

PRODIGIES OF AGRICULTURAL ECONOMY AND POLICY

An

INAUGURAL LECTURE

By

GBOLAGADE BABALOLA AYOOLA

B.Sc.,(Ife), M.Sc, PhD.(Ibadan)

Professor of Agricultural Economics and Policy



UNIVERSITY OF AGRICULTURE MAKURDI

Inaugural Lecture Series: No. 9

WEDNESDAY, MAY 20, 2009

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PROTOCOL AND SPECIAL RECOGNITION

Vice Chancellor,

Deputy Vice Chancellor,

Registrar and other Principal Officers of the University

Dean of my college - College of Agricultural Economics,

Extension and Management Technology, and other Deans of

Colleges and the Postgraduate School

Professors and other members of Senate,

Head of my Department, Department of Agricultural Economics

and other Heads of Departments,

Members of the Governing Council

Members of the Congregation

The Students Union Government and other Great Makurdians

Members of the press;

Other distinguished guests;

Ladies and gentlemen

PREFACE AND ACKNOWLEDGMENTS

In the knowledge society, it is a cherished academic tradition to invite a professor once in his professional lifetime to deliver an **Inaugural Lecture**; which, for all intents and purposes, is an exercise in intellectual accountability for him to tell the people in public what he professes and to render account of his stewardship in that regard. This, of course, is different from asking the prophet to tell the public what he prophesizes; the difference lying in the weight of theoretical, analytical and empirical evidence required by a professor to do his job before he can be accepted by the public; which is not required from a prophet to be accepted even “in his home town”.

Thus the notion of **Inaugural Lecture** is an aspect of the scientific culture of rigorous inquiry through a sequence of steps that are sacred: problem definition, methodology, analysis and results, discussion and conclusion - which I am today called upon to observe, before I take a bow to step aside from this institution. This is because, as many have known, I have withdrawn my service from the University of Agriculture Makurdi with effect from 30th May 2009, in ten days time. Towards this end, I have been on my terminal leave since July last year. Therefore this lecture doubles both as my inaugural lecture and my valedictory lecture, which makes it unique somewhat.

Given the sanctity of intellect, and the dictum that *the writings of the wise are the only riches which our posterity cannot squander*, an academic is responsibility-bound to account for his stewardship by synthesizing the several researches that have been conducted, the many theories that have been propounded, the various analytical models that have been constructed; and the several results that have been generated and conclusions reached, into a single internally consistent material in writing for the benefit of posterity. This I am set to do in this lecture that you all are about to witness, gathered herein at the University of Agriculture Makurdi, an institution we have helped to build from outset since 1988, and helped to nurture till the end of this month, a period of about unbroken 21 years.

In doing so, I would like to commend the role of the current Vice Chancellor, Professor D. V Uza, for granting me the opportunity to deliver the 9th Inaugural Lecture of the University of Agriculture Makurdi, something I have asked to do since 2004.

Also I would like to acknowledge the roles of a few people who were primarily instrumental to the development of my intellect and who discovered me for academic profession in the first instance, thereby deserving a special recognition at the occasion of my inaugural lecture. The first among them is Dr. Deji Ajani who supervised my undergraduate research and tried hard to make me a plant breeder; but I would rather breed humans rather than plants. Second is Professor Biodun Falusi, who supervised all my postgraduate work in sequence (M. Sc. and PhD); he actually bequeathed to me the genotype for quantitative techniques for addressing agricultural economics problems. Next is Professor Francis Idahaba to whom I am so closely bonded as career staff and associate for many years; specifically he gently leveraged me in the field of agricultural policy research. I use these trios as a point of contact in appreciating my other teachers at different stages here present.

Next, I acknowledge the role of my students in building up my intellectual capacity up to this stage, particularly my postgraduate students; including Patrick Magit and Victor Ehigiator, my M. Sc students whose works ran into trouble when things turned bad for me in my relationship with the university administration some years past, and their theses were rejected by the senate thereby dieing my own death. I also acknowledge the role of my associates and assistants too many to mention their names, who accompanied me in thoughts, in fieldwork and in writing over the years.

Further, I am to acknowledge the role of my colleagues in this university and elsewhere at home and abroad who have collaborated with me in the conduct of studies, and my friends that I hold so dear, as well as the various organizations and agencies in agricultural development and finance that provided me with funds and other resources of their own to carry out my research and development

activities; particularly the Federal Ministry of Agriculture and Water Resources, the Federal Ministry of Commerce and Industry, The World Bank, DFID, FAO, IFDC, IFPRI, to mention a few.

Last but not the least, I like to specially acknowledge the role of my dear wife and soul mate, Bose, who has been so patient with me, and was always there for me notwithstanding my shortcomings and idiosyncrasy.

Above all, I thank God almighty for watching over my pathway in the practice of my profession all along.

ACRONYMS AND ABBREVIATIONS

1. **CARD** - Centre for Agriculture and Rural Development
2. **CFC** - Common Fund for Commodities
3. **DFID -(British)** Department for International Development
4. **ECOWAP** - ECOWAS Agriculture Policy
5. **ECOWAS** - Economic Commission of West African States
6. **FAO** - Food and Agriculture Organization
7. **IFDC** - International Fertiliser Development Centre
(An International Centre for Soil Fertility and
Agricultural Development)
8. **IFPRI** - International Food Policy Research Institute
9. **ISU** - Iowa State University
10. **NFC** - National Fertilizer Centre
11. **NFTC** - National Fertilizer Technical Committee
12. **UAM** - University of Agriculture Makurdi
13. **UNDP** - United Nations Development Programme
14. **UNICEF** - United Nations Children's Fund
15. **UPN** - Unity Party of Nigeria
16. **NPN** - National Party of Nigeria
17. **ADP** - Agricultural Development Project
18. **AFAN** - All Farmers Association of Nigeria

INTRODUCTION

The agricultural economy is generally implicated in the status of a developing country regarding food security, employment generation and wealth creation. This predicates on the difficulty faced by economic managers in the effort to overcome the several obstacles to development of the agricultural sector. In Nigeria, the evidence of sluggish growth of agriculture is not far-fetched, as a sector which its rate of growth has lagged behind the rate of population growth for the majority of years since independence about 50 years ago. Thus it is customary to attribute lack of economic development in general and agricultural development in particular primarily to a number of factors such as inadequate technology, poverty, socio-cultural circumstances, and human capital problems, among others.

Considering the challenges posed by these factors that have constrained development efforts for so many years along with the unsatisfactory performance of agriculture during the period, it is a surprise that Nigeria has carried on without resorting to humanitarian assistance for food and/or other items of survival from the rest of the world, even during the civil war. Thus the agricultural economy behaves like a dog walking on its hind legs; it is done poorly, sometimes by wobbling, sometimes by staggering, sometimes by fumbling, but it is done anyway, and it is surprising how it is possible to be done at all. The small-scale farmers remain the predominant source of food for the teeming population on a permanent basis, even in their circumstances of no access to credit and technology. Even at that, the country gave food aid to a neighboring country at a time, and also sold grains to the World Food Programme at another time in aid of another country in Africa. Only a few agricultural economies in the world are as prodigious as that.

My thesis is that among the class of obstacles posing constraints and challenges to economic development of Nigeria, the policy factor represents the most significant explanatory variable of the development equation, with particular reference to the agricultural economy. This thesis is based on the realization that what has shaped Nigerian agriculture on its growth path more, in both its constant term and its slope parameters during the period under focus, was not so much of the technology generated, adopted or applied; but so much of the actions and inactions of public policy authorities as decision makers and as principal actors in the development process. Therefore the view is held that technology matters, but policy matters the

more; and unless we get the policy environment right for this country “woe unto all” seeking to construct the roadmap to sustainable growth and development of the agricultural economy.

The objective of this lecture is to, first, navigate through my modest effort in theoretical, analytical and empirical research for over two decades, investigating the inner mechanisms of the agricultural economy and situating the emerging issues within the policy context. Towards this end, the balance of this introductory section presents the background of the agricultural economy and policy in Nigeria while the main body of the lecture is structured as follows: Theoretical Proposition; Data Works; Analysis and Results; Discussion; and Summary and Conclusions.

Background to the Agricultural Economy

The cumulative performance of Nigerian agricultural economy reflects its evolution in the background from stage to stage, during the pre-colonial, colonial and postcolonial era of policymaking and administration of the country. These periods coincide with different phases of the world economic order as highlighted below.

Pre-colonial:

The early phase of the world economic order, following the abolition of slave trade, featured mercantile activities of the Europeans along the coast of the Atlantic Ocean, which involved the exchange of salt and other European products for pepper, palm oil and other items from West Africa. Later, prior to 1900, a series of treaties came into force that culminated in the establishment of the British foothold in the area adjoining the ocean, in terms of colonies, protectorates and provinces. The pre-colonial history was inconsequential to the performance of Nigerian agriculture in later years, so we shall cut it short.

Colonial:

The next phase of the world economic order featured economic domination of Nigeria under the British colonial administration from 1900, including the administration of agriculture and formulation of policies. In this regard, a Forest Department was established at Olokemeji near Ibadan in 1900, followed by an Agricultural Department at Moor Plantation, Ibadan in 1910, and by another Agricultural Department at Samaru, near Zaria in 1912. Following the amalgamation of the southern and northern groups of

provinces in 1914, both agricultural departments were subsequently merged together as one Agricultural Department for Nigeria in 1921. After the introduction of the federal constitution in 1954 three Regional Governments emerged each with its own “Ministry of Agriculture and Natural Resources” (MANR), and there was no provision in the constitution for an agricultural ministry at the federal level.

The following notable events took place in the policy environment of agriculture during the colonial period:

1. That from 1921 when a single department of agriculture emerged for the whole country to 1954 when it broke into three regional ministries (33 years), there were only three Directors of agriculture which was equivalent to Minister in the present time, comprising Mr. O.T. Faulkner (1921-1936, fifteen years), Captain J. R. Mackie (1936-1945, nine years) and Mr. A.G. Beatle (1945-1954, nine years); depicting an average length of stay of stay in office of eleven(11) years.
2. That in the aftermath of the Second World War (1945), which necessitated the rehabilitation of the British metropolitan economy, the colonial policy of agricultural development in the country was based on agro-ecological and geographical specialization in five commodity groups, namely: the “Northern Province Pastoral or Livestock Production Area”; the “Northern Province Export Crop (Groundnut and Cotton) Production Area”; the “Middle Belt Food Production Area”; the “South East Export Crop (Palm oil and kernel) Production Area”; the “South West Food and Export (Cocoa and Palm kernel) Production Area”.
3. That the colonial administration launched a “Ten-Year Plan of Development and Welfare” in 1946. The plan, which was prepared by a small Central Development Board consisting of senior colonial government officers, was aimed at strengthening the colonial raw materials base of the British economy, for the exportation of groundnut, soybean, and palm kernel, cocoa, among others. The critical instrument of achieving this was development of physical infrastructure, particularly road network. The objectives, which were not quantified, were pursued through assorted projects. Before the plan came to a premature end in 1954, it was popularly criticized for its non-involvement of native Nigerians, and lack of necessary manpower to

implement it. The implementation of the plan featured the following policies articulated for the agricultural sector:

- (i) Forest Policy 1937 - This was based on the proposal of the Chief Conservator of Forests and a “Forest Conference” held to discuss same. It was directed to solve problems of depreciating forest capital as a result of unregulated exploitation;
- (ii) Forest Policy 1945 - This was a revision of the existing forest policy to reflect the new position of government that (a) “agriculture must take priority over forestry,” (b) “the satisfaction of the need of the people at the lowest possible rates must take precedence over revenue” and (c) “the production of greatest revenue compatible with a sustained yield.”
- (iii) Agricultural Policy 1946 - This was the first all-embracing policy statement directed toward “improvement in the general standard of living of the people by inducing proper use of the resources available to them”. For this purpose, Nigeria was sub-divided into five agricultural areas: as listed earlier.
- (iv) Policy for the Marketing of Oils, Oil Seeds and Cotton 1948 - Specific statement prepared to stabilize post-war prices.
- (v) Forest Policy for Western Region 1952 - This was declared on territorial basis for the trial period of regionalization:
- (vi) Agricultural Policy for the Western Region 1952 - This was also a

territorial policy for Western Region agriculture;

(vii) Policy for Natural Resources of Eastern Region 1953 - A territorial policy for Eastern Region agriculture;

(viii) Western Nigeria Policy of Agriculture and Natural Resources 1959- In which the farm settlement scheme was incorporated;

By and large the most visible instrument of agricultural policy during the colonial period consisted in the establishment of the series of intervention agencies in the agricultural produce market known as Marketing Boards; the first generation of boards were established along single commodity lines with national mandates namely: Cocoa Marketing Board (1947), Palm Produce Marketing Board (1949), Groundnut Marketing Board (1949), Cotton Marketing Board (1949); this was followed by the second generation of boards along multiple commodity lines and regional mandates namely: Western Nigeria Marketing Board (1954), Eastern Nigeria Marketing Board (1954), Northern Nigeria Marketing Board (1959).

