The transformation of smallholder agriculture in Africa: lessons in policy experimentation and governance from Nigeria

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The Transformation of Smallholder Agriculture in Africa: Lessons from Policy Experimentation and Governance Regimes of Farm Inputs Market Development in Nigeria

ABSTRACT

This paper seeks to analyse the evidence from policy experimentation in Nigerian agriculture, and to draw the lessons experience therefrom. This was based on participant observation techniques in collecting data and information on the agricultural transformation programme recently implemented, with particular reference to the delivery of price subsidy on fertilizer and seed to small-scale farmers nationwide, using mobile phone technology. Results indicated that the programme failed to improve upon the inherited poor structure, conduct and performance of the farm input market. While the quantity of fertilizer supplied increased by a paltry 27% during the period under study, the volume of subsidy paid increased by a whooping 785%. Thus, the use of mobile phone was not accompanied by any perceptible saving in in public fund deployed for subsidy provision on fertilizer and seed. Like the previous programmes, the use of mobile phone to deliver subsidy to farmers was not corruption free after all. Thus, in the light of the high opportunity costs involved, weighed against the political cost of its removal over the years, it appears that there is no end to corruption in the agricultural sector unless and until the fertilizer subsidy is removed entirely and alternative modes of supporting small-scale farmers is found in Nigeria.

INTRODUCTION

The sustained good performance of Nigeria's agriculture holds the key to food and nutrition security of the country, given the high potential of the sector as an important contributor to GDP (22%), employment (70%) and wealth creation for the rural majority. The realization of this potential depends on a joint policy and governance environment conducive to increased farm productivity and market development for critical commodities and inputs.. In recognition of this fact about a democratic agricultural economy, Nigeria has recently implemented a stylized Agricultural Transformation Agenda (ATA) from 2011 to 2015, as an attempt in policy experimentation under a peculiar governance regime, characterized in terms of programme accountability, participation, inclusiveness, transparency and due process of policy and law governing the sector agricultural markets. Generally, the governance regime for implementing the ATA involved the testing of a null hypothesis about the role of Information Technology (IT) in market development; specifically, that the use of mobile telephone technology to deliver price subsidy on fertilizer and seed had no effect on the efficiency of the farm input market.

During the four-year period of implementing the ATA, a number of policy variables and political economy instruments were deployed for improving the performance of agriculture in Nigeria, different from such variables and instruments deployed in the preceding ten-yea period.2001- mid-2011. Thus, at this stage, the empirical observations made on the implementation of ATA, coupled

with the results obtained therefrom, would offer useful lessons to learn by the current set of public authorities in Nigeria's agriculture, to the benefit of Nigeria and other countries of Africa.

The study is focused on the core component of ATA known as Growth Enhancement Support (GES), which entailed the use of mobile phones in delivering the price subsidy on fertilizer and seed to farmers. The purpose was to eliminate the chain of middlemen and other unintended beneficiaries of the subsidy policy, thereby eliminating corruption in the delivery channel and enhancing the efficiency of the market for these inputs. This contrasted with the subsidy policy during the penultimate governance regime of at least ten years before, which operated under a different scheme known as Market stabilization scheme (MSS).

The objective of this paper is to analyse the empirical evidence from policy experimentation with, and to draw the lessons of policy implementation experience from, Nigeria's ATA with particular reference to the GES, under the governance regime that prevailed at that time. The paper is structured into four main sections. After the introduction, the next section provides a background information required to benchmark the lessons learnt, much against the historical antecedents of the performance of similar intervention policies in Nigeria's agriculture. This is followed by the theoretical framework that illuminates the concept of marketing efficiency, then by a highlight of empirical evidence and data, together with the descriptive analysis performed; next is the presentation of results and discussion, before by the conclusions and recommendations that emerged; and lastly by conclusion and recommendations.

