

Digging Deeper: Inside Africa's Agricultural, Food and Nutrition Dynamics

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Contributions of Small- and Large-Scale Farms and Foreign and Local Investments to Agricultural Growth

The Nigerian Example

Sheu-Usman Akanbi and Akinyinka Akinyoade

Nigeria's agricultural sector has made a substantial contribution to the country's GDP since 1960. It currently employs about 65% of the population and provides employment for about 90% of the rural population. This chapter offers a synopsis of agricultural growth performance in Nigeria, taking cognizance of the driving factors vis-à-vis small- and large-scale farms, and local and foreign participation in the sector. Analysis shows that, as the major engine of rural growth and livelihood improvement in Nigeria, small-scale agriculture is highly constrained due to a number of factors such as limited technical and financial support, indifference among the youth to farming, inadequate government policies and reliance on other livelihood sources. This leaves the country with few alternatives as large-scale farming is still in an emergent stage. Sustained small-scale, local participation, with aspects foreign investment as a necessary complement, could go a long way to promoting agricultural growth in Nigeria where there is a looming fear of food insecurity in the current oil-driven economy. The implications are relevant for other African countries with an agricultural sector structured in a similar way to Nigeria's.

Introduction

The agricultural sector has contributed significantly to Nigeria's GDP since the 1960s and currently provides employment for about 90% of the rural population. However, the boom-and-bust cycles of crude-oil receipts, with the attendant negative impact on agricultural potential and increasing demands for food to meet the nutritional needs of Nigeria's ever-increasing population, call for a revision of production strategies and capital for agricultural investment (NPC 2013). More specifically, there have been annual calls for economic diversification and renewed attention for the agriculture sector including the need for rural transformation, redistribution, poverty alleviation and socioeconomic development (Stewart 2000). The present approach to boosting agricultural-sector performance revolves around the debate as to whether to promote large-scale farming or to continue with small-scale farming and whether or not to

encourage foreign or local investment in agriculture. This chapter examines the present state of Nigerian agriculture and the factors driving its growth, with special reference to differentials of catalysts, such as small-scale and large-scale farms, and foreign investment inflows in current agricultural performance.

Debates on small-scale versus large-scale farming, as well as the proportion of foreign or local investment that is desirable for the growth of the agricultural sector, have been well documented. Some have argued that changes in farming practices can have negative ecological effects due to increases in fertilizer and pesticide use (Firbank *et al.* 2003), that the trend towards larger farm sizes is bad for the environment¹ and may encourage land grabbing (de Schutter 2011), and that 'small-farm efficiency' allows a cross-sectoral and multi-occupational character for contemporary rural livelihoods and can lead to a reduction in rural poverty in low-income countries (Ellis & Biggs 2001). The opposing view is that small-scale agricultural production equates to 'local eating' (Deusing 1995). However results from empirical research by Gorton & Davidova (2004) on farm efficiency in six Central and East European (CEE) countries show no clear-cut evidence of corporate farms being inherently less efficient in all farming activities than family farms, and 'where significant differences have been found in favour of family farms against the average corporate farm, the best corporate farms still tend to perform as well as the best family farms'. The study also indicated that in countries 'where small family farms are well established and managed continuously by the present farm household, they appear to be less inefficient compared to larger cohorts as against countries where small family farms are a relatively new phenomenon'. The research presented here borrows from this perspective, especially as nearly 90% of the country's rural population are still employed in the agricultural sector. The analysis is based on Kwara State of Nigeria where Shonga farms provide ready case-study sites of small-scale farm holders using local capital side by side and, in certain cases, interwoven with large-scale farm operators. The latter are essentially 'white farmers' who were evicted by the Zimbabwean government but who were invited by Kwara State Government to set up farming operations in Nigeria to boost the region's food production. Field surveys and the existing literature have been used to collect pertinent information to address the small-scale versus large-scale farm holdings and foreign versus local capital conundrum in the quest to boost Nigeria's agricultural performance.

This chapter is structured as follows. The first section considers the current state of agriculture in Nigeria and also discusses small-scale farms, with special

1 Data from ESRC Adoption of Sustainable Agricultural Technologies project at Manchester University in 1996 reported by Rigby & Cáceres (2001).

attention being devoted to the Fadama Project. This is followed by an examination of large-scale farms that focuses on the Shonga Zimbabwean farmers. The subsequent sections discuss the drivers of agricultural growth performance in Nigeria and international perspectives of small-scale versus large-scale farming before presenting some conclusions and policy implications.