Post-colonial:

This phase of the world economic order features trade relations with former colonies such as Nigeria, after independence in 1960. The general directions and terms of international trade between Nigeria on the one hand and Britain and other countries on the other hand reflect the structural formation of the world into industrial economies and agricultural economies, wherein the terms of international trade were permanently in favour of the former and against the latter. Against this background, the notion of globalization emerged to the convenience of industrial economies, which serves to conceal rather than reveal the continued trend of economic domination of agricultural economies by industrial economies.

Further to this arrangement, after independence the Nigerian state inherited an agricultural economy characterized by an immense commodity boom through the activities of the marketing boards; the fourth board in the series came into being when Nigeria became a Republic in 1963 and the Mid-West Region was established; hence the set of four boards in the immediate post-independence period namely Western Nigeria Marketing

Board; Eastern Nigeria Marketing Board, Northern Nigeria Marketing Board, and the Mid-Western Nigeria Marketing Board. Soon the Federal Government made a move to establish a ministry of agriculture at the federal level which the regions opposed vehemently, jealously guarding their constitutional rights whereby there was no provision for such a ministry. Nevertheless, capitalizing on the joint Federal-State responsibility for research as provided on the concurrent legislative list of the constitution, and based on the recommendation of the Food and Agriculture Organization (FAO), the Federal Government circumvented this situation by establishing a pseudo agricultural ministry by name “Federal Ministry of Natural Resources and Research” in 1965, carefully avoiding the word agriculture in the name so as not to offend the political sensibilities of the Regions. However, soon after the coups and counter coups of 1966, and as if it was a major policy issue confronting the new military government under Yakubu Gowon, having suspended the constitution, quickly established a full-fledged Federal Ministry of Agriculture and Natural Resources (FMANR). After the civil war, the Federal Department of Agriculture (FDA) of the ministry was established in 1970 and the National Council on Agriculture came into functional existence.

Thus the current policy template of the agricultural economy comprises the following elements according to official planning horizons. The country has the experience of two perspective plan documents. The first one was prepared by the FAO covering 1965-1980 (FAO 1965 *op cit*) and the second one was prepared under the aegis of a Joint Planning Committee, covering 1973-1985. The third exercise was undertaken by the Federal Agricultural Co-ordinating Unit (FACU) covering the period 1990 to 2005. The highlight of medium term plans in relation to agricultural policy is as follows.

- "First National Development Plan" (1955-1962) gave operational strength to the export-led development policy. This was achieved within the context of a common national planning framework and acceptance of general priorities by all governments, in which the highest was accorded to agriculture, industry and training. However, the plan operated on dependency mentality, including importation of management, funds and other inputs. The implementation of the First Plan was disrupted by the civil war, which broke out in 1967, so development planning was suspended and all available resources were mobilized for the war prosecution, in disregard of the plan.

- “Second National Development Plan" (1970-1974) was launched

specifically to achieve the import substitution policy, with a view to developing the infant industries; including agriculture, and toward substituting imported final goods and services with local ones in the long run. This was consistent with and designed against the need to make reparations after the civil war. Even though the theme of self-reliance was expressed in this plan, its operationalization was difficult owing to the weak state of development of available resources. This plan provided for agriculture on the concurrent legislative list for the first time, given the existence of the Federal Ministry of Agriculture and Natural Resources at that time. During the period, the objective of planning changed with the advent of petro-dollar windfall. Dependency became the underlying theme of economic development, whereby the huge foreign exchange reserves were used to sustain massive importation of goods and services. Under the plan the National Accelerated Food Production Project (NAFPP) was launched in 1970.

○ “Third National Development Plan” (1975-1980) took off at the height of oil boom, which led to the complete relegation of the notion of self-reliance to the background. The statements of agricultural development were made within the context of importation of the inadequacy of the economy, including technology. Under the plan the Integrated Agricultural Development Project (IADP) was launched in 1974, starting with enclave arable crop projects at Funtua in old Kaduna State (Funtua ADP 1974), Gombe in old Bauchi State (Gombe ADP, 1975) and Gusau in old Sokoto State (Gusau ADP, 1975). Other programmes of agricultural development during the plan period were: River Basin Development Authorities (Eleven No. RBDAs, 1976), Operation Feed the Nation (OFN, 1976); and the National Livestock Development Project (NLDP, 1976). Other strategies include Fertilizer Development Programme (Fertilizer Procurement and Distribution Division established in the FDA in 1976, Federal Supperphosphate Fertilizer Company established in 1976); Agricultural Credit Guarantee Scheme (ACGSF, 1977); Nigerian Agricultural and Cooperative Bank (NACB 1977).

○ “Fourth Development Plan” (1981-1985) was launched against the backdrop of a threatening shortage of foreign exchange, thereby necessitating the reappearance of self-reliance as a deliberate policy of development. However this plan was abruptly terminated after the change in government in 1983. During the plan period agricultural development was

anchored on the Green Revolution Programme launched in 1980.

Thereafter, special programmes in recession management came into force including an initial rationing of essential commodities followed by Structural Adjustment Programme (SAP). The implementation of SAP (1986-1990) was premised upon inward-looking policies such as the themes of self-reliance and self-sufficiency as the philosophy of economic development. At the onset of SAP the last set of market intervention agencies in agriculture was abolished and the Agricultural Policy for Nigeria was formulated in 1987. A number of programmes of agricultural development emerged during SAP namely: Directorate of Food Roads and Rural Infrastructures (DFRRI, 1986), Universities of Agriculture (UAs 1988); National Agricultural Insurance Corporation; and National Agricultural Land Development Authority (NALDA, 1988).

Then a series of rolling plans were produced aimed at introducing flexibility simultaneously with implementation (1991-1993, 1992-1994, 1993-1995, etc). A rolling plan is a medium-term plan that is re-produced every year with the time horizon shifted by one year at each point. In this mode, it is possible to incorporate new elements from annual experiences. Save the demand on resources for preparation and monitoring that is heavy, the concept of rolling plan is particularly justified in the Nigerian case, to be able to capture the influence of frequent changes in terms of trade, government and other factors. The case of agriculture is more relevant because of the vagaries of weather conditions, incidence of disease outbreak and other uncontrollable factors.

In the present time the focus has since shifted to vision planning, which give the long-term perspective characteristics of the economy. The first in this series was Vision 2010, which transmuted to NEEDS (National Economic Empowerment and Development Strategy). The preparation of Vision 2020 is presently underway, which is geared towards making the national economy of Nigeria, agricultural economy inclusive, of the top 20 economies of the world in the Year 2020.

Further, articulation of government's response to issues about agricultural development in Nigeria during the period includes a number of official policies, programmes, projects, schemes and actions, as follows- to mention a few

- National Seed Policy (1992),
- New Agricultural Policy Thrust (2003),
- National Policy on Integrated Rural Development (2001).
- National Fertilizer Policy for Nigeria (2006),


- National Special Programme on Food Security (2002),
- Presidential Initiatives on several Commodities (2003),
- National Fadama Development Project (I, II & III)
- Agricultural Development and Marketing Companies,
- National Strategic Food Reserve Programme,
- Fertilizer Stabilization Scheme (2000).
- National Root and Tuber Expansion Programme
- Aize Doubling Programme
- Community-based Agriculture and Rural Development Programme
- Emergency rice response (2008)
- National Food Security Programme (2008)
- 200 Billion Large Scale Agricultural Credit Scheme (2009)
- 240 Billion Commercial Agriculture Programme (2009)


The performance of Nigeria's agricultural economy can be assessed against the background of a country that covers an area of 98.3million ha with a population of about 150 million, largely rural and comprising more than 350 ethnic nationalities. The country measures about 1,200 km from east to west and about 1,050 km from north to south, and is bounded by Cameroon to the east, Chad to the northeast, Niger to the north, Benin to the west, and the Gulf of Guinea on the Atlantic Ocean to the south. It is the most populous country in Africa. Nevertheless less than 10% of total land is under constituted forest reserve while undisturbed forest covers only 1.3%. The country is also blessed with other natural resources notably petroleum and solid mineral deposits. The water resources consist of large bodies of surface water (268 Billion cubic meters), underground water (58 Billion cubic meters) and an extensive coastline, coupled with rainfall in the range of 300-4000 mm pa. These features imply that the country is endowed with vast physical and human resources required for accelerated development of its agricultural economy.

Against this background the recent performance of the agricultural economy reflects in the following situations:

- ✍ GDP - The GDP was USD 359 billion in 2007, which grew at 7% real rate (compared with an average of about 3% in the past decade, and the significant increase to 6.1% in 2004), representing a per capita output of USD 2,660. The recent economic performance was driven by growth in both the oil and non-oil sectors. At independence in 1970, agriculture including farming and herding, accounted for the largest component of Nigeria's GDP, employing over 70 percent of the economically active

population. Before 1970 the sector had contributed more than 75 percent of export earnings, but since then, however, it has stagnated, partly due to government neglect and poor investment, and partly due to ecological factors such as drought, disease, and reduction in soil fertility. Presently agriculture contributes about **41% of the GDP** and still employs about 70% of the work force; the contribution of **agriculture in the GDP** is made up of **crops (85%), livestock (10%), fisheries (4%) and forestry (1%)**.

 Food production - The food security crops grown in large quantities are sorghum, millet, maize (corn), rice, yams, and cassava, which are now widely sold for cash as well. These constitute the main staple food items of the populace. The major livestock includes cattle, sheep, goats, poultry and pigs. Though the **yield of crops** is rather low compared to other countries, output in 2006 reveals the comparative advantage of the country in the production of several crops such as cassava (49m MT) and yam (28,890.42_MT), which puts Nigeria in the lead among other countries of the world producing these items. **Livestock production** is inadequate with about 30% of slaughters being imported from neighbouring countries. **Fish production** was estimated at about 600,000 MT out of a domestic demand of 2.6 million MT.

 Import/Export - In 2005 the value of import was about USD 26 billion, which comprised manufactured goods, machinery and transport equipment, chemicals, and food and live animals. The value of export in 2005 was USD 52 billion comprising oil (95% of merchandise) and a few other items. Thus the country posted a trade surplus of USD 26 billion in 2005 corresponding to about 20% of GDP and achieved positive current balance of USD 9.6 billion. By the mid-1990s, agriculture's share of exports had declined to less than 5 percent, which led to changing fortune of the country from an exporter of food to nearby countries to a net importer of food and fibre from other countries of the world. The food import bill is ever increasing, reaching \$24 billion in 2001. The traditional **cash crops** produced in the country include oil palm, cocoa, rubber, and cotton, all of which were once exported but are now sold mostly locally. Thus the county has lost its previous position as a leading supplier of agricultural produce into the world market with cocoa production stagnating at around 180,000 tons compared to 300,000 tons 25 years ago. The trend is the same for other commodities of historic importance, such as groundnut and palm oil which have also witnessed

dramatic decline in production. Furthermore, the country which used to be the biggest poultry producer in Africa has receded in status from 40 million birds annually to about 18 million.

✍️ **Poverty** - Poverty is pervasive, given the high proportion of the population below the poverty line (47% in 2000) and inflation typically in double digits for a number of years, which reached a modal level of 72.8% in 1995. It is acute in the country in the rural areas while unemployment was very high mostly among unskilled people and the active youth population between the ages of 13-25 (NPC 2000).

The recent **profile of crop and livestock commodities** in terms of production and trade statistics is presented in Table 1 for different years.