BACKGROUND

Prior to ATA implementation, curbing fertilizer subsidy fraud was a daunting task in Nigeria, as the policy represented a source of illicit incomes accruing to middlemen, pubic officials, traditional rulers, among others who had cornered the benefits of fertilizer subsidy through various means, such as over-invoicing, multiple round tripping and forceful diversion across the border into the neighbouring countries (Ayoola er . The series of previous efforts to block the leakages in the subsidy delivery system were practically ineffective, and they were associated with huge opportunity costs in terms of the huge amounts of public funds involved. The situation had overwhelmed the public authorities including civil servants, who became brisk businessmen in the underground fertilizer economy, thereby worsening their sagged morale as well. According to NAD (2016), Agradually the volume of subsidy bloated beyond tolerable limits and the attendant fiscal burden mounted on the federal budget, while the size of the fertilizer revolving account managed by the federal agriculture ministry became larger than the annual allocation to the whole sector in many years." Even though at different points in time government had considered a gradual or total withdrawal from its involvement in fertilizer market operations particularly importation and distribution of the products, the leakages of subsidy policy benefits through unintended channels persisted without abating"w

In Nigeria, the governance regime for agricultural administration has acquired a strong political economy character from outset, in terms of observed episodes of constitutional crises between the federal government and state government, soon after independence from Britain in 1960. The constitutional crises mostly bordered on the observed episodes of resource control behaviour and boundary maintenance practices exhibited by the two tiers of government, whereby the states

(previously known as regions) on their own part had moved motions in parliament to prevent the federal government from creating a ministry of agriculture at the centre, and the federal government on its own part had insisted on doing so, until the military government made it possible to be done in 1966 after the first coup and countercoup. Thus, from that time on, the development of farm input market, which had previously rested at the regional level, became a shared responsibility of the federal and state governments.

The action of the four regional governments at that time (east, west, north, and mid-west) was based on the status of agriculture in the Nigerian constitution as an item on the residual legislative list, which, going by a special clause in the constitution, made policy actions in that sector of the economy strictly a regional responsibility. The fear of the regional governors in this regard was that the establishment of a federal ministry of agriculture would ultimately enable the federal government to encroach on their thriving agricultural resource and revenue base (Idachaba and Ayoola 1991). Thus, owing to the commodity boom in agriculture at that time, and with the attendant foreign exchange accruals to the regional government, the regional governors had acted in unison to guide their constitutional mandates jealously, in order to exercise a jurisdictional control on matters over agriculture.

The political economy character economy character of Nigeria's agriculture was demonstrated by the correlation between the changes in governance regimes and changes in agricultural policy regimes under different heads of state or presidents in the past. The series of changes in governance regime since independence is follows: from colonial governance to civilian (Tafawa Balewa, 1960); from civilian to military (Aguyi Ironsi1966); from military to military (Yakubu Gowon 1966); from military to military the second time (Muritala Mohammed/Olusegun Obasanjo 1975); from military to civilian the first time (Shehu Shagari, 1979); from civilian to military the second time (Mohamadu Buhari, 1984); from military to military the third time (Ibrahim Babangida, 1985); from military to civilian the second time, but without election (Ernest Shonekan, 1994); from civilian to military the third time (Sani Abacha, 1995); from military to military the fourth time (Abdulsalami Abubakar, 1998); from military to civilian the third time through an election (Olusegun Obasanjo recycled, 1999); from civilian to civilian, same political parties involved (Umaru Yar'Adua/Goodluck Jonathan, 2007); and, the latest, from civilian to civilian, different political parties (Mohamadu Buhari recycled, 2015).

This series of changes in governance regimes correlates nearly perfectly with changes in policy regimes for agricultural administration, in terms of dominant programmes implemented by the successive heads of state or presidents, as follows: Nationally Coordinated Food Production Programme (NAFPP, 1972, Gowon); Operation Feed the Nation (OFN, 1976, Obasanjo); Green Revolution Programme (GRP, 1980, Shagari); Directorate of Food, Roads and Rural Infrastructure (DIFRRI, 1986, Babangida); National Agricultural Land Authority (NALDA, 1990, Babangida); National Programme on Food Security (NPFS, 2000 Obasanjo); National Food Reserve Agency (NFRA, 2004, Yar'Adua); and, lately, the Agricultural Transformation Agenda (ATA, 2011, Jonathan).