The Current State of Nigerian Agriculture

Nigeria is the largest geographical area in the West African sub-region, covering 923,768 km². The country lies entirely within the tropics and has two main vegetation zones: the rain forest and Savannah zones. The agricultural sector is an admixture of small- and large-scale farming and foreign and local participation (Apata *et al.* 2011). In the decade after independence (i.e. the 1960s), the Nigerian economy could reasonably be described as an agricultural economy because agriculture served as its overall engine of growth (Ogen 2003; Alkali 1997). The agricultural sector contributed up to 60% of GDP in the 1960s and, despite Nigerian peasant farmers' reliance on traditional tools and indigenous farming methods, these same farmers produced 70% of the country's exports and 95% of its food needs (Lawal 1997). From the standpoint of occupational distribution and contribution to GDP, agriculture was the leading sector but was neglected during the heyday of the oil boom in the 1970s (Akinyoade *et al.* 2013). Ever since, Nigeria has been suffering from an insufficiency of basic food items that has necessitated resorting to food imports to augment shortfalls in production at home (Olagbaju & Falola 1996).

Nigeria's economic growth has largely been accounted for by resilient agricultural growth. According to the Nigeria Vision 2020 First Implementation Plan for 2010–2013, the agricultural sector contributed 73% to the growth of GDP between 1999 and 2009. Real growth averaged about 7% per annum from 2004 to 2008 but declined to 5% and 4% in 2011 and 2013 respectively. The agricultural sector added value to the tune of 42% to GDP within the same period.

Distribution of Farm Holdings by Size in Nigeria

The size distribution of farm holdings in Nigeria is categorized as follows: small-scale farms (from 0.10 ha to 5.99 ha); medium-scale farms (from 6.0 ha to 9.99 ha); and large-scale farms (bigger than 10 ha) (Apata *et al.* 2011). These

2 Leadership (2013), Editorial, 'Nigeria's Outrageous Food Import Bill', Leadership (Abuja) <http://allafrica.com/stories/201311240262.html> 23 November 2013, accessed June 23, 2014.

classes constituted the following percentages of farm sizes in 2004: 84.5%, 11.3% and 4.2% respectively (Oksana 2005; Antman & McKenzie 2005; Dorward *et al.* 2005). When judged by international standards, where all farms less than 10 ha are classified as small, it is clear that 95.8% of all farm holdings in Nigeria in 2003 (or a total of 46.1 m holdings) were small-scale farms, while the remaining 2.033 m holdings were medium-scale (Apata *et al.* 2011). The farm-size data presented in Table 12.1 show that marginal and small farms constitute about 80% of all the total farm holdings in Nigeria in 2006.

Small-Scale Farms

Most African countries have a rural-driven agricultural system that has left production in the hands of small-scale farmers. These farms are operated under complex systems of cultivation, such as bush fallowing or shifting cultivation, that vary depending on the types of crops and the area's prevailing socio-cultural norms (Ayoola 2001). The above-mentioned system of farming is characterized by the use of basic farm tools, dependency on rain, low levels of inputs and low outputs and incomes, and the farmers often bear the physical and financial brunt. Most of the farm labour is performed by the individual farmer and members of his family. The farming system is therefore not capable of attaining optimization and/or maximization as well as productivities characteristic of modern and scientific systems of farming (Olayide & Heady 1982). According to Brown (2012), smaller rural farmers do not have the capacity to manipulate the supply-and-demand scenario with any degree of sophistication because their

TABLE 12.1 *Farm-size demographics, Nigeria, 2006*

Category	Size (ha)	Average size (ha)	Total holdings (%)	Area (%)	Irrigated area (%)
Marginal farms	< 1.0	23	56	23	0.3
Small farms	1–2	1.42	24	36	2.2
Semi-medium	2–4	2.69	11	21	21.8
Medium	4–10	4.87	06	11	33.7
Large	> 10	13.51	03	9	42.2
All farms		2.25	100	100	100.0

SOURCE: NATIONAL BUREAU OF STATISTICS, ABUJA, NIGERIA (2006); APATA *ET AL.* (2011)

production methods are primarily of a subsistence nature. This evidently prompted the Nigerian government to initiate the World Bank/African Development-assisted Fadama Development Project, a community-based cooperative project that is supported by a subsidized agricultural credit system (World Bank 2003; 2008) and, more recently, the Federal Government of Nigeria's Agricultural Transformation Agenda: The Growth Enhancement Scheme. These two schemes, which were primarily initiated to assist in not only scaling up the farm holdings of the mainly subsistence and small-scale rural farmers in Nigeria but also to enhance their productive capacity, are examined below.