Table 1: Nigeria - Profile of selected agricultural commodities and forest products in recent years

Selected crop	Production (2007)		Trade (2005)	
	Yield	Output (tones)	Imports (tonnes)	Export (tones)
Food crops (kg/ha):				
Maize	1,659.5	7,800,000	17,668	2,226
Rice (Milled)	1,559.1	4,677,400	1,040,322	4,367
Cassava	11,883.1	45,750,000	-	-
Wheat	875.000	70,000	3,714,683	168,355
Beans	-	-	1,701	-
Millet	1,316.2	7,700,000	0	504
Cash crops (kg/ha)				
Cocoa	450.400	500,000	0	267,900
Rubber	-	-	84	25,000
Groundnut	1,720.0	3,835,600	7,100	87
Cashew	2,000.0	660,000	0	17,277
Sesame seed	510.2	100,000	59,600	117
Cotton seed	-	-	5,100	15,700
Livestock (carcass Weight, tonnes):				
Chicken	1000.0	233,100	39	-
Pig meat	-	6,730,000	33	-
Cattle	-	16,258,560	47	3
Sheep meat	110.0	105,570	9	-
Goat meat	127.0	148,830	-	-
Forestry				
Particle board (CUM)	-	40,000.00	1,500.00	0.00
Ply wood (CUM)	-	55,000.00	280.00	300.00
Wood charcoal (tons)	-	3,592,327.00	0.00	29,562.00
Round wood (CUM)	-	71,047,309.00	500.00	4,286.00
Sawn wood	-	2,000,000.00	1,300.00	21,500.00

Source: FAO STAT

THEORETICAL PROPOSITION

The theory of policy derives from the Keynesian macroeconomics, after John Maynard Keynes (1883-1946), the British economist who established beyond doubts that government spending must compensate for insufficient business investment in times of recession; a situation such as the world economy presently is, which leads certain governments to implement intervention policies in terms of public funds. to bail out the industry particularly banking industry, automobile industry among others; so far none of these governments have announced such a huge magnitude of public funds to bail out agricultural producers particularly the millions of small-scale farmers in developing countries such as Nigeria.

Whereas the classical theory gave rise to the *laissez-faire policy* of non interference by government, the Keynesian theory was premised on the need for organized intervention by the government subject to the same tenets of a capitalist economy - capital accumulation, profit motive, etc. The Keynes macroeconomic thoughts provide the main theoretical framework of policy intervention in terms of aggregate demand as the central argument of the economic health of a nation. Specifically, while in mild contraction of aggregate demand **monetary policy** in terms of easy credit and low interest rate would stimulate the business investment, in severe contractions of aggregate demand **fiscal policy** in terms of increased public spending would be required.

The theoretical framework of my research involves presentation of my own propositions that situates the agricultural economy more properly in relation to overall economic development. In this regard, my contributions to policy theory are concentrated along two main lines of abstract thoughts the “deathly embrace” theory of the two-sector economy structure, and the primer on policy process.

Deathly Embrace Theory

From the foregoing theoretical standpoint, my own proposition is that the outward response of an economy to policy instruments, which may be called the *phenotype*, depends on its natural constitution, which may be called the *genotype*; the important distinction being made between the industrial genotype of the *industrial economy* and the agricultural genotype of the *agricultural economy*. This distinction rejects

the popular infant industry hypothesis of agriculture passing from a stage of subsistence towards industrialization; and substitutes it with the alternative hypothesis that an economy exists in two types - agricultural economy and industrial economy - that are different in their response coefficients to policy instruments. Thus typically an agricultural economy has a two-sector structure whereby both sectors depend on each other for thrusts and feedbacks, i.e. "inputs" and "outputs". And, when in the ensuing forward and backward linkages both sectors *wait* for each other for such inputs and outputs that are not forthcoming, as is frequently the case, the whole economic system tends to slow down; this situation I choose to describe as an *embrace* of sectors. The system eventually stagnates in the limit; a situation I have described as a *deathly embrace* of the economic structure.

This proposition provides the intuitive reasoning behind the behaviour of agricultural economy in its response to policy instruments, by preserving and exploring the traditional duality of the agricultural economy for policy intervention purposes. In particular it illuminates the inherent relationship between agriculture and industry for this purpose better than previous theories of the two-sector economy that are not linked directly to policy. Therefore it is a theory of policy which helps in directing the application of policy instruments sharply to the critical points of the hypothetical embrace between two sectors. The motive is to enhance the ability of policy authorities in government to *de-embrace* the agricultural economy in its sluggish or stagnant state. Thus the *deathly embrace* theory as proposed holds the key to functional policy intervention in the agricultural economy with a view to promoting growth and development of the sector.

Development literature copiously corroborates the import of this theory. In Haessel's (1970) review of the literature on dual economy models, the conclusion was reached that the general direction was toward "formulation and implementation of development policies which exploit the interrelationship between industry and agriculture in a manner which promotes the mutual development" of both sectors. However the development experience in the countries of Africa and other developing economies in general have not followed that dictum, or in some cases have indicated otherwise; as the "manner" has not successfully explored this relationship for active policy intervention in these places. Thus the present proposition attempts to fill the gap with a broad theoretic framework for investigating the system for the causes and consequences of the mutual embrace, rather than "mutual development" of both sectors, which result in the slow pace of economic growth. In this framework the specific policies

can be considered or evaluated against the functionality of the entire linkage system.

According to Idachaba's (1996) comments at the early stage of propounding this theory, it is indeed a matter of careful observation to conjecture that the developing economy depends upon both sectors waiting for each other to perform their reciprocal roles. Practical policy events in the agricultural economy of Nigeria indicates that the theory may as well be extended to the regime of "multiple embrace" which incorporate the view that "it s not only ill-health in agriculture that holds down industry and vice versa, but that ill-health in the transportation sector, social services, education sector and others lead to more severe illness of the agricultural economy". As stated in my initial publication of this theory, this expanded idea makes sense in the context of integrated rural development strategies dominating the scene in several developing economies, thereby giving further scope for the application of the theory in policy practice.

The deathly embrace theory is consistent with other theories governing the policy environment of agricultural development as highlighted below (Olaide et al.1975)):

- (a) **The Classical-Neoclassical theory** - this posits that economic growth is a function of capital investments and employment of labour. Capital and labour are assumed to flow from sectors with low rates of return and marginal productivities to those with high rates of return and marginal productivities. This is the foundation of the demand for high-yielding enterprises in agricultural economy areas.
- (b) **Basic resource theory** -This states that economic growth depends on the presence, the quality and magnitude of basic resources in certain regions. These resources can be developed or exploited to create utilities.
- (c) **Internal combustion theory** - This attributes economic growth and development to certain factors, which include technology, specialization, economies of scale, as well as the institutional, administrative and political factors.
- (d) **Dual-economy model** - In this, two sectors of the economy are demarcated; namely: rural and urban. The agricultural sector is assumed to possess surplus resources, particularly labour, which should be released

to develop the urban sector.

- (e) **Export-led growth model** - This posits that policies designed to expand export markets will lead to greater utilization of idle resources, capable of enhancing incomes of producers, employment and government revenues.
- (f) **Urban industrial impact theory** -This describes growth as a burning candle; the candle of economic growth is located in the industrial urban centre and it illuminates the rural areas. Therefore, the intensity of the illumination is a decreasing function of distance from the urban centre. The logic of this theory is that nearness to urban centres determines the transportation cost of inputs and outputs and also the market for agricultural produce.
- (g) **High input pay-off model** -This assumes farmers are efficient allocators of resources and also respond to economic stimuli, but operate under immense technical and economic inhibitions. Therefore, support is necessary in the forms of improved seeds and other technical inputs, as well as to output prices, which forms the basis of price intervention policies.
- (h) **Diffusion model** - This attributes productivity differences among farmers to the presence of different access to information and critical knowledge. The need for agricultural extension policies, therefore, arises. Effective extension would improve the profitability of the farm business, thereby providing new points of growth of the agricultural economy.

Primer of the Policy Process

The opportunity for me to deepen my thoughts through the practical policy process came with the role I played as the International Rapporteur to a workshop organized by the Netherlands-based Technical Centre for Agricultural and Rural Cooperation (CTA), at Entebbe, Uganda in 2000, and I had the privilege to produce the Summary Report and the Proceedings of the workshop (CTA 2000a, 2000b). The critical aspects of these thoughts were informed and influenced by the outputs of the workshop

in several ways such as definition of policy terminologies, the process character of policy and the emerging issues in the policy process analysis with special reference to the congruency of policy and law. In general the sanctity of the policy process is not often observed, so policy authorities are frequently jumping steps and muddling things up.

To begin with, the technical meaning of policy itself is at the centre of people's understanding about the policy process. The agreed working definition is as follows: that, policy is a statement of intent, action or inaction by the public authority in response to the need to achieve a pre-determined purpose, which may or may not be formally declared. Thus policy is a statement of the mindset of government, i.e. a matter of *WHAT*, *thus contrasts with* strategy as a formulation of how to implement the policy, i.e. a matter of *HOW*? Thus a policy provides the overall framework which determines a government's aim and activities, wherefrom the different modes of strategy formulation emerge as applicable, such as plans, programmes and projects, as the means of implementing policy. In this context, the policy objectives, follows a hierarchy from the highest level of aggregate (societal goals) to lower levels of aggregate (macroeconomic objectives) and to much lower and lower levels of aggregate such as sectoral (e.g. agriculture sector) and sub-sectoral (e.g. fertilizer sub-sector) objectives. According to Kentish (2000b), "when contributions are not expressed in a policy format, there is the very real likelihood that certain critical areas that could make or break the policy process are ignored". In practice, however, the elements of the strategy formulation or planning are taken as not only consistent with the current policy but also synonymous with the policy itself.

Some elements of this definition of policy should be taken seriously. The first is that policy is essentially an intervention, usually in the market for goods and services, which the expected output or outcome would not have been the result without the policy intervention. The second feature of the definition adopted is that policy may or may not be formally declared, which leads to typology of policy into implicit and explicit categories. The third element to note is that the word 'inaction' in the definition of policy is not redundant, which recognizes the fact that, on a particular policy issue and at a particular time or stage in the policy process, what the government does or says (policy of intervention) is as important as what it does not do or say (policy of non-intervention). Thus, even in the event of no statement or action there will be definite (policy) consequences of a passive stance taken by the government on any development issues. The fourth element to note in

the working definition is the existence of a purpose or objective underlying any policy action or inaction, whether it is formally stated and publicly declared, or not. Thus, the typology of public policy objectives also includes two categories namely, implicit policy objectives and explicit policy objectives. For instance, for good or bad reasons, the government might choose not to reveal the real motive behind its policy stance at a particular time if it perceives a potential negative effect on public opinion.

Thus, the real policy objectives may be revealed only after implementation has begun, or has been completed, and these may be slightly or radically different from the initial statement of objectives. For example, substantial policy benefits meant for the farming population may, in practice, accrue instead to politicians, civil servants and the military and other urban elites, to the knowledge of the government but policy authorities may not act against it if the next general election is close by. This poses a problem to analysts about how to identify the unwritten, implicit things in the mind of government in order to unravel the rationale and build useful database on such policies.

On the other hand, strategy means mechanisms for implementing the policy. As in a military strategy, the steps towards the formulation involves “charting the course” of action; and “staying on course” of action with concentrated focus on the target of action, with the motive of meeting the stated policy objectives. Critical to this is the careful design of the course of action in great detail, including a series **plans** to be designed such as Entry Plan; Work Plan; Action Plan; and Exit Plan, as highlighted below.

- **Entry plan** How to properly enter the implementation stage (phasing of implementation; stakeholder involvement; security of fund for implementation; guaranteeing full participation etc.). A good entry plan will ensure a safe landing upon entry in order to avoid the usual delays in project start-up through unexpected problem with beneficiary communities.
- **Work plan** How to properly mobilize resources (money/men/materials) in the long/medium term? (Perspective characteristics; activity schedules; time line; logframe(s) etc.) A good work plan helps in properly sequencing the activities and facilitates monitoring and evaluation works.
- **Action plan** How to engage money, men and materials in the immediate/short term? (Budget; safeguards; role assignment; etc). A good action plan helps to guide the role of actors and to nip unexpected implementation problems in the bud.

- **Exit plan** - How to rescue the plan when trouble looms ahead; i.e. in the event of a severe stress condition and the danger looms large that a plan will not survive till end, what arrangements are in place for it to possibly recover or for damage control? The options include: retirement option; bailout option; termination option; liquidation options etc. A good exit plan will ensure that project sites are not abandoned prematurely without recovering the salvage value of structures or substantial portion of the sunk costs one way or another.

The issue here is that our agricultural strategies are often formulated without a good entry plan which sometimes leads to project being dead on arrival. Also they are often formulated without an exit plan leading to severe damage to beneficiaries when the unexpected problems of implementation emerge as usual. Poor articulation or complete absence of strategies with clear action steps that ought to have been well simulated under different/several built-scenarios (with assumptions) and properly analyzed with prospective outcomes before actual implementation has been the norm.

Further to conceptual matters, the need arose to make a technical distinction between the discrete approach and the process approach to policy analysis. The former reflects the traditional view of policy as a sequence of discrete events in decision making, while the latter represents the contemporary view of policy as a sequence of continuous events in the process. Making this distinction represents a paradigm shift from the previous focus on the static properties of policy decisions to incorporate the dynamic character of policy into public decisions; which creates an opportunity to explore agricultural policymaking for causes and consequences of persistent policy failure in terms of the interactive relationships at the various stages of the policy process. As noted by Idachaba (2000b), “these failures have persisted from year to year, regime to regime and country to country, as if policymakers are not capable of learning from their own mistakes or from mistakes of others”.