The strong correlation suggests a political economy character of Nigeria's agriculture, which accounts for the observed high co-variation of governance regimes with policy regimes, and the eventual instability of the policy environment for agricultural development of the country. The

implication of this is that, the frequent changes in polity and policy have led to frequent changes in the leadership positions in the administration of the agricultural sector as well, together with the attendant organizational instability and high rates of personnel turnover in the political, administrative and professional leadership positions, thereby creating adverse effects on the policy and governance regimes for agriculture. Accordingly, "they end up in particular programmes being given more or less emphasis, redesigned, re-introduced or the implementation pace speeded up or slowed down, so as to reflect the new political, philosophical, ideological and occupational biases of the new people involved" (Ayoola 2002). This accounts for the stop-go trend and patterns of agricultural growth and, hence the lackluster and unimpressive performance of the sector.

The Market Stabilization Scheme (MSS) of the penultimate governance regime involved the provision of 25% subsidy on limited quantities of fertilizer, to operate a barometric price leadership instrument, in order to prevent the frequent escalation of the market price of fertilizer beyond the reach of small scale-farmers. To achieve this the federal government put up an advertisement for tenders for the procurement of fertilizer on an annual basis, to be delivered at designated depots in the states. The price was fixed for all types of the products all over the country, while the states also applied their own subsidy elements for onward distribution to farmers from the depots. Nonetheless, the scheme was grossly abused, leading to huge budget burdens on government without necessarily reaching the farmers as originally intended. It was against this background that ATA was launched in 2012 against the need to eliminate the series of middlemen and other unintended beneficiaries in the delivery channel.

OVERVIEW OF GES AND THEORETICAL FRAMEWORK

The Growth enhancement Support (GES) scheme was aimed at creating a transparent and more effective channel for inputs distribution to small-scale farmers, who produce the bulk of agricultural commodities in the country, but are resource-poor and need government support in form of price subsidy. Under the scheme, a private company was hired to develop a technology platform for transmitting an "e-wallet" to registered farmers through the mobile phone, which entitles him/her to 50% subsidy (25% federal, 25% state) on two bags of regular fertilizer together with 12.5Kg of seed at no extra cost to each farmer.

In the first year (2012), the flag-off of GES in Ekiti state while the other states joined the program subsequently, following the rainfall pattern. In the second year (2013), the flag-off of GES took place in Imo state, though the state government declined to participate, owing to some irregularities observed about the technology, and the farmers in that state enjoyed only the contribution of federal government. The government of Zamfara State also pulled out from the program in the same year. In 2014, all the 36 state governments took part in GES of federal government, except two (Imo and Zamfara states) for the same reason as stated before. A new technology system was introduced in the year called TAB that was funded by DFID through another technology company in UK and implemented in Nigeria by IFDC at two locations, Sokoto State and Federal Capital Territory, Abuja which was able to prevent proxy redemption and was not dependent on the internet network, thereby eliminating two setbacks associated with the e-wallet system, which include to fictitious claims to subsidy payments and the rampant complaints of poor GSM services in remote areas. The e-wallet technology was not implemented at all in 2015, in the advent of a new policy regime when the erstwhile opposition party won the presidential election in the middle of the year and the debt owed under the GES programme overwhelmed the new government.

In theory, net effect of price subsidy on the efficiency of a market organization is generally indeterminate, depending on a number of factors, which include the type of product (whether output or input), tradability (whether importable or exportable), etc. and also on the time horizon (whether

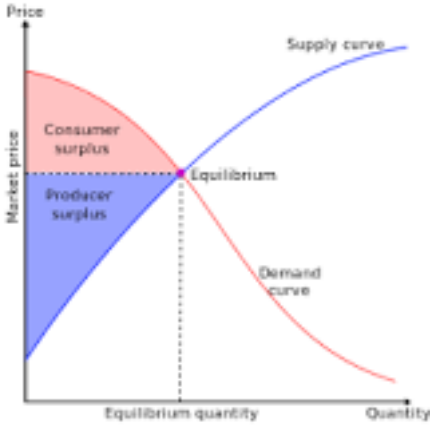
short, medium-term or long-terms). The traditional price theory predicates marketing efficiency on the structure, conduct and performance parameters about particular markets operating in a given governance and policy regime, which includes the agricultural input markets are characterised by derived input demand functions . That is, farmers' demand for fertilizer and improved seeds derive from the production functions of farm outputs that the inputs are used to produce, such as maize, which implies that both the input and output markets operate back-to-back with price relativities that reflect their respective structure, conduct and performance as traditional theory suggests. Generally, farmers are price takers in the output market, which puts them at a disadvantage to receive low prices for their outputs, thereby lacking the adequate purchasing power to acquire the inputs required to undertake production in successive seasons. Based on the actual situation of the farm input market, the justification for price subsidy on fertilizer and seeds is usually premised on the infant industry arguments and the theory of second best