The National Fadama Development Project (Fadama I, II & III)

Fadama is the Hausa word for irrigable land. This is usually a low-lying plain with shallow aquifers along Nigeria's major river systems. Such land is particularly suitable for irrigated production and fishing, and traditionally provided feed and water for livestock (Ingawa *et al.* 2004). *Fadama* also refers to a seasonally flooded area used for farming during the dry season. It is defined as an alluvial lowland area that has been formed by erosion and the depositional actions of nearby rivers and streams (Qureshi 1989). These areas encompass land and water resources that could easily be developed for irrigation agriculture (World Bank 1994). If they spread over a large area, they are often referred to as 'wetlands' (Nkonya *et al.* 2008; Blench & Ingawa 2004) and are considered to have high potential for economic development with appropriate investments in infrastructure, household assets and technical assistance. The realization of this led to the Fadama I and II projects that successfully refined approaches for the improved utilization of such land (World Bank 2003, 2008).

Fadama I was implemented as a pilot between 1993 and 1999 and focused on the cultivation of rice and vegetable crops that were well suited to the country's *fadama* areas. The infrastructural emphasis was on providing tube wells, wash bores, boreholes and pumps for farmers through simple credit arrangements aimed at boosting aggregate crop output (Nkonya *et al.* 2008). Though the project was judged as a success overall, it had a number of shortcomings. It helped producers increase their output but did not provide farmers with processing, storage and marketing facilities (downstream agricultural sector). As a result, much of their output was either not sold at all or sold at low prices due to a supply glut (World Bank 2003). Fadama I also witnessed continuous conflicts between the joint users of the communities' land and water resources. From the lessons learnt, the new all-inclusive Fadama II was set up and subsequently implemented between 2004 and 2009. The target beneficiaries this time included not only the traditionally favoured crop farmers but also pastoralists,

livestock rearers, fish culturists and other fisher folk. The project, which was declared disbursement effective on 27 May 2004, was funded by the World Bank and the African Development Bank to the tune of US\$100 m and US\$30 m respectively (World Bank 2003). Eighteen Nigerian states participated in this phase: twelve were funded by the World Bank and the other six (including Kwara State) were funded by the African Development Bank. Fadama II was also judged a success and even won a World Bank award. This positive outcome subsequently prompted other states to show an interest in the third phase.

Fadama III was initiated in October 2009 to tackle low productivity among Nigeria's smallholder farmers. At US\$250 m, it was the biggest World Bank-funded agricultural project to date, although the Nigerian side was expected to provide counterpart funding to the tune of US\$200 million (World Bank 2008). Like Fadama II, the new project adopted a community-driven development (CDD) approach that included:

- supporting the provision of marketing infrastructure
- empowering stakeholders
- improving mechanisms for conflict resolution
- supporting the establishment of rural non-farm enterprises to avoid food losses
- focusing on the contribution of women; and
- supporting improved management, increased food production and socially inclusive management of resources in the *fadama* areas

The project also employed a culture of participatory local development planning, while laying the basis for private-sector-led community-driven smallholder irrigation and socially inclusive management of the natural-resource base of the *fadama* areas. This thus increased the per capita incomes of *fadama* users, which is consistent with the Millennium Development Goals (World Bank 2008). Fadama III, which is expected to end by 31 March 2014, was implemented in 36 states and also in the Federal Capital Territory (FCT). A maximum of 20 Local Government Areas (LGAs) in each state were approved as project location sites by the respective State Ministries of Agriculture and Natural Resources. From the World Bank-assisted IDA credit of US\$250 m, US\$4,658,600 was loaned to Kwara State. This was the average amount received by each of the participating states.

The beneficiaries of Fadama III were individuals living on less than US\$1 a day and were drawn from: (i) the rural poor engaged in economic activities (farmers, pastoralists, fishermen, nomads, traders, processors, hunters and gatherers as well as other economic interest groups) and (ii) relatively disadvantaged

groups (women, including widows, the handicapped, people living with HIV/AIDS and youth). Project beneficiaries were encouraged to organize themselves into economic interest groups, called Fadama User Groups (FUGs), each having a minimum of 20 members and with benefits accruing to roughly 15 additional household members for each FUG member. The FUGs were also organized into Fadama Community Associations (FCAs) as apex organizations. Fifteen FUGs, on average, constituted an FCA at community level.