The process approach also reveals the need to focus more on both demand and supply sides of policy. Traditional policy analysis is based on physical, economic and social research as sources of “policy recommendations” as a residual matter whereby the emphasis is put on sources of supply of policies namely political leaders, bureaucrats and consultants; rather than on the demand side of policies such as the small and large-scale farmers, agro-processors and consumers. On the other hand, investigation anchored on the policy process involves considerations about the demand side with focus on stakeholders such as supply farmers, food

processor, food marketers, etc, and explores issues about them in greater depth.

Thus theoretically, policy process is brought about by a sequence of some (earlier) events and in followed up by other (later) events. Each event represents a stage in the policy process, and the various stages interact with one another in forward and backward linkages, leading to thrusts and feedbacks that produce a cobweb of activities that are non-linear and inherently cyclical. Hence policy cycle or a policy web is a technical term describing the interrelated actions of the public sector, linked with actions of the private sector, to bring about certain production and consumption patterns in the economy, which otherwise would not have been the case without such actions

The five stages of the policy process and the issues about them are as follows:

○ **Identification**-Policy identification involves recognition of the existence of an agricultural problem requiring an appropriate policy response or action; the issues include: improper diagnosis of causes, characteristics and consequences of policy problems, lack of ordered prioritization of policy problems; lack of recognition of a problem and a long time lag between a problem emerging and recognition of the existence of the problem; this depends on several factors such as availability of information relevant to the policy, availability and quality of mechanisms for sensitizing the policymakers to the existence of the problem, capacity of stakeholders to influence the policy agenda; and capacity and independence of the media as sources of information about emerging policy problem areas.

○ **Formulation** - Policy formulation is a highly technical stage consisting in the articulation (design and formulation) of the various components of the policy, including objectives, instruments, strategies, time phasing, and financial implications; the issues are: clarity of objectives; tenability of policy options (including their underlying assumptions), choice of strategies and instruments, coherence of plans, programmes and implementation stages, and construction of monitoring and evaluation indicators; the overriding issues include the time lag between recognition of a policy problem and formulation of an appropriate policy response, which depends on several factors such as technical capacity for policy formulation in ministries of agriculture and other government agencies as well as

independent sector agencies, consultative arrangements and policy information exchange between ministries of agriculture and other government agencies, on the one hand, and farmers' organizations, research institutions, and independent consultants on the other; and mechanisms for sensitizing policymakers to identify problem areas requiring a policy response.

○ **Appraisal** - Policy appraisal involves verification or review of objectives, assumptions and instruments, review of both intended and unintended effects, review of resource availability and risk analysis; the issues peculiar to this stage are: the failure to appreciate the place and role of policy appraisal and verification before implementation; the lack of clear information on the benefits of policy appraisal before implementation, and the tendency for governments to be in a hurry to show that they are responding to an identified problem before the expiration of their political tenure.

○ **Implementation** - Policy implementation is the action stage wherein resources are mobilized to realize the policy objectives; the most important issues at this stage are: effective mobilization of human and financial resources, inappropriate institutional arrangements; non-specification of performance indicators, development of a work programme and a budget, and the role of monitoring and on-going evaluation.; the overriding issues are: the non-linear nature of the path from policy design into policy decision, the lack of strong and smoothly functioning partnerships and bridges between policy analysts, designers and formulators during implementation, on the one hand, and government decision makers on the other; and the difficulty in getting decisions made through policy advice, lobbying and advocacy as implementation progresses.

○ **Evaluation** - Policy evaluation (including policy impact assessment) entails looking back at different points of implementation; the challenges are: suitable methodology, impact indicators, input from monitoring, identification of positive and negative impacts, and conclusions on the extent to which policy has achieved its goal; the common issues are hasty policy designs that make no provision for monitoring and evaluation, failure

to specify performance indicators that will help track achievements and constraints during the policy implementation stage; inadequate identification of sources and types of information required for monitoring and evaluation, and the general lack of a monitoring and evaluation culture in the agricultural policy process; other issues include lack of appreciation by key stakeholders the need for policy evaluation and impact assessment , failure to distinguish policy, programme and project outputs from policy impact, analytical difficulties in conducting impact studies such as attribution and long time frame, and failure to generate and transmit the needed information for policy impact assessment.

DATAWORKS

The methodology employed involves the collection of primary and secondary data of quantitative and qualitative types, as the raw materials required for the policy analysis work. This comprises the wide range of sources such as experimental and non-experimental surveys, participant observations and other field exposures, among others, leading to accumulation of a huge repository of data over time.

The database contains the following elements among others; indicating my collaborators and associates in the field works involved as follows:

- Micro data of primary input and outputs types from the domain of the old World Bank-assisted Oyo North Agricultural Development Projects (ONADEP); used for the estimation of derived input demand function for maize (Ayoola, 1983).
- Macro data of time series input-output types for the whole country; used for commodity programming with particular reference to maize as inputs into the agricultural development planning process (Ayoola 1988);
- Aggregate data of the institutional types covering all the Local Government Areas of the country; used for the systematic Inventorization of the stock and flows of rural infrastructures in Nigeria; (Idachaba et al 1995)
- Household and farm budget data for the design and formulation of the enclave projects at Elebu in Kwara State (UAM 1992), Ubamgbe Uganbe in Benue State (UAM 1993) and Agu Ukehe in Enugu State (UAM 1993) under

the defunct National Agricultural Land Development Authority, NALDA.

- Secondary data of a mixed type, for the characterization of Middle Belt agro-ecology under the National Agricultural Research Project, NARP (Idachaba et al 1994).

- Input, output and price data for the assessment of the productivity of rural enterprises in Otukpo and Oju Local Government Areas of Benue State (Ayoola 1992)

- Financial and time allocation data for performance assessment of agricultural research in the National Agricultural Research Institutes and the Faculties of Agriculture in all universities in the country, under the Agricultural Science and Technology Indicators Project, ASTI under the auspices of IFPRI (Beintema and Ayoola 2003).

- Qualitative data for poverty assessment in the North East of Nigeria under the World Bank/DFID Voice of the Poor project (Zasha, et al 1999).

- Data on the public sector activities for the design of DFID State and Local Government project and for design the Poverty Reduction Strategy Plan for Benue State, (with Ode Ojowu and others)

- Data of primary and secondary types for the production of the National Medium Term Priority Framework under the auspices of Food and Agriculture Organization, FAO.

- Qualitative data from health centres in Benue and other states for the situation analysis of famiy planning practices under the auspices of USAID, in association with staff of Benue State Ministry of Health (with William Anyebe, Victoria Nor etc.)

- Primary and secondary data collected in Delta State for the design of an Agricultural Development Roadmap; followed by provision of technical support for implementation in collaboration (with M. O. Adetunji and others etc.)

- Socio-economic data on fertilizer towards preparation of strategy implementing the fertilizer policy for Nigeria under the auspices of the

Federal Fertilizer Department. (with R. O. Oyeleke)

○ Miscellaneous data of participant observation and experiential types from several sources; particularly in my role as a member of statutory committees, study groups, task forces, among others, namely: National Fertilizer Technical Committee (NFTC); Technical Committee on Africa Fertilizer Summit (2006); Rapporteur for the Africa Cocoa Summit (2006); Africa Food Security Summit (2006); Consultative Committee of Common Fund for Commodities Task Force on the ECOWAS Agricultural Policy (ECOWAP 2004); Policy Economist IFDC, an international centre for soil fertility and agricultural development (2003-2006); President of Farm and Infrastructure Foundation; Ministerial Task Force on Commodity Development Projects in Nigeria; Technical Working Committee on Vision 2020 (Trade and Commerce); etc.

ANALYSIS AND RESULTS

Analytical Models

Several models were formulated to investigate the inner mechanisms of the agricultural economy, which I am the author of two of them that represent my original contribution to the toolbox of agricultural economics analysis; namely: Optimal Control Model (OCM) and Deathly Embrace Model (DEM)

The OCM is a framework for analyzing the commodity programming problem involved in agricultural planning and policy, wherein all information about the way in which aggregate production and demand determine the value of self sufficiency status of a food commodity is contained in the country's self sufficiency equation. The control problem is how to select the optimal time path of a control variable (such as land X) for the production of a particular commodity (such as maize) among a class of infinite time paths that leads to a pre-set output target within a specified planning horizon. In the model formulated to capture this, the objective function (J , Equation 1) is a second-order linear differential equation, to be maximized under constraints bounded by initial and terminal conditions (Equation 2). The solution is the standard Euler Equation for the second order differential equation, characterized by constant coefficients and constant term (Equation 3); which require uncovering the "primitive" relation to yield the optimal time path we seek, in terms of land schedules for self-sufficiency in maize production in Nigeria (Ayoola 1988)¹.

The DEM is a formulation for addressing a specific policy problem as derived from the previously stated deathly embrace theory of the two-sector economy structure. We consider the following hypotheses:

¹ Given ...

$$1. \quad J = \int_{t_0}^{t_n} I(X_i(t), X_i(t), t) dt$$

$$2. \quad \text{Max } J = \int_{t_0}^{t_n} I(\dots) dt \quad s.t: \quad X(t_0) = X_0; X(t_n) = X_n.$$

$$3. \quad \frac{\partial I}{\partial X} = \frac{d}{dt} \left(\frac{\partial I}{\partial \dot{X}} \right).$$

1. A structural problem exists in terms of the numerical imbalance of agricultural production units with those of industry, which creates disproportionate volumes of goods and services across sectors; to the extent that the free flow of commodities is impaired along with this numerical imbalance, to that extent the organs of the agricultural economy technically embrace each other.

2. Structural failure is the result of misalignment of the component parts of the agricultural economy such that certain production units are larger or smaller than proportionately required relative to other units of the same or other sector in the system; to the extent that this creates substantial waste in resource use, which leads to missing the targets set for different production units, to that extent agriculture and industry embrace each other.

3. Structural failure emanates from missing components which reduces the capacity of the system to produce and consume; to the extent that capacity underutilization hinders different production units within and between the sectors, to that extent both sectors embrace each other.

The modeling and control of the agricultural economy receive an expression from the foregoing hypotheses. The progress made in modeling the agriculture-industry (A-I) system within the context of sector embrace for policy analysis and intervention purposes depends on the diagnosis of policy issues about the appropriate structure and transmission mechanisms installed within the model for describing the system under realistic assumptions for estimating the parameters involved².

The production possibility frontier specifies the maximum levels of land and labour by both sectors of the agricultural economy. Thus the empirical task involves locating the locus of joint input use in the domain bounded by the frontier and the axis, so the relativity of any point of resource use measured against the frontier is an indication of sector embrace, whereby policy prescriptions can emerge or be evaluated.

In the present case, as annotated in the series of equations numbered 1-12 in the footnote on the next page³, first the two-input resource base of the

2. In further constructing this model I like to acknowledge the contributions of the faculty at the Economics Department of Iowa State University, USA, where a special seminar was organized to hear me out in 1996, particularly the contributions of Professor Havey Lapan into the model structure and Professor Stanley Johnson who was instrumental to the publication of the theory as a special monograph of the Centre for Agriculture and Rural Development (CARD).

dual economy model structure is given with land (T) and labour (L). Second the links between the sectors is established in terms of output of one serving as input of the other; in addition to both drawing from a common pool of national resources and given the possibility that each sector also utilizes its own output in the production process. Third the sector outputs behave as intermediate inputs in the system so net output (N) is defined for each sector. Fourth the output of one sector is an argument in the net output of the other sector and vice versa. Since net output is what is actually available for consumption and trade, the fortunes of agriculture and industry are intricately joined together in the economy. This helps in the determination of the “static embrace” status of the system directly through derivation and estimation of a suitable quantity or measurement index, depending on actual specifications. Finally, the computation of dynamic embrace status of the economy requires the introduction of time t into the analysis, given the usual parameters of technological progress, alpha for agriculture and beta for industry.

The main issue, however, is how decisions are to be made to achieve profit maximization and efficiency in the production units so that the scope of policy intervention can be determined and enhanced. The mechanism for doing so involves “de-embracing” the structure, conduct and performance of the agricultural economy, leading to policy intervention modes that are more focused, more targeted and more effective. In sum, the model structure and function is akin to others in literature such as the Walrasian/Kuhn_Tucker rural-urban equilibrium model as subsequently applied by Kilnenny (undated), who suggested how the Computable General Equilibrium Model can be initialized and verified with a bi-sectoral

¹ Given the two-input resource base of the dual economy, with land (T) and labour (L)

1. $X[T_x, L_x] \Rightarrow$ agriculture sector (X)
2. $Y[T_y, L_y] \Rightarrow$ industry sector (Y)
3. $T_x + T_y \Rightarrow$ total stock of land available
4. $L_x + L_y \Rightarrow$ total stock of labour available
5. $X[T_x, L_x; Q_y^x, Q_x^x] \Rightarrow$ agriculture sector
6. $Y[T_y, L_y; Q_y^y, Q_x^y] \Rightarrow$ industry sector
7. $N_x = [X - Q_y^x - Q_x^y] \Rightarrow$ agriculture sector
8. $N_y = [Y - Q_y^y - Q_x^x] \Rightarrow$ industry sector
9. $T_x(t) + T_y(t) \leq T(t)$
10. $L_x(t) + L_y(t) \leq L(t)$
11. $X_t = F[T_x(t), L_x(t); Q_y^x(t-1); Q_x^x(t-1); \alpha(t), R(t)]$
12. $Y_t = G[T_y(t), L_y(t); Q_y^y(t-1); Q_x^y(t-1); \beta(t), R(t)]$.