The structure of a farm input market organization concerns the degree of sellers' concentration, product differentiation as well as freedom of entry and exit. However, sellers' concentration seems to be the most critical structural element of fertilizer marketing. In regard to sellers' concentration, the number and size of sellers come under focus. In the case of product differentiation it is only necessary to ensure that the wide variability of the fertilizer products needs a market intelligence operation, which will aim at preventing the exploitation of the farmer's generally low educational level to the advantage of suppliers. The more differentiated the farm input, the greater the possibility to sell the same type of fertilizer at higher prices under different labels. As to freedom of entry to and exist from the pesticide market, the theoretical argument is that it is when such freedom exists that market clearing price can be arrived at. In this condition, excess profit is mopped from the market and the sellers obtain satisfactory incentives to stay in the market. On the demand side, the farmers who can pay for the product obtain supplies.

The conduct of a farm input market pertains to the behaviour of a market as it affects decision making about price, which has a number of possibilities: price dictation which is akin to monopoly, dominant price leadership as a feature of many sellers, barometric price leadership which suggests that a firm has an edge, and collusive price leadership which is a feature of few sellers. Thus few and concentrated as fertilizer market presently is, the possibility exists for firms to engage in overt or collusive pricing. An informal cartel can be formed through which fertilizer prices can be fixed or influenced as is the case under the GES. Under the scheme, as the subsidy discourages aggressive marketing stint, the fertilizer suppliers had colluded together in presenting a common pricing posture in order to obtain the maximum subsidy claim from government.

The performance of a farm input market pertains to how good the job of the fertilizer supply companies are doing, in terms of product capabilities or varieties, technological progress, level of output, and the presence or absence of sharp and unethical practices in the market.

Thus, subsidy provision on farm inputs represents a policy instrument for altering the price relativities in the market in one way or another, which manifests in terms of changes in the market surplus accruing to producers and consumers. This is illustrated in Figure 1 for the fertilizer market under GES, under the assumption of perfect competition, including an operating upward sloping supply curve and a downward sloping demand curve, leading to an equilibrium price. In the short run, the provision of a price subsidy will cause the demand curve to shift to the right and downwards, thereby changing the magnitudes of consumer and producer surpluses under the stipulated production curve. However, the fertilizer market in Nigeria under GES, as also in the policy and governance regime before GES, is akin to monopolistic competition, rather than perfect competition, whereby there are few suppliers (importers and manufacturers), indicating a poor structure that, in turn, begets poor conduct and poor performance as co-correlates of market inefficiency.



EMPIRICAL OBSERVATIONS AND EVIDENCE

The evidence was mostly in terms qualitative empirical information and data collected in real time as implementation of ATA progressed, through participant-observation made and close monitoring efforts under the auspices of Farm & Infrastructure Foundation (FIF). In the first year of GES, a total of N6,605,335,000.00.was spent on input subsidy that year. In the second year (2013) the subsidy payment rose to N29,485,225,000. The total amount subsidy claim on government in 2014 escalated to over N120 billion, which, upon verification came down to N76 billion. There was no GES operation in 2015 as the fertilizer and seed suppliers insisted on government to settle the, bill before the expiration of the last administration in mid-2015.

Table 1: Cost of Fertilizer Subsidy Under Market Stabilization Scheme (MSS, 2001-2010) and Growth Enhancement Scheme (GES, 2011-2015)

Year	**Quantity Supplied to FGN (MT)**	Total expenditure on fertilizer supply to FGN (Cost of quantity supplied) (N)	**Subsidy Cost (N)**	Rate of Subsidy	
				Naira per MT	%
Market Stabilization Scheme (MSS era)					
2001	164,012	4,876,554,998	1,683,000,000	10,261	35
2002	163,700	3,605,662,509	1,485,000,000	9,071.	41
2003	511,841	4,620,418,025	1,188,000,000	2,321	26