At the end of December 2013, a total of 115 FCAs with 1323 FUGs were registered in Kwara State, the equivalent of US\$2,250,209.2 being disbursed to 106 of the FCAs. To date, the project has implemented 1302 subprojects made up of small-scale community-owned infrastructure and productive assets with accompanying capacity building and/or advisory services, including input support. Of these, 93 are on-going while 1209 have been fully completed and 92.9% of the completed subprojects (598 units) are now fully functioning. A total of 997 units of productive assets, with an acquisition value of US\$577,071.42, have been acquired by 1069 FUGs and are been utilized effectively. This has resulted in savings of US\$135,792.18 (23.5%), which is expected to be used for the necessary repairs and/or replacement of productive assets from time to time (Kwara State Fadama Development Project 2013).

Fadama III was implemented by employing an innovative Local Development Planning (LDP) tool and the success of the project was predicated on community-driven development mechanisms. An impact assessment was last done at the project's mid-term stage and the results indicated that the development objectives had been met, with over 75% of the targeted beneficiaries having been reached. This achievement surpassed the project baseline study's expectation of increasing yield per hectare of crop cultivation by at least 20%. A percentage increase of 34% was achieved by the mid-term project evaluation. However, the cumulative impact of this bank-assisted project can better be attested to after the on-going beneficiaries' impact assessment of the project has been released.

Nigeria's Agricultural Transformation Agenda: The Growth Enhancement Scheme (GES)

The Nigerian Minister for Agriculture and Rural Development, Dr Akinwumi Adesina, reached out to Nigerian small-scale farmers with subsidized inputs through the Electronic Wallet System (e-wallet) initiative in 2012 (Adesina 2013). This was set up to allow farmers to obtain seeds and fertilizer using electronic vouchers sent directly to their mobile phones, thus eliminating the need for transactions with middle men. In the first year, the Minister reported that 1.5 m farmers had received their subsidized seeds and fertilizer based on requests made via their mobile phone. The system appeared to generate a market revolution as

it enabled seeds and fertilizer companies to develop their supply chains to reach farmers across the country. To assess the programme, a survey was conducted in Kwara State by the authors of this chapter, with fifty interviews being held with registered farmers in ten of the sixteen local government areas in the state (i.e. five interviews per local government area). The Nigerian government's Growth Enhancement Scheme had some shortcomings as it was revealed that:

- farmers only received two of the six bags of fertilizer required per ha, in comparison with 2010 when they accessed fertilizer directly from the state government and each 'fortunate' farmer had access to six bags of fertilizer per ha
- 35% of the farmers claimed that not all the promised allocations of other inputs were provided
- administrative and logistic issues discouraged 26% of respondents from redeeming the voucher that allowed them to then collect agro-inputs
- communication problems existed between Cellulant (the project's IT consultants), government officials and registered farmers

However, 72% of the farmers interviewed confirmed that the new system was far more efficient and effective than the previous one, which was constrained by corrupt government officials and unscrupulous middlemen. As the GES programme is only in its second year of operation, it may be too early to assess its true contribution to agricultural growth in Nigeria effectively.

Large-Scale Farms

In a bid to address the drift towards a mono-cultural crude-oil economy, the Nigerian government began to encourage the large-scale commercial production of food crops in 1975, having earlier enjoyed a boom in plantation farming. Large-scale cocoa, rubber and oil-palm plantations dominated in southern Nigeria and the Numan, Lafiagi and Sunti sugar factories, driven by the small- and large-scale sugarcane out-grower schemes, were set up in the north. The out-grower scheme was equally boosted by the then newly established Nigerian River Basins Development Authorities and the World Bank-assisted State Agricultural Development Projects in the 1970s and 1980s respectively (Omotesho 1981; Lawal 1997). Between 1979 and 1999, local participation in farming was bolstered by the emergence of large-scale private/corporate farm holdings. Among these were the corporate Guinness farms at Mokwa, the Leventis farm at Ilesha, Northcott at Jalingo, and the Dana farms in Zaria. Folawiyo integrated farms at Ilora, Abiola farms (in various locations), Obasanjo integrated farms at

Abeokuta, Maizube farms at Minna, Nyako and Nasko farms in Adamawa and Niger States respectively were among the privately based, local participation in large-scale farming in Nigeria (FMANR 2010).

