



RESEARCH ARTICLE

AGRICULTURAL INSURANCE IN NIGERIA AND ITS ECONOMIC IMPACT

Festus M Epetimehin

Joseph Ayo Babalola University, Ikeji Arakeji, Nigeria

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ABSTRACT

Agricultural production faces myriad of risks. Nevertheless, two major risks are of concern to the agricultural sector- price risk caused by potential volatility in prices and production risk resulting from uncertainty about the levels of production that primary producers can achieve from their current activities. It is likely that these major risks will increase in the future – price risk due to liberalization of trade and production risk caused by the effects of climate change. Agricultural risks not only affect farmers, they also affect the whole agribusiness value chain. Each of the participants along the supply chain, from the Government, Financial Institutions, suppliers of inputs, the distributor, the trader, the processor and the end consumers, are subject to these risks. Agricultural investments unfortunately are among the most risky economic ventures one can embark upon, the absolute dependence on unpredictable weather conditions, like storm, flood, drought and other natural hazards make income from crop products and agricultural products like livestock poultry and dairies to be very unstable. Agricultural Insurance policies serve as securities for banks as indemnification for financial losses suffered by farmers and those in the agricultural value chain resulting from damages to their products, and also provides funds for servicing such loans. This paper is concerned exclusively with the role of agricultural insurance in the agribusiness and in the development of the economy. It gives an introduction and a review of the agricultural sector that led to the agricultural insurance decree in 1993. The paper describes the various products available under the agricultural insurance while a section was devoted to analyzing the economic impact of agriculture Insurance on the economy, then conclusion and recommendations.

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INTRODUCTION

Agriculture is the art and science of crop and livestock production. In its broadest sense, agriculture comprises the entire range of technologies associated with the production of useful products from plants and animals, including soil cultivation, crop and livestock management, and the activities of processing and marketing. The term agribusiness has been coined to include all the technologies that mesh in the total inputs and outputs of the farming sector. In this light, agriculture encompasses the whole range of economic activities involved in manufacturing and distributing the industrial inputs used in farming: the farm production of crops, animals and animal products, the processing of these materials into finished products and the provision of products at a time and place demanded by consumers.(Allen,2000:1-26). Agriculture was the key development that led to the rise of human civilization, with the husbandry of domesticated animals and plants (i.e., crops) creating food surpluses that enabled the development of more densely populated and stratified societies. Agriculture encompasses a wide variety of specialties and techniques, including ways to expand the lands suitable for plant raising, by digging water-channels and other forms of irrigation. Cultivation of crops on arable land and the

pastoral herding of livestock on rangeland remain at the foundation of agriculture. In the past century there has been increasing concern to identify and quantify various forms of agriculture (e.g.perculture or organic agriculture) and intensive farming (e.g. industrial agriculture). Interestingly, the Nigerian economy, during the first decade after independence could reasonably be described as an agricultural economy because agriculture served as the engine of growth of the overall economy (Ogen, 2003:231-234). From the standpoint of occupational distribution and contribution to the GDP, agriculture was the leading sector. During this period Nigeria was the world's second largest producer of cocoa, largest exporter of palm kernel and largest producer and exporter of palm oil. Nigeria was also a leading exporter of other major commodities such as cotton, groundnut, rubber and hides and skins (Alkali, 197:15-16). The agricultural sector contributed over 60% of the GDP in the 1960s and despite the reliance of Nigerian peasant farmers on traditional tools and indigenous farming methods, these farmers produced 70% of Nigeria's exports and 95% of its food needs (Lawal, 1997:195). However, the agricultural sector suffered neglect during the hey-days of the oil boom in the 1970s. Ever since then Nigeria has been witnessing extreme poverty and the insufficiency of basic food items. Historically, the roots of the crisis in the Nigerian economy lie in the neglect of agriculture

*Corresponding author: festusworldwide22@yahoo.com

and the increased dependence on a mono-cultural economy based on oil. The agricultural sector now accounts for less than 5% of Nigeria's GDP (Olagbaju and Falola, 1996:263). The neglect of the agricultural sector and the dependence of Nigeria on a mono-cultural, crude oil-based economy have not augured well for the well-being of the Nigerian economy. In a bid to address this drift, the Nigerian government as from 1975 became directly involved in the commercial production of food crops. Several large scale agricultural projects specializing in the production of grains, livestock, dairies and animal feeds, to mention but a few were established (Fasipe, 1990: 129-130). Sugar factories were also established at Numan, Lafiagi and Sunti (Lawal, 1997: 196). The Nigerian Agricultural and Co-operative Bank (NACB) were established in 1973 as part of government's effort to inject oil wealth into the agricultural sector through the provision of credit facilities to support agriculture and agro-allied businesses (Olagunju, 2000: 98).