2004	560,150	11,024,019,200	2,459,160,000	4,390	22
2005	600,000	8,341,772,360	1,750,432,213	2,917	21
2006	709,000	16,258,649,932	3,507,200,000	4,946	22
2007	990,000	19,422,363,970	4,855,590,994	4,904	25
2008	691,153	57,055,503,960	14,263,875,990	20,637	25
2009	371,062	38,050,847,750	11,000,000,000	10,261	34
2010	586,145	58,429,230,250	22, 327,500,000	38,092	38
2011	NA	NA	NA	NA	NA
Growth Enhancement Support (GES era)					
2012	120,097	13,210,670,000	6,605,335,000	55,000	50
2013	536,095	58,970,450,000	29,485,225,000	55,000	50
2014	1,381,818	152,000,000,000	76,000,000,000	55,000	50

Source: 2001-2010 figures from FFD files and FEPSAN (2004); NA means not available.
*Estimated data based on quantity or subsidy cost figures obtained from the technology platform company

Table 1 presents the direct costs of fertilizer subsidy under the last two schemes of subsidy delivery, namely the MSS and the GES eras. The cost structure excludes the transaction costs or other hidden cost elements during both periods, such as the administrative costs of tendering and awarding fertilizer contracts during the former period and the contract sums of engaging the platform manager or supply chain managers in the latter period.

The Table indicates that, year-on-year, financial cost of subsidy per ton was higher under the GES (2012-2014) than the preceding MSS period (2001-2010), an average of N55, 000/MT and N10, 780/MT respectively. Also, there is a wide disparity on proportionate basis, whereby the increase in absolute cost of subsidy from an average of N4.2 Billion per year during the MSS era to an average of N37.4 Billion during the GES era (785%) was not commensurate with or justified by the increase in quantity supplied, from an average of 534,706 MT during the MSS to an average of 679,337MT during GES era (27%). That is, while the quantity of fertilizer supplied increased by a paltry 27% during GES, the volume of subsidy paid increased by a whooping 785%. Thus, according to these empirical results, the claim that savings in public fund in subsidy provision accompanied GES was not substantiated.

Furthermore, based on field reports, the GES itself was not corruption free after all. There was the issue of buy-back, of the two bags of fertilizer from farmers with a payment of N1000, for resale in the open market at higher prices, representing abnormal profit to agro-dealers in addition to their

claims of subsidy money from government for the same supplies. Also, there were reports of farmers, just ticking the register without collecting the inputs, because the E- wallet technology did not guide against proxy redemption. In other instances, when the farmers did not receive the e-wallet messages and so manual registers were used at redemption centres instead, which process was open to gross abuse and was indeed grossly abused as reports indicated.

Lastly, there was an upsurge of fly-by-night agro-dealers comprising new and old companies formed secretly by or in collusion with government officials, who were registered as emergency fertilizer and seed suppliers. Having infiltrated the transportation and supply system modes of the value chain in this manner, they engaged in fake and adulterated products at inflated contract sums and raised bloated bills based on over-invoicing for government to pay.

CONCLUSION AND RECOMMENDATIONS

The lesson learnt from Nigeria's GES is that the use of IT for delivering subsidy to farmers in Nigeria was not associated with any perceptible increase in the inefficiency of fertilizer and seed market in Nigeria, in terms of the structure, conduct or performance of the market organization. And, based on the cost implications of fertilizer subsidy and the accompanying corrupt practices associated with it, there is no gainsaying the fact that the opportunity cost of fertilizer subsidy is too high to be sustained by the present government; and equally so is the political cost of its removal as well. The opportunity cost ranges from the alternative support for farmers perennially forgone, in terms of rural infrastructure - physical, social and institutional – to rural credits in cash or kind, to market development for farm produce, processing industries for transforming farm produce to higher value added products; and to meeting the right of the people to food through socially responsible agricultural policies,

Thus, in the light of the high opportunity costs involved, weighed against the political cost of its removal over the years, it appears that there is no end to corruption in the agricultural sector unless and until the fertilizer subsidy is removed entirely and alternative modes of supporting small-scale farmers is found in Nigeria. Alternatively, given the governance regime with a high political economy character ascribed to fertilizer, coupled with the high electoral value of fertilizer in Nigeria, subsidy payments may be channeled through producer or suppliers rather than the farmers. This will enable producers and suppliers of fertilizer to develop their own agro-dealer networks for the purpose of distributing inputs to farmers, thereby aggregating supply quantities and improving the structure, conduct and performance of farm input markets in the country.

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