive land to be reserved for the exclusive use of European settlers
4. Able-bodied men were forcibly recruited to work in the settlers' plantations (of coffee, tea, and sugar cane). The net result could be predictable⁴:

African farmers saw difficulties, uncertainties, and dangers in redirecting their household resources into new forms of production. Questions of labour supply, food security (including nutrition and taste), and economic returns became immediate and involved the intimate relations among members of the household Africans most readily saw colonial

agricultural programmes as arrangements for the capture of their wealth and their labour. They also saw these programmes, placing African households in jeopardy because of periodic famine (pages 71-72).

The essence of this historical process is that the subsistence orientation we see today was never innate in the African political economy. This latter-day phenomenon of subsistence production was a response to the poor terms of livelihoods in the prevailing colonial conditions and policies in the entire region of Eastern, Southern and Central Africa. Many Africans, therefore, saw their future not in farming and the closely associated agro-business, but in other pursuits. The young men were deserting the land and leaving it to old people, women, and young children⁴. When they eventually returned to the village, they did not go back to farming: they saw their livelihoods as in small-business investments - shops, restaurants, vehicular transportation, and bars. Thus, Cohen and Atieno-Odhiambo (1989) were able to caustically conclude⁴. "the colonial state could not capture the productive efforts of the African household according to plan and its efforts to do so often led to the weakening of [agricultural] production."

The irony of the situation is that when the new leaders of post-colonial Africa took charge of policy-formulation and decision-making, they did not re-establish the indigenous integrated livelihood of farming, food security, agro-business and non-farming artisan industrial activity.

The challenge for African leaders today is to re-position Africa firmly and unmistakably into the mainstream of competitive economic activity - including agricultural production, food processing, food security mechanisms, agro-industry, agro-business and futures commodity trading. Without the horrendous price distortions and marketing aberrations of the 1970s and 1980s, the African smallholder⁴ (cocoa, coffee, tea, pyrethrum, palm-oil, cashewnut, maize) and horticultural farmers, would have surely and sustainably moved out of the colonially imposed subsistence category, to a competitive stakeholder in the national and regional economy. The Machakos District farmers in Kenya had done it by the 1920s and 1930s, wholeheartedly venturing into market gardening of vegetables and fruits to supply Nairobi, Mombasa and other urban centres. The Machakos farmers did much so that their market position was feared by the European settlers, who set about to erect stiff production and marketing protection measures to stifle this competition⁵. The Ivorian cocoa farmers resoundly emerged from their subsistence condition in the 1970s and 1980s, sliding back to it through the emerging uncompetitive macroeconomic environment. The Zimbabwean maize farmers brought about a green revolution in rainfed maize agriculture, through African farmers empowerment brought about by the immense political leadership of the country. the state became the organizer and risk-taker of this revolution - not the private sector or the donor community:

Zimbabwe's experience highlights the strategic importance of an active government role in

the early stage of African development - i.e., the agrarian stage, because, it is unlikely that private traders will deliver extension research and credit services to smallholders, especially those in remote areas (page 810).

The key target for this prospective agrarian transformation - within the first decade of the new century - are the very impoverished in rural Africa.

THE RURAL IMPOVERISHED

The poor, those with an annual per capita income of about U.S.\$370 or below, now number well over 180 m in sub-Saharan Africa or approximately 45% of its total population at the start of the 1990s. in some of the African States (such as Angola, Ethiopia, Mozambique and Somalia) the level of poverty has reached 60% or more of the population⁶. in 1985 sub-Saharan Africa accounted for 16% of the developing world's poor. it is projected that the sub-Saharan Africa's proportion of the poor would have shot up to 30% by the year 2002, if the projection of annual growth rate of the gross domestic product (GDP) continues at a rather optimistic rate of 3.7%.⁷

Thus, the profoundest pivotal issue at stake in Africa is poverty - of the chronically and newly poor, (arising from the structural adjustment programmes since the 1980s), and those existing within the subsistence economy - *the subsistence farmers, artisans, and petty traders*.