In spite of these efforts, it is heartrending to note that as from the mid 70s, Nigeria became a net importer of various agricultural products. In 1982 alone, Nigeria imported 153,000mt tons of palm oil at the cost of 92 million USD and 55,000mt tons of cotton valued at 92 million USD (Alkali, 1997:10). Between 1973 and 1980, a total of 7.07 million tons of wheat, 1.62 million tons of rice and 431,000 tons of maize were imported. Thus, from N47.8 million in the 60s, the cost of food imports in Nigeria rose to N88.2 million in 1970 and N656, 527.0 million in 1995 (Alkali, 1997:19-21) see table3

The decreasing contribution of agriculture to the GDP and export earnings, coupled with the inevitable down turn in oil production and revenue generation, occasioned by the worldwide glut and decreasing prices, have been the major factors dictating the need to activate agricultural production. In the 1985 budget, 20% of the 1.06 billion total capital allocation went to agriculture. In tying down such a huge amount to agricultural projects, the government quickly expressed the desire to introduce an agriculture insurance scheme to secure all investments in agriculture. In 1993, Nigeria brought into law the establishment of NAIC (Nigerian Agricultural Insurance Corporation) through decree number 37. to carry out the following functions:

- (a) To implement, manage and administer the Agricultural Insurance Scheme, established by section 6 of this Decree;
- (b) To subsidize the premiums chargeable on selected crops and livestock policies from the grants obtained from the Federal and State Governments and the Federal Capital Territory, Abuja;
- (c) To encourage institutional lenders to lend more for agricultural production having regard to the added security for their loans provided by the Corporation;
- (d) To promote increased agricultural production generally in order to minimize or eliminate the need for adhoc assistance previously provided by Governments during agricultural disasters;
- (e) To carry on insurance business on normal commercial basis and without subsidies on premiums as insurers of buildings, machineries, equipment and other items which form part of the total investment on farms and to reinsure this aspect of its operations through well

established channels with reputable reinsurance companies;

- (f) To operate other types of insurance business as may be permitted by the Commissioner of Insurance at competitive premiums; and
- (g) To do anything or to enter into any transaction which in the opinion of the Board is calculated to facilitate the due performance of its functions under this Decree.

Agricultural Insurance

Agricultural risk management relies on an optimal combination of technical and financial tools, whenever they are available, to deal with the multiple sources of agricultural risk. Agricultural value chain participants may avoid risk: for instance, by choosing not to select a particular crop or crops which they consider of high risk for the area in which their farms are located. They may also mitigate risks by seeking to lessen the risk through, for example, planting crops only in very favourable conditions or developing further their infrastructure to improve irrigation or minimize the effect of frost. Lastly, they may transfer all or part of the risks to a third party through an insurance contract. They may also mitigate the effect of financial effects of these risks by creating emergency reserves from profits in good years, a form of self insurance.

What is Agricultural Insurance?

In general, insurance is a form of risk management used to hedge against a contingent loss. The conventional definition is the equitable transfer of a risk of loss from one entity to another in exchange for a premium or a guaranteed and quantifiable small loss to prevent a large and possibly devastating loss. . Agricultural Insurance is a financial tool to transfer production risks associated with farming to a third party via payment of a premium that reflects the true long term cost to the insurer assuming those risks. Agricultural Insurance is a special line of property insurance applied to agricultural firms. In recognition of the specialized nature of this type of insurance, insurance companies operating in the market either have dedicated agribusiness units or outsource the underwriting to agencies that specialize in it. There are several features of this type of insurance that validate it being treated as a special line of business. Difficulties in achieving adequate diversification because of the nature of the risk, asymmetries of information in underwriting, the geographical dispersion of agricultural production and the complexity of the biological processes of production, which requires skilled and expert underwriting, justify it being considered a special business line. Basically, agricultural insurance is designed to provide covers for financial losses incurred due to reduction in expected outputs from agricultural products. The major products are crops and livestock. Others include fisheries and forestry. Crop insurance and livestock insurance provide the two broad categories for which commercial insurance covers are designed. Because of the complexities brought to agricultural ventures due to mechanization, a broad range of traditional policies, namely personal accident, fire, vehicles, machinery and public liability covers are made essential parts of a comprehensive agricultural insurance package. Agricultural investments unfortunately are among the most risky economic ventures one can embark upon. The absolute

dependence on unpredictable weather conditions, like hailstorm, flood, drought and other natural hazards make income from crop production to be very unstable. Other agricultural products like livestock, poultry and dairies are exposed to the risks of which occur in catastrophic proportions. The recent cases of bird flu and pig swine in Nigeria comes readily to mind. Agricultural insurance policies protect the farmer against these unforeseen circumstances by way of indemnification, it also serves as securities for banks as indemnification for financial losses suffered by farmers from damages to their products and will provide funds for servicing such loans.