Social Accounting Matrix that can be used for simulation of the system. In that mode, for instance, the effect of how changes in relative transport costs can possibly affect relative sectoral wage rates can be shown and the location of “even production cost-oriented” firms can be determined.

Results

The results of the analyses generally indicate that the policy factor has played an important role in the prodigious behaviour of the agricultural economy over time. Therefore the empirical results of the analyses should be highlighted in order to substantiate the main aspects of the behaviour with special reference to the agricultural economy of Nigeria, as presented hereunder.

Role of policy - Input policy

Farm input policy consists in the instruments for the delivery of fertilizer, seed and pesticides. In this regard fertilizer is the most politically visible among the class of farm inputs required for the green revolution. As stated in the *National Fertilizer Policy for Nigeria*, which was adopted in 2006, the major challenges facing the fertilizer sub-sector border on the following:

- A) how to increase and improve use of fertilizers;
- b) how to achieve agricultural competitiveness through fertilizers;
- c) how to induce and sustain nutrient use efficiency;
- d) how to safeguard the environment in fertilizer production and use;
- e) how to better exploit available raw materials for fertilizer production;
- f) how to assure quality fertilizer products in the market;
- g) how to raise employment in the fertilizer industry.

Therefore the fertilizer policy has the broad objective to facilitate farmers' timely access to adequate quantity and quality of fertilizers at “competitive but affordable prices” in Nigeria. The policy directions for meeting this objective are: fertilizer production, international trade, domestic marketing, research and development, quality control, environmental sustainability; farm use; and, Governance and institutional reforms

It was found that fertilizer sector has a decade-wise cycle of intervention policies.

○ The period between 1966 and 1976 was characterized by state control of fertilizer sector. During this period, although a Federal Ministry for Agriculture had been established since 1966, each Region of the country

was still importing fertilizer directly for use in its domain. Based on need for coordination later on, the Federal Government took over through the creation of an organ of the Federal Ministry, known as FPDD (Fertilizer Procurement and Distribution Division) in 1976, which marked the commencement of federal control of the fertilizer subsector.

○ The period between 1976 and 1986 witnessed the overbearing posture of FPDD in the country to deliver imported government fertilizers at fixed prices incorporating subsidy. Also in 1976, the FSFC (Federal Superphosphate Fertilizer Company) was established at Kaduna. The highpoint of this period was 1983/1984 when the Federal Government secured two fertilizer loans from the World Bank that induced massive importation of fertilizer, premised on three conditions - phased withdrawal of subsidy, establishment of a National Fertilizer Revolving Fund and a nation-wide commercial fertilizer operation.

○ The period from 1986 to 1996 represents a turning point in the role of government in the agricultural economy including the fertilizer sector, being a period of active economic reform. The Structural Adjustment Programme (SAP) was launched in 1986, which had inward looking policies as part of its main elements. In this regard, the NAFCON (National Fertilizer Company) was established in 1987 as a domestic producer of nitrogenous fertilizers, with a view to reducing the dependence of the country on imported NPK products. The gradual liberalization of fertilizer sector commenced with the dismantling of the distribution network and government withdrawal from fertilizer importation in 1995, followed by total withdrawal from subsidy on fertilizer in 1997.

○ The period from 1996 to 2006 featured the implementation of a fertilizer stabilization scheme, which involved the re-introduction of subsidy at 25% level and annual tenders by FGN (Federal Government of Nigeria) to purchase limited quantities of fertilizer from private importers, for direct delivery to states and onward sales to farmers at fixed prices. The attempt by the Ministry to establish a regulatory system for fertilizer in 2002 failed to materialize but “National Fertilizer Policy for Nigeria” was subsequently articulated in 2006 that provided for it.

○ The current period 2006-2016 is characterized by the good intension of the Federal Government to totally withdraw from fertilizer subsidy as from next year, 2010.

According to Figure 1, the peak of fertilizer use in the country was in 1994, about 1.2 Million MT compared with the estimated national demand of about 7 million MT. The most critical factor responsible for the situation

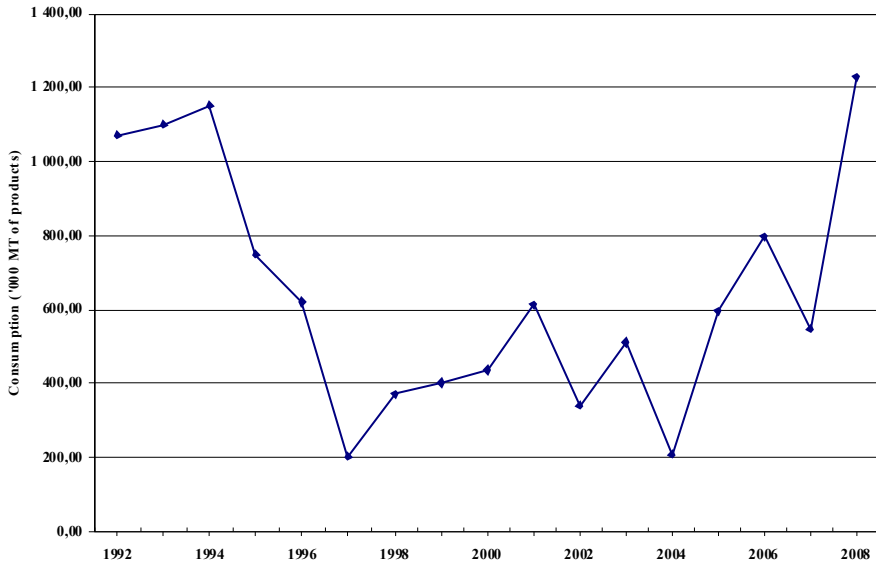


Figure 1: Fertilizer use in Nigeria, 1992-2008

with the fertilizer sector is the role of government in the fertilizer market that is not right yet. By its very nature, subsidy is a freak of nature which its advantages are also its disadvantages. The provision of subsidy is premised on the need to promote its affordability by small scale farmers, given their low competitive competence in the international market for imported items, and consistent with the infant industry argument and the theory of second best (Ayoola 1988). But sooner or later the perpetual provision of subsidy soon makes farmers mentally dependent on it to the extent that the affordability advantage becomes illusory.

Another problem with farm input policy is the absence of a regulatory system in the market, to curb the activities of unscrupulous dealers who short-change unsuspecting farmers through several sharp practices such as short bag weights, adulteration and lack of truth in labeling. In the past, the NFTC/NFC used to test new fertilizer products before they are sold in the market along with their function to produce fertilizer slates based on state indents to maximize the use of nutrients for soil fertility maintenance. But there was and still is no formal regulatory system in place to rescue the agricultural economy from the hands of middle men, selling sand and ash as fertilizer and violating the truth-in-labeling standards at will.

Role of policy - Commodity policy

Commodity development policy consists in the strategies of the government to promote particular commodities, with a view to enhancing their comparative advantage in the country. The goal of such policies is to stimulate and sustain the value chains of particular agricultural commodities towards increased production, utilization and trade. The three policy modes for achieving this are technology creation through agricultural research, infrastructure support and market development.

One type of technology is process technology such as improved planting materials and mechanization for raising productivity of land and labor upwards. This type of technology is primarily responsible for any incremental output at given levels of land and labor resources and thus forms a critical source of food sufficiency for the country. However the apparent failure of process technology to transform traditional agriculture has meant a low ceiling of food output in the first instance, so that the constant filling of the food gap is not feasible since growth of food production lags behind growth of population. Another type of technology is product technology, which generates value-added for increasing the utility of raw products to the consumers. The post-harvest activities in storage, processing and marketing fall into this category of technology. The greater food value of many products probably resides in these activities so that without them only a small proportion of utility of food is available to the populace. Thus, the low ebb of product technology in Nigeria has blocked the needed multiplier effect of food utilities and consequently keeps the agricultural economy dull and low in performance.

Based on the evidence from advanced agricultural economies, technology development through research is the primary condition for food security of a nation. In that regard the National Agricultural Research System (NARS) comprises eighteen commodity-focused research institutes (RIs), 40 faculties of agriculture in conventional federal, state and private universities (FAs) and three universities of agriculture (UAs). Apart from systemic problems of the NARS such as poor funding (Beintema and Ayoola 2003), it is generally observed that Nigerian agriculture is grossly under-researched in terms of number, compared to a more advanced agricultural economy like India. For instance, during my last visit to India in November 2007, I encountered a NARS featuring 47 full-fledged research institutes, 26 specialized research centres, 10 project directorates and five national bureaus on diversified topics of agricultural importance ranging from biological control, to genetic engineering etc. The Indian commodity

research system is so specialized and so narrowly defined to the extent that cotton for example, as a single commodity enjoys the luxury of two specialized research institutes focused on it alone, one generic (agronomy and breeding) and the other thematic (the Central Institute for Research on Cotton Technology). The observed density of research institutions in India is amazing and brazenly dexterous thereby portraying Nigeria as a non-starter in agricultural research: more than 50 agricultural universities compared to only three in Nigeria. We have research institute for buffaloes as different from research institute for horses and institutes for goats separate from other small ruminant animals, when only one institute exists in Nigeria for all livestock put together (NAPRI in Shika); institute for citrus different from mangoes, when only one institute exists in Nigeria for all fruits and horticultural crops put together (NIHORT, Ibadan); institute for fresh water fisheries separate from that for brackish water fisheries, for post harvest engineering; for potato research separate from other tubers; for jute and allied fibre; for soil salinity; etc.

The main issues with agricultural technology is appropriateness in terms of ecological considerations, socio-economic considerations, simplicity, capital versus labor considerations, as well as, divisibility and risk factor (Ayoola, 1990). Other issues identified border on policy factors in relation to productivity of agricultural enterprises, as incorporated in Kalu's (2008) model of farming systems. Results indicate that socio-economic factors play an important role in determining the appropriateness of technologies in Nigeria. The observations from two case studies attest to this:

- The first case is the hydraulic oil press, which was a labour-saving technology that produced cleaner and more hygienic palm oil but which displaced the wives of farmers as the traditional processor; in the south-west, a survey revealed that the husbands quickly abandoned and rejected the machines because, as they put it "their wives had become idle leaving them with plenty of time to gossip about their husbands".

- The second is the case of pounded yam machine and the yam flour which was invented to relieve the women from the labour of pounding and to produce a more hygienic and smoother pounded yam. However the well perfected technology was soon rejected for the simple reason that some men attached value to the sound coming from the crude "mortar and pestle" method and, as expressed by some of them, the "machines had denied them their natural right to "eat the sweat of their wives" which sometimes dropped in the mortar and mixed up with the pounded yam.

Next is the role of rural infrastructure as an instrument of commodity policy. Our work in this area (Idachaba et al 1995) was focused on three types of infrastructure as follows:

(i) Rural physical infrastructure, including: Rural roads which cause accelerated delivery of farm inputs, reduce transportation costs and enhance spatial agricultural production efficiency; Storage facilities which help to preserve foods in the forms that consumers need them and at the time they need them; Irrigation facilities, which assure farm water supply and stabilizes food production by protecting the farm production system against uncontrollable and undesirable fluctuations in domestic food production.

(ii) Rural social infrastructure, including: Clean water, decent housing, environmental sanitation, personal hygiene and adequate nutrition which help to improve the quality of rural life; formal and informal education which promote rural productivity by making the farmer able to decode agronomic and other information and carry out other desirable modern production practices; basic education also promotes feeding quality, dignity, self-respect and sense of belonging as well as political integration of the rural people;

(iii) Rural institutional infrastructure, including: Farmers associations and cooperatives, which facilitate economies of scale and profitability of rural enterprises; Agricultural extension, which improves the technology status of the farm business.

The problem with infrastructure is two-fold, the lumpy nature of their expenditure layout and the requirement for regular and periodic maintenance; which accounts for the limited successes of the series of programmes of government in this regard, notably: RBDAs, ADPs, DFFRI and NALDA.