In addition, the Nigerian Agricultural and Cooperative Bank (NACB) was established in 1973 to inject oil wealth into the agricultural sector through the provision of credit facilities for agriculture and agro-related businesses (Olagunju 2000). Between 1995 and 1998, the government embarked on reforming the lending policies of the Agricultural Credit Guarantee Scheme (ACGS) to allow easier access to agricultural credit schemes. It also established the Calabar Export Processing Zone (EPZ) and initiated the Enugu, Kaduna, Jos and Lagos EPZs that each specialized in specific food and export crops. In fact, the National Rolling Plan for 1996–1998 assumed that, by the year 2000, Nigeria would be able to feed its own population, have the capacity to process agricultural raw materials for local industries and for export, and have significantly increased the contribution of the agricultural sector to the country's GDP (Lawal 1997). In spite of these efforts, it is worth noting that Nigeria became a net importer of various agricultural products from the mid-1970s onwards (Table 12.2).

Nigeria imported 153,000 metric tons of palm oil at a cost of US\$92 m in 1982 and 55,000 metric tons of cotton valued at US\$92 million (Alkali 1997). Between 1973 and 1980, a total of 7.07 m tons of wheat, 1.62 m tons of rice and 431,000 tons of maize were also imported. The cost of food imports in Nigeria thus rose from approx. US\$80 million in the 1960s to US\$147 million in the 1970s and to about US\$190 million in 1988 (*Ibid.*). Nigeria spent an average of US\$60 m on rice imports annually in the 1990s. The country is still a large food importer and

TABLE 12.2 *Composition of agricultural imports (2009–2011) (in million)*

	2009	2010	2011
Live animals, animal products	156,978.5	190,034.3	293,995.5
Vegetable products	268,641.9	270,774.5	892,422.7
Prepared foodstuffs, beverages, spirits and wine, tobacco	176,927.9	207,717.9	479,901.2

SOURCE: NBS/NPC (2012)

Note: 160 = US\$1.



PHOTO 12.1 Hunter Coetzee's banana and pineapple plantation, Shonga, Kwara State, Nigeria

PHOTO: SHEU-USMAN AKANBI

spent as much as N 356 billion (US\$2.2 bn) on importing parboiled rice, N 217 billion (US\$1.4 bn) on sugar and N 97 billion (US\$0.6 bn) on fish in 2012.²

Shonga 'Zimbabwe' Farmers in Kwara State, Nigeria

Investment in large-scale farming would seem to be gaining importance in Nigeria. With an estimated population of over 170 million inhabitants in mid-2013, which represents 16% of Africa's total population, there is overarching concern about the country's ability to achieve self-sufficiency in food production and source adequate raw materials for its agro-related industries on a sustainable basis (PRB 2013; Oni *et al.* 2009; Nkonya *et al.* 2010; Eboh 2011). It was perhaps the realization of this fact that spurred the government of Kwara State in Nigeria's middle belt to initiate a number of programmes geared at improving the state's level of agricultural production. Notable among these interventions in the agricultural sector was the large-scale commercial Shonga farm venture (Photo 12.1).

In 2003, the State Governor, Dr Bukola Saraki, encouraged some of the 'white' farmers who were being evicted from Zimbabwe to relocate to Shonga in Edu Local Government Area based on a public-private partnership construction with the state government. To ensure effective take-up, the government provided



PHOTO 12.2 *Reid Irvint's dairy farm in Shonga, Kwara State, Nigeria*

PHOTO: SHEU-USMAN AKANBI

incentives such as land, infrastructural facilities and guarantees for bank loans. Each of the initial farmers received a 25-year lease of 1000 ha of land. Although the acquisition of land to establish these large-scale farms met with fierce local resistance at first, particularly from two of the communities (Dumagi and Faigi), the government succeeded in effectively repressing any protest (Mustapha 2011). A total of 1687 ha was divided between the first fifteen Zimbabwe farmers in Nigeria in 2005 for the cultivation of crops ranging from grains like maize, cowpea, soya beans and groundnut to root tubers like cassava.