In the face of this drama of the wretched, Africa's standing in world trade, as measured by market share, is steadily declining - from 4.7% in 1980, to 1.9% in 1999, and still on a downward trend. Yet, Africa has failed to diversify its export portfolio through manufacture, as other developing regions (such as in Asia and Latin America) are aggressively doing. there is little diversification as to the destination of Africa's exports, 69% targeted to Africa's traditional markets in the European Union and other OECD countries. in addition, the trade balance is widening by 1993 it had topped US\$12.0 bn⁷. Furthermore, it should not be imagined that poverty is confined to the arid and semi-arid regions of the developing world and to the nomads and pastoralists living there. In Kenya, the three Provinces of Nyanza, Western, and Central, account for 64 - 77% of the rural poor, who are resident in areas of high agricultural potential. The same phenomenon is replicated in India, where the rural poor are concentrated on the eastern Gangetic Plain in Uttar Pradesh, Bihar, Orissa and West Bengal - representing a zone of high agricultural potential. in Bangladesh, the rural poor are largely found on the fertile deltaic zone.⁸

It is apparent then, that there is more to poverty than the mere lack of available natural resources, able-bodied persons or demand for particular products. In a real sense, *the essence of poverty is the lack of a sustaining vision that normally drives a responsive person to accomplish certain landmarks in his overall goal, in order to reach an*

achievable livelihood.

An agrarian rural life, under contemporary conditions in Africa, is hardly a pastoral abode of idyllic charm. With a poor communication and transport infrastructure, few social services for health and welfare, a fractured system of traditional entertainment and leisure, and few opportunities for self-improvement, the young people and other able-bodied persons who reside in the countryside are not necessarily there out of first choice. The constant political reminders that the school drop-outs and left-outs should take up careers in farming and other self-employment outlets in the informal sector, have added to the perception of farming as a last-resort employment sink for those with no better things to do.

Since most of Africa's population lives overwhelmingly in the rural areas, the manifest priority is to make rural occupation become alive, animatedly market-oriented to fulfill the people's needs and to become refreshingly innovative so as to bring out the people's creative abilities and production skills. This new vision, to acquire and nurture an enriched rural life, attracting the best talents in productive livelihoods - natural resource-based livelihoods, rural-based industrial activity, infrastructure building and maintenance in the rural areas, science-based agricultural production, agro-industry, and in agro-business - would totally transform the conventional conception of rural life in contemporary Africa. This willed development "is not merely a journey between tradition (hammered out during the colonial suzerainty) and modernity, it is also a race with leaders and pursuers whose comparative advantage (is) never acquired once and for all", but is pursued perpetually. In this race, science is an imperative. As Salomon states,

science is essential because it offers a method and a process to establish new truths and to challenge accepted truths... because it has come to be intimately linked with technology, which holds the key to the satisfaction of human needs on a large scale.⁹

Agricultural production alone, even when market supported and technologically upgraded, is unlikely to provide the sustained driving power for the social and economic transformation envisaged here. The simple reason is that the real prices for the key agricultural commodities traded in the world market have been showing a steady downward trend over the last 120 years.¹⁰ During the period 1900 - 1990, there was a downward trend of about 0.5% per year for the traded staples, including grains, sugar, meat, and dairy products. the futures markets for these commodities continue to predict a steady decline into the future, while, at the same time, price distortions for the principal tropical products traded in the world markets - cocoa, coffee, tea, bananas, vegetable oils, etc. - are high. This is the result of price and trade policies of the industrialized countries, which have maintained high tariff and excise tax levels against these products.¹⁰ Even with the new liberalized trade regime ushered in by the Uruguay Round accords of the General Agreement on Tariffs and Trade (GATT), which were concluded in December

1993, the world price changes for the tropical agricultural commodities due to reduced tariffs will be small. This is of the order of 0.14 - 2.34%, since the excise taxes (averaging 20% in the European Union for tropical beverages) will continue to be maintained. With the abolition of the preferences established under the ACP - Lome Convention, Africa's share of the world commodity markets will be further eroded by an estimated 30% for natural resource-based products, and 65% for tropical agricultural products.

Consequently, liberalized trade, which is expected to stimulate world trade and economic growth, will not benefit sub-Saharan Africa to any significant extent, because of the latter's overwhelming concentration on basic commodity exports. Moreover, all of these tropical commodities have already been in structural surplus at least since the mid-1970s¹¹. It is absolutely apparent that, for the foreseeable future, agricultural production alone cannot be the principal engine for Africa's economic growth and social development.

Africa must now break away from a century-old paradigm that its ordained route to economic well-being will be accomplished solely through agriculture.