The last instrument of commodity policy to be highlighted is market development. For the purpose of this exposition, we want to define market in a unique way, thus: the space between the producer and consumer wherein the success or failure of all commodity policies taken together is determined. This space has both geographical and temporal dimensions which create utility from agricultural commodities through commerce and trade. The commodity market is like the centre of a football field, where the game is won or lost. The actors in the market must demonstrate great industry to drive the production (the full backs) and consumption (the forward liners) towards the goal. Unfortunately the market development of

the agricultural economy is something that everybody talks about but nobody is serious about it; which is why the initial successes of certain programmes for stimulating production soon disappeared without creating lasting effects. The seemingly defunct Presidential Initiative on Cassava is a case in point, where government efforts quickly paid off in terms of large incremental output of cassava but which was not commercialized and marketed locally and internationally as planned. Then farmers who had responded to policy incentives were generally disappointed as glut occurred in the cassava market and price reached an all time low against their expectations for remunerative incomes. Some of them resorted to harvesting their cassava tubers for use as firewood in order to free the land for cultivation of other crops in the following season.

Another case in point is the recent introduction of two funds for agricultural development in the country. The first is the N200 Billion LASACS (Large Scale Agricultural Credit Scheme) under the auspices of the Central Bank as managers of the fund. As published in the media, the fund will be loaned directly to private farms (60%) and to State Government for on-lending to farmers (40%). What strikes me most is the definition of large scale farmers under the scheme, as people with N350 Million capital base excluding land. One will be surprised if many farmers in the country would genuinely qualify to meet this condition, and the scheme is considered as implicitly anti-small scale farmers who constitute the vast majority of the population of farmers in Nigeria. Empirical evidence abound to show that when this type of unattainable condition is attached to farm loans, the people will eventually resort to ways and means of circumventing it, which leads to diversion of the fund and consequent accrual of public policy benefits to unintended beneficiaries. The second fund is the N240 Billion Commercial Agriculture Scheme, which was approved as an intervention fund following the soaring food prices in the global food market in 2008. The origin is the decision of the Federal Government to dedicate the proceeds from the Natural Resources Development Fund to agriculture for the next three years, being 1.68% of the federation account. However the modality of applying the fund and its relationship with the LASACS is not yet clear.

We observe that initial commodity booms experienced from colonial period through the early post-independence period in the old Regions (Cocoa West, Groundnut North and Oil palm East) was primarily driven by the deliberate policy of organized the produce market to meet the objectives of the colonial government. And since the objectives changed after independence and the series of Marketing Boards became virtually bankrupt the market environment for agricultural products have not been got right.

Empirical evidence showed that among the class of seven commodity boards in existence prior to their abolition in 1986, only Nigerian Cocoa Board was not indebted to Central Bank of Nigeria. Since then the two market development policy instruments are: the set of three Marketing and Development Companies (for tree crops; arable crops; and livestock and fisheries) under the Federal Ministry of Agriculture and Water Resources; and the commodity exchange (Abuja Securities and Commodity Exchange) under the Federal Ministry of Commerce and Industry. However, the effects of both of these have not been felt in the agricultural economy to any significant extent.

If the colonial policy was anything to go by, market development begins with the exploration of the vast agro-ecological zones of the country for the production of crops and livestock products where comparative advantages already exist. Thus the establishment of colonial marketing boards for particular commodities was preceded by the production policy that demarcated the country into commodity zones as earlier stated in the background section: “Northern Province Pastoral or Livestock Production Area”; the “Northern Province Export Crop (Groundnut and Cotton) Production Area”; the “Middle Belt Food Production Area”; the “South East Export Crop (Palm oil and kernel) Production Area”; the “South West Food and Export (Cocoa and Palm kernel) Production Area”. However, in the present time there is no such production policy that explores the potential of the country in such a manner as the basis for market development of the agricultural economy.

In this regard, the professional services rendered to both the agriculture ministry and commerce ministry has offered an opportunity to observe that the relationship between these two ministries is crucial to the success of government in managing the commodity market space of the agricultural economy. At present a great deal of boundary maintenance activities of the two ministries creates some “no man's land” in the market for agricultural commodities and does not give scope for the high degree of interaction and cooperation required for market development in the agricultural economy. The result is a manifest disconnect between the production policies focused on particular agricultural commodities in the agriculture ministry and the marketing policies focused on the same commodities in the commerce ministry.

DISCUSSION

The discussion of findings is focused on my favorite themes of mine, with a view to exploring and interrogating on issues therein. The main theme is **Poverty reduction and food security**, wherefrom a number of sub-themes emerge: Role of government, Policy failure, Policy due

process and, Food as a Right. The passion to sponsor and promote these themes and sub-themes on a sustained basis is the source the inspiration I needed to found the **Farm and Infrastructure Foundation (FIF)**, which the thoughts about it dates back to 1996 before it was established at Makurdi in 1999 and registered with the Corporate Affairs Commission in 2000.

Incidentally, given my faith in this organization as a mode of addressing the several issues in the policy process, the urge to nurture FIF to maturity implicitly informs the decision last year for me to resign my commission from the University of Agriculture Makurdi with effect from the end of May 2009, in ten days time. By virtue of that decision, I am closing a chapter in my professional life about the institution which I joined from outset in 1988 and where I came, I saw and I conquered, having burnt the prime years of my intellectual energy there for 21 years. Indeed, the courage I summoned to voluntarily withdraw my service far ahead of the retirement age, for me, predicates on the need to move forward from inspiration to implementation, towards serving the agricultural economy further and contributing to society in a more practical way.

Further to FIF, the thoughts of a non-partisan and independent organization for supporting the policy process came to me when I was in post as Director of the defunct Centre for Food and Agricultural Strategy of the University of Agriculture Makurdi (CEFAS). The thoughts formed the major purpose of the intellectual stock taking I undertook for three-month period in the USA in 1996, as a joint visiting scholar to the Economics Department and the Centre for Agriculture and Rural Development (CARD) of Iowa State University, one of the famous land-grant institutions that provides us with the model of an agricultural university, such as UAM. There, the vision came against the backdrop of my intellectual enterprise as a Policy Economist; to the effect that the absence of focused and professional policy advocacy works was the missing link in the policy process for agricultural development in Nigeria. Thus FIF is an answer to that vision call, established as a professional, non-profit, non-government organization for promoting policy best practices in the agricultural sector. The instrumentality of FIF to get the policy environment right for agriculture and rural development in Nigeria involves participative policy advocacy, supported with technical policy brokerage and backed by practical evidence-based policy research activities.

The following can be said about policy advocacy in theory and practice:

1. Concept of policy advocacy The key words include: support, encouragement, backing, sponsorship, promotion, activism; the issues

include: given its position as an interested party in governance, the government cannot be expected to advocate policies in the best interest of the people at all times; therefore a neutral body is required as partner to government and as watchdog of government; that a platform must be created for farmers to express their policy interests and to give them a voice and a vote in the policy process.

2. Steps in policy advocacy The calculated steps include: Analysis work in terms of background research; Regular consultations in terms of close interactions and good relationship with policy authorities and policy stakeholders; Negotiations with policymakers; Brokering services in terms of policy articulation, formulation, verification, implementation, monitoring and evaluation; Lobbying which involves using the power of persuasion to push for decisions and actions for policy adoption; and (sometimes) pressure in terms of mass action by peaceful means to tie the hand of policy authorities behind their back.

3. Lessons learnt That there are several enemies out there: that Government and the people harbour many conflicts of interests; that International agencies act too cautiously for the fear of running into collision course with host government; that farmers and other associations have a weak voice and suffer leadership problems; that professional bodies are non-committal, grandstanding in posture and self-promoting in their activities; that private sector engage mostly in patronage and pursuit of business interest; and NGOs, who have high potential to address the policy problem, are unconsolidated in their efforts and weak in their capacities.

4. The risks involved That terrain for policy advocacy work is like a banana peel, very slippery; the critical question is: If and when the policy advocate runs into trouble with powerful policy authorities who bails him out?

This question arises based on the experience from the policy advocacy organized for the establishment of a fertilizer regulatory system in Nigeria (Figure 2). For this purpose, the farmers and agri-input dealers associations were mobilized to stage a peaceful demonstration at the 2006 meeting of the National Council on Agriculture at Abeokuta Ogun State, which involved the engagement of two masquerades (otherwise known as mascots), hired to carry placards before the Minister of Agriculture at three locations. The peaceful demonstration was a success at the Oba's palace where the Minister paid a courtesy call on the paramount ruler, the *Alake of Abeokuta*, who also lent his words in support. The demonstration was not so successful at the Governor's office where the Minister was also expected to pay a courtesy call on the State Governor, but the masquerades were prevented by



Figure 2: A policy advocacy event for the establishment of a fertilizer regulatory system in Nigeria, Abeokuta, Ogun State 2006

Poverty Reduction and Food security

The central issue in economic development is how to alleviate poverty from society or eliminate it altogether, which appears probably impossible to achieve in a lifetime. However, the chunk of poverty is hunger, so that poverty and food insecurity, like Siamese twins, constitute a task for the policy economist to separate them, as a second-best option. Thus we translate the *poverty question* to the *food question* with a view to finding the policy options in answering it in its complex and multidimensional nature.

Posing the food question (or more appropriately food questions) is premised on three aspects of our knowledge base about its composite nature, namely: the statement of the food problem itself that gives context to the *food question*; the understanding of the concerns about food security as a theme of food policy governance; and, the highlight

of the dynamic elements of the food system that make it possible for hunger and malnutrition to exist, sometimes side by side with abundant food supply in Nigeria and other parts of developing world. The various dimensions of the problem provide the appropriate platform for raising the issues and the questions, in order to identify the policy options in proffering the solutions.

The statement of the food problem is in terms of the disparity between what is and what should be about ability of people to feed and feed well at all times. This may be stated in a cause-effect-consequence framework using the hypothetical *food problem tree* (Fig 3). In the framework, we have the *causal roots* that give rise to the *problem stem*, which in turn generates a number of *effect branches* that finally produce several *consequence leaves*. Accordingly, the root causes of the food problem are three in number: (a) **Poverty** - The people are trapped in a vicious cycle of poverty through the lack of financial and infrastructural capacity to access or acquire normal food entitlements; this leads to poor nutrition and hampers their knowledge growth and body physique; further, the poverty of knowledge hampers them to exercise the right choice of food items thereby compounding the health problems; and, the poor physical and health conditions of the people prevent them from performing productive activities, which situation then loops backwards to reinforce their bad income positions; (b) **Policies** - The national and global bodies implement aberrant and conflicting policy actions directly or indirectly affecting the food system; the trade regime is characterized by unfair terms in disfavor of developing countries, namely the implicit heavy subsidy elements in the agricultural production systems of industrialized countries that are harmful to the poor countries in the international food market, as well as the past and subsisting domestic and international policies that fail to put food security at the top of the governance agenda, usually focusing on short-term measures to alleviate the symptoms of the food problem rather than eliminating the causes; etc., and (c) **Socio-economic discontinuities** - The environmental hardships or disasters coupled with incessant conflicts and war represent frequent perturbation of the equilibrium of the food system.

As further illustrated in Figure 3, the stem represents the main axis of the food problem, consisting in the inadequate availability of food coupled with inability or incapability of the people to access food that is available so they cannot feed and feed well at all times, a situation that is different from the wish and aspiration of society that its people consume foodstuff in sufficient quantity and quality to ensure normal and functional life. This problem produces a number of related effects, including poor health, poor body physique, poor knowledge situation, which render human life useless and wasted. These produce the symptoms of the food problem that we see starvation, pestilence, squalor and a host of others together with their several diverse derivatives.

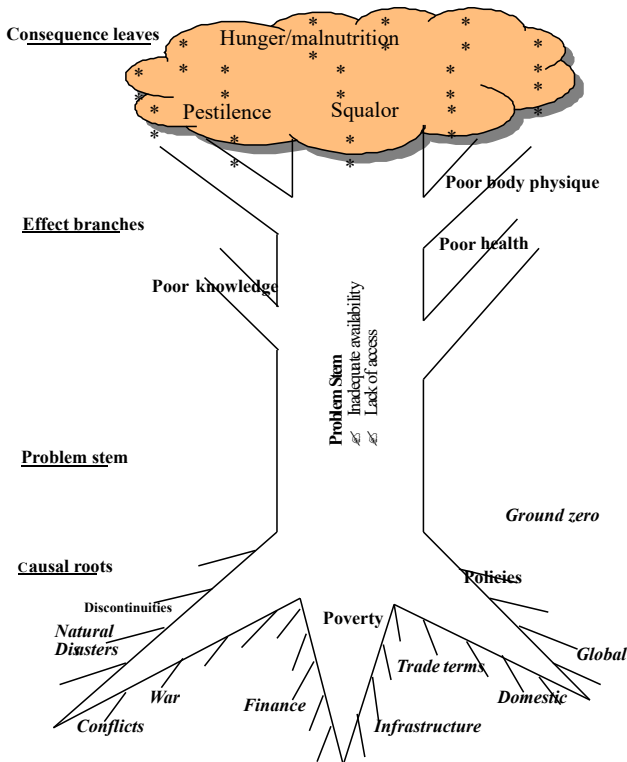


Figure 3:
(Ayoola 2004)

Hypothetical Food Problem Tree

The different segments of the food problem analysis give rise to the first set of the food questions as follows:

✍ *The root questions:* What is the true character of poverty in Nigeria and how can the people escape from the vicious cycle of poverty and its contributions to the food problem? Why is the policy environment of Nigeria perpetually wrong and how can it be got right for the benefit of the food system? What is the formula to diffuse tension in several parts of the country to prevent the occurrence of conflicts and war and how can the harsh natural environment be mitigated effectively so more food can be produced?