Of the initial fifteen farmers, seven are still in business today: four in poultry, two in dairy and one in crop farming. Only two indigenous poultry farms (Zarm farm at Erinle and Rear Admiral Afolayan's farm at Osi), alongside the Coga and Thai crop farms at Bode-Saadu and Malete respectively, are among the few farms that could compete with the so-called Kwa-Zimbo farms on scale of production in Kwara State. Recently however, on a visit by one of the authors to the Shonga farms, a government extension agent revealed that six of the crop farmers had left as a result of not being able to secure funding to embark on an effective irrigation system, which had thus limited their capacity to produce year-round and increase the farm's profits.

The local farmers who were evicted from their ancestral land were relocated to new farming areas. They received grants of N 20,000 (US\$130) per ha for land clearing, N 11,000 (US\$70) for land preparation and N 3000 (US\$20) for the procurement of hybrid seeds. In addition, they were given up to 720 bicycles as their communities were a considerable distance from their new farm locations (Mustapha 2011). But one important aspect of the Memorandum of Understanding between the Zimbabwean farmers and the Kwara Government has still not been effected, namely the establishment of the farm that was to be managed by the commercial farmers on behalf of the state. This farm was expected to serve as a training, skills and knowledge transfer centre for local farmers and government extension agents but the state government has never released the funds required for the venture.

The Shonga commercial farms can hardly be described as a model for foreign investment. Based on evidence of expertise on the ground, government spending on the new commercial farmers reveals more of an outflow of local resources. Mustapha (2011) concluded that (Photo 12.2):

... despite the occasional rhetorical reference to local farmers, the central plank of Governor Saraki's ultimate strategy was not the transformation of peasantry, but the creation of a new agrarian technology-savvy class by-passing old peasantry.

It has been difficult to conduct a comparative cost-revenue or cost-benefit analysis between the Zimbabwean farmers and local farmers since 2004. Production statistics have not been made available either by the Zimbabwean farmers or their host, namely Kwara State Government. However, pioneering research work comparing the farming activities of the Shonga farmers and local farmers by Musa *et al.* (2008) offers an insight into farm efficiencies in the first year of crop production. How close a farm is to achieving its maximum potential (output) as defined by the size and a given set of inputs is the measure of its technical efficiency. The study involved 50 local and 10 foreign farms and the foreign farmers were found to have a larger farm size than the domestic farmers. Farm sizes ranged from 0.40–3.60 ha for local farms to between 120 ha and 272 ha for foreign farms in the first year. The small-scale farm holdings of local farmers were the result of a low capital base and a lack of land for larger production areas.

Musa *et al.* (2008) compared the efficiency of crop production in the Shonga farm area and concluded that local farmers competed favourably with the commercial farmers regarding production. This is similar to Gorton & Davidova's (2004) findings in six Central and Eastern European countries. The technical

efficiency estimates for the Shonga farms varied greatly between local farmers, ranging from 18% to 99.7% with a mean technical efficiency of 71%, while those for the commercial farmers ranged between 91% and 100%. The implication is that if local farmers were given the same leverage, they would be able to achieve similar results regarding technical efficiency.

Other Nigerian states, like Lagos, Ebonyi, Rivers, Osun, Kano and Kogi states, have invested considerably in large-scale farming since 2003. Nasarawa State Government also made an effort to host Zimbabwean farmers but the initiative failed because, unlike Kwara State where the government gave priority attention to the foreign farmers, Nasarawa State Government did not facilitate the counterpart financing of their farms and the farmers left (Mustapha 2011) (Photo 12.3).

Drivers of Agricultural Growth Performance

Small-scale units used to account for a substantial share of Nigeria's agricultural production (Apata *et al.* 2011) but since the oil boom in the 1970s, economic growth and the increasing commercialization of agriculture have tipped the balance in favour of productive efficiency and effectiveness from small- to



PHOTO 12.3 *Government officials interacting with Paul Rezhholm on his dairy farm in Shonga, Kwara State*

PHOTO: SHEU-USMAN AKANBI

large-scale farms (Olubiyo & Adewumi 1997). However, since 95.8% of all farm holdings in Nigeria in 2004 were classified as small-scale farms, it can be inferred that these small-scale farms must have contributed significantly to the nation's economic growth (Apata *et al.* 2011). This therefore underpins the need to examine the growth factors and the drivers of growth performance of these small-scale subsistence farms that dominate the agricultural sector of the Nigerian economy.