THE NEW PARADIGM FOR AFRICA'S SUSTAINED DEVELOPMENT

What the region should now take, on the eve of the twenty-first century, as its newly designed and constructed paradigm for transforming its current moribund political economy into a vibrant, thrusting, modernizing economy, is a paradigm structured in three parts:

1. natural resource-based industrial production, processing, and competitive marketing in both conventional and non-conventional markets worldwide. The natural resources would include minerals, metals, crude oil, fisheries, wildlife and ecotourism, all being utilized in an ecologically-friendly, energy-conserving, sustainable manner.
2. an innovation-oriented industrial production, packaging and marketing strategy based initially on the biotechnology of tropical, biochemically-active biota, with particular emphasis on the pharmaceutical industry, tropical wood industry and plant-based chemical industry. also develop the aggressively competitive information technologies, particularly in software design, development and application.
3. a market-oriented agricultural production, agro-industrial processing and packaging, and worldwide marketing, concentrating particularly on non-traditional products, such as floriculture, tropical fruits, vegetables and exotic livestock products. In this scenario, *food agriculture will become primarily a niche production line* for competitively supplying the domestic demand for the traditional staples in the form of basic raw commodities as well as in fully

processed forms (of grains, vegetables, meat, fish and dairy products) and not necessarily for export. This is with the exception of those products where Africa can effectively compete even in value-added processed and manufactured products arising from them, such as those from tea, coffee, cocoa and vegetable oils.

In this scenario, food agriculture will occupy a critical economic and social position in Africa's modernization and economic transformation, but, it will not be possible for it to aggrandize solely to itself the primacy of economic empowerment. Food aid is unlikely to be the path to a long-lasting solution to food insecurity. In any case, the volume of this aid is decidedly diminishing, from the fiscal year 1993 to 1996, the international budget for food aid had been cut in half, dropping from a grain volume of 15.2 tons to 7.6m tons in that time period¹². African leaders must therefore, grasp the fact that cyclical hunger and famine is their own responsibility to manage successfully and that cyclical hunger cannot exist side-by-side with sustained economic growth and social development. *The need for a continuously operated food security system must always be part of the core concerns for national security and stability.* Such a strategic framework would encompass the timely production and distribution of the key staples and the assurance of equitable access to the food supplies by way of a nationwide financial provision for timely intervention in anticipation of national food emergencies. it would also involve the implementation at all times of a minimum food reserve for at least 70 days of the year to tide the nation from one harvesting season to the next. If that were to be scrupulously undertaken by all African nations, then the recurrent and cyclical famine chronology, such as has been known to Ethiopia from biblical times (see [Table 1](#)), should become merely history¹³.

Policy planners in Africa and the donor community seem to be excessively reluctant to boldly build up Africa's capacity to industrialize and to map out a prudent, but vigorous programme for industrializing Africa. This does not refer to the classical way through heavy industry, but by way of knowledge-intensive technologies in strategic areas where Africa could have a competitive advantage in the medium to long-term, such as in biotechnology, information technology and solar energy technologies. Indeed, one is impressed by the significant fact that industrialization and market-oriented agriculture often go well together, as has been abundantly shown by the experience of the USA, Canada, Australia and Taiwan. The renowned food economist then at Harvard, Amartya Sen (1988) has said just as much¹⁴:

There is often a noticeable reluctance to consider the promise of industrialization for the future of Africa. Sometimes the reluctance arises from being unduly impressed by the favourable land-population ratio of most African countries compared with, say, Asia. the choice between industry and agriculture has to be influenced by many considerations of costs and benefits, in addition to the availability of land. Climatic conditions themselves are a factor. The opportunity for economic growth that is provided by branching out into industries has been well demonstrated by the historical experience of many different

countries in different parts of the world. Africa cannot ignore these opportunities. The indirect influence of that technological transformation on agricultural productivity itself (including productivity in the food sector) cannot, by any means, be ignored (page 68).

This new phase of African agriculture demands a high level of skills - in assessing traditional markets and creating new ones, managing productively the agricultural cycle and its business and in applying quality technological skills that are prepared in advance to deal with production fluctuations from seasonal droughts to seasonal floods. This market-oriented, science-led agriculture can neither be merely a hobby for the rich and the not-so-rich nor be left as a residuum of subsistence occupation or simply relegated to a task for the unemployed and under-employed. It demands a new perception of a skilled profession, requiring market savvy, modernized production and processing technologies, grafted onto well-proven traditional technologies and indigenous knowledge systems. Add to this scientific research and technological development (R&D) to buttress and expand this knowledge and skills base.