✍ *The shoot questions:* What are the proximate determinants of inadequate food availability and access in Nigeria and how do they interact or interrelate to make food problem persist? What is the nature of nexus of the food problem on the one hand, with the health and knowledge conditions of the people on the other hand and how best can this be resolved? What factors govern the manifestation and of the consequences of the food problem in terms of starvation, pestilence and squalor and how can we minimize their frequency and intensity in Nigeria?

Based on these questions, the defining elements of food security of a country or a region consist in sustained *availability* of food and *access* of the people to calories and nutrients sufficient for them to live a functional and productive life. Food security governance entails the binding commitment of national, regional or global authorities to ensure food security of the people in their spheres of influence or authority. The concomitant food security and related governance issues and questions are as follows.

✍ The food surplus countries and regional entities are usually quick to supply food as emergency relief to developing countries when disasters strike or when famine intensifies but are less keen to support long-term food security; why is this so?

✍ Food security governance encompasses more than the economies of production, consumption, distribution and marketing but it also encompasses the linkage of physical environment and socio-economic and political aspects of society; what is the explanatory power of each of these activities in the food equation of Nigeria?

✍ The attainment of food self sufficiency is neither a necessary nor sufficient condition for food security; how does it get established that international and regional division of labor makes sense so a country's individual food self-sufficiency objective does not supersede the global

or regional food security objective? What are the mechanisms for resolving the inherent conflicts and trade-offs between food import dependence and farm input import dependence in Nigeria?

- ✍ The governance of food security is premised on the activities of multiple stakeholders, inclusive participation, democracy etc.; how do we resolve the self interest of the actors and address the food question more properly?.

The nature of the food problem is ever changing, implying a compelling need for the problem analysis to specify the dynamic variables involved. One such variable is the continuous **urbanization** of the society that automatically translates into urbanization of food consumption by the people. A key aspect of this is increasing emergence of supermarkets in food retailing, which their demand for specific quantities and qualities of food items and at particular times of delivery do not fit into the scheme of the small scale farmers that are preponderant in developing countries. Another variable of change in the food system is what may be termed “**multinationalization**” of supply, which extends the food chains beyond country borders through the activities of supermarkets to source food items globally. Yet another variable is the **diversification** that integrates the food industry with many other sectors such as packaging, transport, distribution and manufacturing. This has important implication for the distribution of the workforce in the food industry, implying that though the overall population in agriculture generally may have increased the proportion retained on farms has actually fallen significantly.

The combination of these changes leads to nutritional changes, hence the observed changes in the nature of nutrition diseases from mere under-nutrition, more and more towards the other more pathological food related diseases such as obesity, heart diseases and diabetics.

The dynamic variables lead to a different set of food security issues and questions, which sometimes warrants new institutional approaches, as follows:

- ✍ *Efficiency and equity issues:* The scope of the policy options that exist to manage the dynamic character of the food system is large, but the choice of option should be consistent with efficiency objectives of the economy. What are the opportunities to explore for this purpose and what fears nurtured by the people in managing the change process? Who are the gainers and losers of the change process and the institutional mechanisms for managing it? Who are the intended and

unintended beneficiaries of the change process?

✍ *Safety issues:* Managing the changes in the food system frequently leads to second generation concerns particularly of health and environmental concerns. What are the mechanisms for guaranteeing food safety consistent with the food system change?.

✍

Suffice it to say that the food security situation in Sub-Saharan Africa (SSA) is grim both in its technical and governance aspects. The real issues are embedded in complex historical socio-economic and political circumstances that have shaped the food security policies over time and the response of national and international bodies to the situation. Specifically the precarious food situation in SSA is the cumulative effect of structural problems, which have had disastrous impacts on agriculture and infrastructure. Two classes of countries have evolved in this regard: those in the eastern/northern parts of Africa, in constant threat of desert encroachment and sporadic conflicts Ethiopia, Eritrea, Sudan, Mali, Mauritania and Niger; and, those in the southern parts of more recent concerns Lesotho, Malawi, Mozambique, Swaziland, Zambia and Zimbabwe.

So, how food-secure is Nigeria? To answer this question we consider two situations side by side. The first is when the output of a basket of ten major energy food crops produced between 1999 and 2005 was analyzed, which amounts to an annual average output of 78 million MT in grain equivalents (GE), or about 273 billion calories, exceeding the 30 million MT GE required by 120 million Nigerians at the time (2,500 Kcal/day/caput basis). The second situation occurred last year when the soaring food prices compelled the federal government to enter the panic mode to consider the direct importation of rice, as food prices escalated in the country within a short time. Initially the government hurriedly ordered the stock of food items in reserve to be released to the general public but only 65,000 tonnes could be released. Then N80 Billion worth of rice (500,000 MT) was approved for direct importation, which was eventually reversed based on the weight of public opinion against it. The motive behind the panic measures was the fear that the soaring food prices in the world market could introduce significant shocks into the Nigerian food market, given the status of Nigeria as a net importer of stable food items, wherein rice and wheat predominate among others in the food import bill of \$2.8 million per annum. At that time it was established that rice output in 2007 was 3.4 million mt out of which only 1.4 million mt was milled, which left 2.0 million mt rice paddy unprocessed

because of inadequate processing capacity; otherwise the decision to import 500,000MT would have been practically unnecessary which underscores the critical need for this country to take its food security more seriously.

This implies that food availability is only a necessary but not sufficient condition for food security; that is, for food output to translate into food security all the associated issues should be satisfactorily addressed namely, availability, accessibility and utility of food⁴. Though a surplus food situation had existed before as previously calculated above, the food security situation was still threatened by the rather low capacity of the National Food Reserve Programme, which operates at an average of 300,000 MT (installed - being only 1% security level), and 100,000 MT (highest stock level attained - being a paltry 0.3% security level). Therefore the answer is that **Nigeria has food but not food security**. Even if we discount the food items for the energy available from other sources such as other crops and livestock items or drinks, we still are significantly food insecure in that sense. It is obvious the country is grossly incapable of defending itself against sudden supply shortfall in energy food items, given the low capacity and stock levels of the food reserves.

Role of government

There is no other issue as vexatious in the agricultural economy of Nigeria as the role of government in the sector, with particular reference to the optimal division of labour between the federal government and the state government. While there is no disagreement among policy economists about the demarcation of roles between the government and the private sector, the line of role demarcation between the federal and state governments is manifestly controversial since the country gained independence in 1960. In demonstrating the political economy aspects of this issue we recall a few controversies in the agricultural economy in the past:

1. Controversy over the establishment of agriculture ministry at the federal level The regional constitution was signed into law in October 1954 which, by virtue of a special clause, agricultural development was included on the residual legislative list, which made it a regional responsibility only. Therefore, the federal agriculture ministry could not be created. Therefore in

4. Availability means to be made available in the market (i.e. it means more than output); accessibility means the ability of consumers to reach the food in the market (which includes financial accessibility otherwise called affordability); utility means possibility that the food consumed will be found useful in the body for a strong and healthy life.

The federal government consulted the FAO which conducted a study and recommended the establishment of a federal ministry, but this was still constitutionally impossible. In resolving this controversy, the Federal Government established a pseudo agriculture ministry which it carefully named Federal Ministry of Natural Resources and Research, avoiding the word agriculture so as not to offend the political sensibilities of the Regional governments. It took the courage of a military government under Gowon to establish a full-fledged federal ministry for agriculture by administrative fiat, having suspended the constitution ((Nigeria, Official Gazette Vol. 55 No. 10 of 7th February 1966).

2. *Controversy over the activities of RBDA* - The River Basin Development Authorities (RBDAs) were established by the federal government (Decree 25, 1976) with the aim to develop the economic potential of the massive water bodies available in the country. In particular, they have specific mandates in irrigation services and fishery. Eleven authorities were originally established; the figure grew to eighteen before it was reversed to the original number. A number of them grew out of proportion and the operations of some others suffered from intensive political interference. A case in point was one of them (Ogun-Oshun RBDA), which its activities were stepped up by the NPN-led Federal Government during an election year thereby threatening the success of opposition party (UPN) at the next election in that area that constituted their stronghold. As a result the opposition party smelled a danger as the Basin Authority made the Federal Government more and more popular in the area, by sinking boreholes and constructing roads. Eventually the six state governments controlled by the UPN took the Federal Government to court to challenge the constitutional right of the RBDAs to engage in development works in their domains.

3. *Controversy over the slow pace of establishing the ADPs* - The establishment of ADPs in the country started with World Bank funding as enclave or command-area projects, to be expanded after five years to state-wide projects, in sequence over time. The first generation of ADPs includes the enclave types located at Funtua (April 1975), Gusau (April 1975), Gombe (November 1975), followed by Ayangba (1979), Ilorin (1979), Ado-Ekiti (1981) and Oyo North (1982). However, certain state began to agitate about the slow pace of the sequence of establishing the projects in reaching them, questioning the Federal Government about

the wisdom in some states waiting for others while development was going on elsewhere. This led to the introduction of similar projects pending World Bank assistance, known as ADAP (Accelerated Development Area Projects) in Anambra and Imo States. In some other states the federal government was also questioned for keeping other parts of the state stagnant while the enclave projects were being implemented in certain places. This led to the need to repackage new projects straight as state-wide projects from outset.

The observed instances of friction between the federal and state government is an issue about the optimal distribution of roles between the two tiers of government, which is a constitutional matter. The relationship between federal and state governments in agricultural development is defined in the constitution, so the issue is how to give practical effect to this relationship. The present 1999 constitution makes provision for agricultural development on the concurrent legislative list in the Second Schedule, Legislative Powers, Part II, which implies that it is a joint responsibility of both the federal and state governments. Yet the same constitution has established a division of labour between the two tiers of government, which is generally ignored. Section 4 (17c and d) states: “*The National Assembly may make laws for the federation or any part thereof with respect to ... (c) the establishment of **research** centres for agricultural studies; and (d) the establishment of institutions and bodies for the **promotion or financing** of industrial, commercial or agricultural projects*”. Going by the spirit and letter of this constitutional provision, it is obvious from the implementation of several programmes, such as fertilizer procurement and distribution, the Federal Government is overreaching its bound, in the agricultural development process.

Policy failure

A policy fails when the government cannot achieve the deliverables envisaged. In Nigeria the agricultural economy is so replete with instances of policy failure that it is sometimes asked whether it is in our character or in our stars; or as Idachaba put it, “whether it is sometimes a mistake of the heart or of the head”.

A policy can fail at two levels, namely, in terms of policy discontinuity (instability) as the government or regime changes; and in terms of policy indiscipline as policy commitments are not honoured. Policy instability often takes the form of perturbations of the organization or institution for

policy formulation and implementation, arising mostly from (a) frequent fusion and breakages of parts of the main ministry, and (b) frequent personnel changes in leadership positions. The evidenced organizational instability and high rates of personnel turnover in the political, administrative and professional leadership positions create adverse effects. 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. For instance, in the past the average length of stay of an agriculture minister in office was as low as 1.2 years (Ayoola 2001) until recently when we witness a modal tenure of 6 years, compared to the average length of stay of 11 years in the colonial period with a modal tenure of 33 years.

It is further observed that the inner mechanisms of the agricultural ministry and other agencies of agricultural development also feature a considerable degree of institutional perturbations that creates instability, thereby affecting the ability of such institutions to deliver on its mandate negatively and to remain on a steady growth path in the medium to long term. A practical case in point is the set of agricultural universities established since 1988 as agencies of the government for the scientific transformation of the agricultural economy to greater heights of performance. Qualitative empirical evidence shows that the inner mechanisms of these institutions are also not immune to a perturbation that portends failure in performing their statutory functions⁵.