Growth refers to an increase in the amount of output over time. Agricultural growth is associated with performance in four constituent subsectors: crops, livestock, fisheries and forestry. The crop subsector had, on average, the largest share of growth, followed by the livestock, forestry and fisheries sectors that grew substantially in the oil-boom period post-1974. Currently, the crop subsector contributes up to 85% of the country's agricultural GDP, while livestock contributes about 10%, fisheries around 4% and forestry about 1%. On a comparative basis, the crop sector's share declined up to the early 1980s while the performance of the fisheries sector has steadily improved over the past 50 years. Nevertheless, the crop subsector remains overall the dominant agricultural economy in Nigeria (CBN 2008; 2009).

While the agricultural sector may have contributed significantly to improved growth performance in Nigeria in recent years, its actual contribution appears to fall way short of its potential. The quality of agricultural growth remains questionable considering the low productivity, poor economic competitiveness and weak linkages to other sectors seen (Oni *et al.* 2009; Nkonya *et al.* 2010; Eboh 2011). Moreover, evidence shows that the increases in agricultural output have been due to an expansion in the amount of land under cultivation rather than an increase in productivity (Eboh 2011; UNDP 2009). This growth pattern, which has been mainly driven by land expansion, is not transformative but nominal in nature and merely additive. In contrast, transformative growth occurs when increases in agricultural output are driven by structural and 'real' improvements in production functions and by the economic competitiveness of agricultural value chains. Such a (desirable) growth pattern can be brought about by the improved use of more resource-efficient production inputs (improved seeds, fertilizers, agrochemicals, water) coupled with the right institutional conditions (product market, agricultural extension, agricultural credit) and efficient infrastructure. Growth in agricultural productivity and farm incomes are prerequisites for structural transformation. Increased farm incomes push up the demand for non-farm products and, in turn, stimulate the growth of small and medium enterprises (UNECA 2005; Timmer & Akkus 2008). In Nigeria, where agricultural growth is mainly the result of expansion of farm land area, doubts are being expressed about the longer-term sustainability of current growth records.

A key empirical study that examined agricultural growth in relation to the contributions of small-scale local subsistence farmers is that by Apata *et al.* (2011). It simulated two periods: one before and one after the Structural Adjustment Programme (SAP) era. Their findings reveal that, in the post-SAP period, Nigeria's subsistence agriculture was an important shock absorber against further agricultural output declines. They suggested that subsistence farmers enjoy a greater potential for Total Factor Productivity (TFP) growth through technology transfer. TFP is a way to measure productivity taking into account all factors of production. The linear effect of human capital on TFP is known to provide support to the role of educational attainment in enhancing domestic innovation in agriculture and international trade in promoting technology transfer. It points to the importance of education in facilitating the assimilation of foreign improvements in technology. Increased competitiveness in subsistence agriculture and domestic production do not invariably result in sufficient restructuring that would induce overall growth in Nigeria's agricultural sector. There are now critical constraints to agricultural policy effectiveness that include policy instability and inconsistencies, a narrow base of policy formulation, poor policy implementation and a weak institutional framework for policy coordination.

The Computable General Equilibrium (CGE) model developed along the lines of models as described in Lofgren *et al.* (2002) was adopted by Apata *et al.* (2011) in their study. CGE models are a class of economic models that use current economic data to estimate how an economy might react to changes in policy, technology or other external factors. The Social Accounting Matrix (SAM) was also used to disaggregate primary agricultural production not by product but by farm type, which enabled the study to distinguish institutional and economic characteristics.

Productivity of Small-Scale and Large-Scale Farms

The issue of scale of production and investment in agricultural development is closely connected to the issue of productivity (Rigby & Cáceres 2001). Sustainable intensification for the production of food from the same land area while reducing the environmental impact is important for smallholders and large-scale farming (Godfray *et al.* 2010) and can be achieved by stimulating local agriculture and providing smallholders with increased certainty about demands for their products. Gorton & Davidova (2004) also highlight the need to avoid simplistic comparisons in terms of yields per ha but to account for the differential use of inputs. They note that scale economies are temporary

disequilibrium phenomena that persist only under specific circumstances. Moreover, caution should be taken when using large and small farms' dichotomies in empirical studies: they are arbitrary divisions of an essentially continuous variable (Doran 1985) and are sometimes unclear (Guthman 2004). In other regions of the world too, plot sizes are more important than the size of the farm (Nguyen *et al.* 1996).