Indeed, what Africa now desperately needs, to make its food agriculture a basic source of national security and stability within Africa, is to establish and nurture a one-stop R&D service that:

1. creates new technological opportunities for tropical agriculture,
2. answers to particular farming and marketing problems,
3. elaborates best farming, agro-industry, and agro-business practices,
4. optimizes resource utilization in a sustainable manner and
5. embraces the entire food cycle - problem-solving R&D, technology demonstration and extension, food processing and packaging, promotion and advertising, profitable salesmanship and effective distribution.

Thus, the principal goal of agricultural R&D in tropical Africa should be to transform food agriculture and other economic facets of the agricultural endeavour into a more reliable, profitable durable livelihood and a key business. A continuing stream of institutional, managerial and technological innovations, must be constantly directed towards removing both old and new obstacles to market competitiveness. It should also be directed at the enhancement of agriculture as an integral part of the tripod supporting national economic and social well-being. In an earlier piece, I summarized this crucial understanding in these words: ¹⁵

Creativity is "thinking up new things", innovation is "doing new things". In any society, there is no shortage of creativity or creative people. what is in short supply is innovators. These scarce people are the ones who have the know-how, energy, daring, and staying power to implement ideas. African agriculture now desperately needs the discoverer of new knowledge to give African tropical agriculture the potential for a new quantum jump,

and the innovators to set in motion the action-oriented follow-through.

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Table 1
A Chronology of Ethiopian Droughts and Famines (from Webb *et al.*, 1995)

Date	Region Affected	"Triggers" and Severity
253-242 B.C	Ethiopia	Deduced from low Nile floods
1066-72	Ethiopia and Egypt	Deduced from low Nile floods and Egyptian famine
1131-45	Ethiopia	Severity unrecorded
1252	Ethiopia	First of seven famine years during next 30 years
1258-59	Ethiopia	Severity unrecorded
1272-75	Ethiopia	Severity unrecorded
1314-44	Ethiopia	Severity unrecorded
1435-36	Ethiopia	Severity unrecorded
1454-68	Ethiopia	Severity unrecorded
1543-62	Hararghe	Attributed to God's anger at murder of Emperor Gelawdeos
1618	Northern Ethiopia	Emperor forced to evacuate headquarters
1772-74	Ethiopia	Widespread human suffering
1796	Northern Ethiopia	Famine triggered by locust invasion
1800	Ethiopia	Large human and livestock death toll
1812-16	Tigray	Severity unrecorded
1826-27	Ethiopia	Failure of cotton and grain crops
1828-29	Shewa	Much human mortality
1831	Tigray	Severity unrecorded
1835-38	Tigray and Eritrea	Drought, cholera epidemic; high human and cattle loss
1864-66	Tigray and Gondar	Heavy human death toll
1876-78	Tigray and Awash Valley	Heavy livestock death toll
1880	Tigray and Gondar	Much loss of livestock
1888-92	Ethiopia	Drought and spread of rinderpest caused loss of nine-tenths of cattle and one-third of human populations
1895-96	Ethiopia	Minor drought; loss of livestock and human lives
1899-1900	Ethiopia	Drought deduced from levels of Lake Turkana and low Nile floods
1913-14	Northern Ethiopia	Lowest Nile floods since 1695; grain prices said to have risen thirtyfold
1920-22	Ethiopia	Moderate drought, similar to 1985-96
1932-34	Ethiopia	Deduced from low level of Lake Turkana in northern Kenya
1953	Tigray and Wollo	Severity unrecorded
1957-58	Tigray and Wollo	Rain failure in 1957; locusts and epidemic in 1958
1962-63	Western Ethiopia	Very severe
1964-66	Tigray and Wollo	Undocumented; said to be worse than in 1973/74
1969	Eritrea	Estimated 1.7 million people suffering food shortage
1971-75	Ethiopia	Sequence of rain failures; estimated 250,000 dead; 50 percent of livestock lost in Tigray and Wollo
1978-79	Southern Ethiopia	Failure of Belg rains
1982	Northern Ethiopia	Late Meher rains
1984-85	Ethiopia	Sequential rain failure; 8 million people affected; estimated 1 million dead; much livestock loss
1987-88	Ethiopia	Drought undocumented severity in peripheral regions
1990-92	Northern, Eastern Ethiopia	Rain failure and regional conflicts; estimated 4 million people and Southwestern suffered food shortage.