According to the Morrill Act of 1862 in the United States, the distinguishing features of an agricultural university is the role in the delivery of extension services and its constant influence of the policy process for shaping and re-shaping the character and performance of the agricultural

5. At the University of Agriculture Makurdi, such an institutional perturbation experienced had its roots in the ill-advised indigenization process of the past administration, which triggered the emergence of a period in the life of the institution characterized by inordinate ambition, frivolities and incompetence of its policy authorities. The ensuing hullabaloo led to the huge harvest of litigations in court against the policy authorities, which gradually steered the institution off its course, almost grounding the institution to a halt. Unfortunately my humble self was instrumental to ten among such court cases, wherein I was plaintiff in nine of them, some of which graduated from Magistrate Courts to High Courts, to the Appeal Court and Supreme Court before the dust began to settle. In the circumstance, the policy authorities of the university became so embattled that the tenets of academia began to disappear, let alone the pursuit of its mission and mandate. Indeed some of our colleagues were caught in the web and embarked on the formation of an aberrant group called Indigenous Lecturers Association, thereby bringing the academic profession down from its esteemed position of value in the global community of intellectuals, to its lowest ebb of its value as a body of indigenous peoples of the primordial age.

economy. Towards this end a typical agricultural university in the USA, such as ISU, establishes a Cooperative Extension Centre (CEC) headed by Provost of Extension equivalent to a Deputy Vice Chancellor. The CEC is responsible for delivery of extension in its own state and the constituent counties, thereby integrating teaching, research and extension services under a single administrative system, the university. For doing so the three tiers of government – federal, state and county – “cooperate” by providing funds as line item votes in their annual budgets for the university to do the extension work. However in Nigeria, particularly University of Agriculture Makurdi, the true meaning of “cooperative” has been lost and the CEC exists more or less as consultancy unit with little contact with farmers in Benue State and little resources to deliver model extension services in the state.

The role the agricultural universities in shaping the policy environment of the agricultural economy, is also crucial to the success of these institutions. In the US this role is performed through centres of excellence established for the purpose, as the critical think tank for government and other stakeholders in the policy process. Such a centre was established was established at UAM by name Centre for Food and Agricultural Strategy (CEFAS), which I had the privilege to lead as Director between 1995 and 1998. Thus the value added of a policy analysis and advisory organ of the typical university of agriculture, which is unique, derives from the ability of the institution to directly tap into teaching, research and extension activities going on in the various academic colleges directly, to be synthesized into profitable policy advice. However CEFAS is now defunct, having been recently closed down when it failed to generate the desired effect for many years.

Nonetheless serious extension work and serious policy work represent the value added of an agricultural university; which is why we appear as *jesters* as these institutions continue to be domiciled in the Federal Ministry of Education in Nigeria rather than the Federal Ministry of Agriculture where they rightly belong. To the contrary, owing to better understanding and better appreciation of the concept, the agricultural universities are closer to the US Department of Agriculture (USDA) and the Ministry of Agriculture of India where they form the intellectual backbone behind the status of agricultural economy of those countries.

As to policy indiscipline as a source of policy failure, the most common form of this is budget indiscipline (or fiscal indiscipline), whereby public authorities fail to achieve high correlations between the sets of initial budget allocations and the actual budget allocations. The issue emanates from the

general observation that in several cases the initial allocations and actual allocations have little or no bearing to each other, so the agricultural population suffers from what is termed *budget illusion*. Budget illusion is characterized by euphoria among the people who are satisfied with the government for making initial allocations but become subsequently disappointed with the same government for not following through with its budget commitment. The presence of budget illusion regimes is indicated by the observed divergences between the factual and counterfactual estimates at the same points in time. During the military regime, which had no opposition, policy authorities tended to suppress the manifestation of budget illusion, unlike the civil regime whereby people are free to criticize the government. My study on this subject indicates a few interesting findings (Ayoola 2006).:

- ✍ That the preference for agriculture is higher for nominal allocation than actual expenditures, which implies that policy authorities are deceptive in their allocative behaviour regarding agriculture in the budget;

- ✍ That the preference for agriculture in the recurrent budget is higher than capital budget in both nominal and actual terms, which suggests that most of the funds go into paying salaries and other personal emoluments rather than implementing capital projects that will generate growth in agriculture as desired;

- ✍ That allocative behaviour of policy authorities with regard to recurrent and capital budget allocations is not different between military regime and civilian regime, which suggests, that there is no basis to infer that one regime exhibits budget discipline more or less than the other.

Against this background, the need arises for measures for improving the preference for agriculture in the public budget and in meeting the country's commitment to international protocols and counterpart responsibilities, such as the minimum allocation of total budget to agriculture every year.

Policy due process

The notion of policy due process is predicated on a view of policy and law as one and the same thing, being opposite sides of the same coin with the

difference between the two words disappearing from the standpoint of government. Indeed policy is law made unto oneself (government onto itself), so the incessant violation of due policy process by government implies that government itself has failed to obey its own laws as far as agriculture is concerned. Even when policy is not legislated it has the instrumentality of the law, as a means of governance; a means of controlling social behaviour; a means of resource distribution; a means of conflict resolution; a means of safeguarding expectations; a means of expression of voice and rights; and a means of determining controversies. The policy process for developing the agricultural economy in Nigeria has featured copious instances to substantiate all these instrumentalities, so the difference between policy and law is not real but only apparent. Thus the same tenets of due process of law apply to due process of policy in reality, namely: policy accountability, policy transparency, policy responsibility; etc.

We recall some instances whereby due process of policy was not followed in the management of the agricultural economy of this country, notwithstanding the good intentions of government behind such actions:

- When the agricultural universities were transferred from the Federal Ministry of Agriculture to the Federal Ministry of Education by executive fiat without consideration of the law establishing them;
- When the NACRDB was expanded and re-designated without reference to the National Assembly as required by law; we recall that this formed part of the fourteen grounds of the attempted impeachment of the President at a time;
- When the a regulatory system for fertilizer was not established till date in disregard of the provision for that in the National Policy on Fertilizer approved by the Federal Executive Council in 2006;
- Etc.

Food as a right

There is a growing recognition of the dignity inherent in all human beings to enjoy their natural right to food in adequate quantity and quality; this right is inalienable, actionable and justiceable. The motive behind this is to empower the people to demand from policy authorities, responsible implementation of programmes and projects in such ways as not to violate their right to food. This demand consists in any action of a civil nature to hold government accountable for the failure of its policies to deliver their food entitlements. The intuitive reasoning behind the concept is that “a human

right is not something that somebody gives you; rather it is something that nobody can take away from you". That is, right to food cannot fall freely on the ground like the Biblical manna from heaven, but something to be explicitly demanded by the people themselves before the government will be willing to recognize it.

The notion helps in raising the political cost of policy instability and policy indiscipline in agriculture, thereby addressing the hunger spots of human society, with a view to alleviating the various shocks to food security such as conflicts, natural disasters, pests and diseases; HIV/AIDS; climate change; energy crisis, etc. Thus, contrary to popular opinion, the advocates of the concept of right to food are not apologists of state socialism or protagonists of a welfare state, rather they are those who seek to guarantee the right of people to adequate food without undermining the responsibility of individuals "to farm to eat" or to "work to eat", and the obligation of the government to respect, protect, facilitate and fulfill the right of citizens to adequate food.

To clarify the issue further, none of these conditions demands that government should produce or distribute food to the whole population, but some of them imply that government has the vicarious liability for the consequences of chronic hunger among the people occasioned by failure of its policies to guarantee people's right to adequate food. Suffice it to say that for the people themselves to enjoy the right to their food entitlements, such rights must be earned through disciplined hard work as a matter of social and economic responsibility. However, the case of vulnerable groups is different, which requires the provision of special safety nets to enable them access their fundamental rights to food, notwithstanding their low net-worth status in society. Therefore right to food should not be misconstrued to mean production and distribution of free food, but a concept that provides the framework for governments as **duty bearers** to act responsibly in the implementation of its food security programmes, and for empowering the people as **right holders** to hold government accountable for failed policies that offend or violate their fundamental human right to food.

The convergence point of the notion of food security and the notion of right to food is real, whereby the main elements of the former (namely Availability, Accessibility and Utility of food) meet the main elements of the latter (**Participation; Accountability; Transparency; Equity; Empowerment; Due process; and Rule of law**). That is, the concept of right to food is premised on certain principles of good governance including the following: FAO (2009)

✍ Applying human rights based approach to food security means a

change in perspective. In a rights-based perspective taking steps to achieve food security is not a matter of discretion of governments; it is their legal obligation. Specifically, human rights law provides framework that can strengthen and improve such good practices, implying that if all those who are involved in food security work draw systematically on human rights principles and standards, both the process and the outcomes are likely to be more objective and transparent, and enjoy greater legitimacy in addition to legal authority.

✍ The right to food does not dictate the design of food security policies or strategies but provides a yardstick for assessing government performance, and establishes the right of persons to challenge and hold government to account for what has been done or not done in making the nation food secure or insecure. Herein **the concepts of food security and the human right to food converge, though there are still important challenges involved in bringing them together at both analytical and operational levels.** The dramatic rise in food prices has put hunger and food security to the top of the international agenda, including international human rights agencies (such as Human Rights Council). This provides renewed urgency to the search for sustainable food security solutions. We believe the right to food can and should be a major part of that search.

✍ The right to food reinforces **the concept of food security with human rights principles.** This means that **decision-making processes** - formulation, implementation and evaluation of laws, policies and programmes - **must be participatory, transparent and non-discriminatory.** They must be taken in **full respect of human dignity and be based on the rule of law.** Through this process, people are empowered to take control of their own lives and hold their government to account.

Therefore, FIF under my leadership is presently collaborating with the All Farmers' Association of Nigeria (AFAN) to lead a coalition for advocacy to sponsor a special clause on right to food in the Nigerian constitution under review.

SUMMARY AND CONCLUSIONS

The agricultural economy of Nigeria has its background in the pre-colonial, colonial and post-colonial periods of policymaking and development administration. The agricultural economy was investigated for several years, through a huge database accumulated from diverse sources over time subjected to model analysis of varied types. The modest contribution to knowledge of economic phenomena was in terms of the deathly embrace theory of the two-sector agricultural economy structure, which is a theory of policy that offers an explanation for the fortune of agriculture, in relation to industry and the rest of the economy.

The empirical results reveal the important roles of the sets of farm input and commodity policies as proximate determinants of agricultural economy performance in Nigeria and other developing agricultural economies. The discussion of findings centres on emerging issues about the agricultural economy focused on poverty reduction and food security as the overriding policy theme.

By and large, the agricultural economy of Nigeria has demonstrated a prodigious behaviour over time. The prodigies of the agricultural economy derive from its great resilience and incredible ability to withstand the nuances of policy as a process and the aberrations of the policy environment in terms of perpetual failure, constant instability and inconsistency, among other factors. Moreover the demand side of the policy process is generally taken for granted, which denies the agricultural economy the full benefit of participation of stakeholders in the policy process.'

In conclusion, the rate of growth and speed of development of the agricultural economy of Nigeria depends on effective measures to reform the policy process for food security, wealth creation and employment generation. Therefore the following recommendations emerge:

- ✍ **On poverty reduction and food security** - That the food security policy of the country should be properly articulated into a harmonized, internally consistent document, prior to effective design and formulation of strategies of implementation.
- ✍ **On Farm input policy** - That the fertilizer sector should be strengthened with a regulatory system as contained in the National Fertilizer Policy for Nigeria.
- ✍ **On commodity policy** - That the activities of agriculture ministry and commerce ministries should be better coordinated with a view to eliminating unnecessary boundary maintenance practices and fostering a common approach towards improved trade and commerce in agricultural commodities.

- ✍ **On the role of government** -That machineries should be set in motion to limit the role of Federal Government in agricultural development to research and provision of funds as constitutionally assigned, while the role of State Governments should be stepped up in meeting their constitutional responsibility for practical actions on the ground towards agricultural development in their respective domains.
- ✍ **On policy failures** -That the political cost of policy discontinuities and institutional instabilities should be raised in this country, through the promotion of policy advocacy in the agricultural sector and through the active involvement and participation of farmers and other rural poor in the policy process; as well as through legislation of major policy statements and commitments.
- ✍ **On policy due process** - That the observance of policy due process should be taken more seriously in Nigeria, through the establishment of a Policy Due Process Committee within the structure of the National Council on Agriculture, which should constantly report violations of policy due process in the agricultural economy to the Council for its quick anticipatory remedial interventions; as well as through legislation of major policy statement and commitments of government.
- ✍ **On food as a right** -That government at all levels should recognize food as a natural right of the citizen of Nigeria, which necessitates the provision of a special clause in the constitution under review specifically for the purpose, and subsequently creates the need for a **Bill of Rights to Food** in Nigeria.

At this point I beg to rest my case.

Thank you for listening.

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