In the World Bank Development Report (2008), Collier sets out three priorities that could help overcome the world food crisis: (i) moving to large-scale commercial farms instead of peasant or smallholder farming, (ii) promoting genetically modified organisms; and (iii) reducing (distorting) subsidies for biofuels in the US. However Derek & Alain differ with Collier in the same report on the point of modernizing agriculture and assert that smallholder farming is a proven strategy for accelerating growth and reducing poverty and hunger. They contend that smallholders have shown themselves to be efficient commercial farmers, when given a chance, as can be seen in the Asian Green Revolution experience that has been led by smallholders in countries like India and China since the 1960s. While recognizing that large-scale agriculture has a place in some land-abundant areas of Africa if it is driven by markets rather than subsidies and the rights of current land users are adequately protected, Derek & Alain feel that it would be mistaken to forsake the proven power of smallholders to jumpstart growth and reduce poverty and hunger in Africa and elsewhere (World Bank 2007).

This assertion is true for Nigeria, where the literature has identified the positive role of subsistence agriculture in driving national economic growth. For instance, Apata *et al.* (2011) noted that during the downturn in the economy in the 1980s, Nigeria's subsistence agriculture was an important shock absorber. Although Olubiyo & Adewumi (1997) posited that large-scale farms in Nigeria were more efficient when compared to small-scale farms, Apata *et al.* (2011) proved that whereas a simulated financial crisis should have increased the relative competitiveness of large-scale crop farms versus small-scale farms, this was not the case based on Nigeria's experiences in the 1980s. It was also observed that the agricultural sector responded in a mixed fashion when small-scale and large farms were compared regarding their contributions to growth. And successive government reforms showed that efficiency-enhancing institutional change would benefit both large-scale and small-scale farms.

Local farmers could thus be given the chance to prove their worth compared to large-scale farmers. Promoting smallholder farming is, as Derek & Alain noted, not 'romantic populism' but sound economic and social policy that

reflects empirical evidence. While acknowledging the efforts of the Kwara State Government to develop large-scale commercial farms and the relative success of the Shonga farms, Mustapha (2011) expressed the need for caution based on the selective support given to 'Nigeria-Zimbabwe' farmers and averred that:

However, for both political and livelihood reasons, agricultural policy cannot proceed simply by sweeping aside the peasantry that continues to produce the major bulk of the food supply with little or no official support.

This type of assessment might have served as the premise on which the current Nigerian Minister of Agriculture, Akinwumi Adeshina, based the Growth Enhancing Scheme that is primarily focused on small-scale subsistence Nigerian farmers.

Conclusion and Policy Implications

The majority of Africa's population still live in rural areas and agriculture is their main form of economic livelihood. The analysis in this chapter has highlighted the fundamental role of agriculture in Africa's quest for food security and economic development and pointed to the range and interaction of constraining influences on agricultural growth. Large-scale farming is desirable but is fraught with challenges that have implications for Africa's agricultural growth and performance. Transformative growth in the agricultural sector calls for pragmatic interrelated policy measures. These include the following.

Capacity Building at All Levels

Capacity building at the farm level is crucial for improving crop, soil and water management, enhancing the demand for and use of better and more efficient production inputs, and increasing the financial absorptive capacity of farmers. Tied to farm-level capacity building is the need to reinvent public agricultural-sector institutions for the effective and efficient delivery of financial services, agricultural extension services and farmers' education, provision of agro-inputs, expansion of irrigation, and market development and support.

Providing Subsidized Agro-inputs to Farmers

The provision of agricultural subsidies for fertilizer, farm implements and equipment would boost agricultural production. In addition, the introduction of unique schemes, like the e-wallet system, could facilitate better access to

farm inputs that would enable both small-scale and large-scale farmers to expand their scales of production. In addition, all the existing credit facilities and schemes that have been put in place to assist farmers should be strengthened so that farmers can have better access to soft loans. These should have attractive single-digit interest rates with no stringent conditions attached.

Accessing Foreign Direct Investment: A Necessary Complement

Although sustained small-scale, local participation is advocated, foreign direct investment needs to complement local investments in agricultural development in Sub-Saharan Africa, particularly in Nigeria, where food insecurity may occur in the future in spite of the country's current oil-driven economy. Another important consideration in relation to planning is land reform. Land policies have important implications for the rural poor in that their incomes depend on the extent to which they control land and its output. Given the relatively small size of the large-scale commercial agriculture sector in Nigeria, and indeed in Africa in general, and the country's potential economic growth, investments in land development and a nationally contextual land reform policy are crucial for the sector's growth.

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