Agricultural Insurance Products

Crop Insurance

Crop outputs are affected by weather conditions which in many cases are unpredictable both in terms of frequency of occurrence and severity. The most serious hazards to which crops are exposed include drought, flood, wind-storms and pest infection. Others include fire, particularly in the northern part of the country. Crops in this part also exposed to fire which spread from bush fires during the dry season. Flood and excessive rainfall ruin crops in the riverside areas seasonally. Each year, the country's farmers lose millions of naira as a result of the effect of these undesirable factors on crops. A crop insurance policy guarantees indemnity for insured losses resulting from these factors. At the beginning of each season, the insured takes a policy with sum insured as the value of expected revenue from his anticipated harvest at the end of the season. Premiums are then calculated using his expected income. In the event of a claim, the proportion of damage is estimated. At the end of the crop season, the rest of the crops are harvested and sold. Claims are then settled using the average price of the proportion sold to estimate the revenue that would have been generated from the damaged portion. This done, the premium for the year is then adjusted on the basis of the revenue from sales and the claims settled.

Crop Insurance Policies

"All Risk" Insurance Policy- The "All Risks" policy as the terminology implies is a policy that covers all risks of physical loss or damage to the crop caused by the insured perils. The most common risks to which crops are susceptible are fire, flood, wind, drought and pests. For crop insurance to be meaningful to the Nigerian farmer, it should be free from excess at least for the first ten years of its operation. Thereafter, experience will tell us what excess to apply.

Harvest Policy- A harvest Policy will cover loss up to the value of the expected harvest. Usually the unit price of the crop is specified as a percentage of the expected yield. Unlike the "All Risks" policy where the indemnity is related to the actual loss suffered by the farmer, the harvest policy could be likened to the "agreed value" policy of marine insurance which stipulates what the insurer has agreed to pay in the event of a claim under the policy.

Credit Policy- A crop credit insurance covers the amount of loan given to the farmer. The sum insured under the policy is limited to the farmer's production costs upon which the loan is based.

Table 1. Sectoral contribution to export (1970-81)

(IN PERCENTAGES)			
Year	Oil	Agriculture	Others
70	57.57	25.08	17.33
71	73.68	16.31	10.00
72	82.10	10.62	7.36
73	83.10	8.67	8.21
74	92.59	4.38	3.02
75	92.65	4.36	2.97
76	93.63	5.23	1.12
77	92.68	4.69	2.61
78	93.22	6.70	0.06
79	93.81	4.21	1.96
80	96.10	2.37	1.52
81	98.18	1.08	0.73

Source – Federal office of statistics.

Table II. Sectoral contribution to Nigerian gross domestic product at factor cost 1970/71—81
(IN PERCENTAGE)

Year	Oil	Agricultural	Others
70/71	11.04	44.45	44.51
71/72	13.94	42.09	43.97
72/73	15.89	38.03	46.08
73/74	16.24	30.03	53.73
74/75	31.38	26.57	42.05
75/76	19.92	27.37	52.71
76/77	22.35	24.83	2.48
77/78	22.06	25.18	52.76
78/79	22.48	24.77	52.75
79/80	26.24	22.48	51.28
80/81	24.80	22.15	46.95
81	18.65	23.42	57.93

Source—Federal office of statistics

Table III. Nigeria's food import (1970-1995)

Period	Total Import (\$m)	Food (\$m)	Import	Food/total import (%)
1970	1,099	121		11.01
1975	6,045	640		10.59
1980	15,037	2100		13.96
1985	83,582	1286		15.36
1990	54,148	6083		11.23
1995	656,572	86,668		13.20

SOURCE: FAO Trade Year Book, (Various Issues) Rome

Table 4. Average Agricultural Production Indices (1984= Base Year)

Year	Crop	Livestock	Fisheries	Forestry
1970-74	122.00	74.6	117.6	86.0
1975-79	98.7	79.5	137.3	99.6
1980-84	94.4	90.4	134.0	103.5
1985-89	132.4	108.9	77.7	107.4
1990-94	206.9	161.6	73.4	122.3
1995-99	232.0	178.9	95.5	132.8
2000-2002	318.7	196.8	118.4	140.4

Source: CBN, Annual Report and Statement of Accounts (various issues)

The Credit Policy, unlike the "All Risks" policy and Harvest Policy is ascertainable in terms of the measure of indemnity at

the time the insurance is contracted. Another major distinction is that the credit policy is provided as part of a broader credit programmes in the promotion of agriculture. A crop credit Programme has as one of its goals the mitigation of the risk magnifying effects of increasing the debt/equity ratio. Therefore, a crop credit insurance must be evaluated in the context of the goals of the overall agricultural credit programme and specifically in terms of the contribution which it makes to the functioning of the credit system. Premium rates, as usual, are expected to be based on loss experience, which in the case of crops is very unstable. A reasonably accepted rate can only be arrived at if the climatic and meteorological data of the area are known over a long period of time. A multi-peril insurance policy covers the insured for unavoidable losses due to adverse weather conditions, plant diseases, pest infections, etc. Exclusions on such policies established farm practices.

Live stock Insurance Policies

Livestock is primarily exposed to the risk of death caused by various types of diseases. In many cases, epidemic diseases can cause catastrophic losses from deaths of an entire stock of livestock. In 1984, millions of naira was lost as a result of rinderpest attack on cattle in Borno State, Nigeria. Losses on livestock can be minimized if adequate feeding and veterinary services are available. Also, the spread of infectious diseases would be reduced if quarantines are available where infected ones can be kept away from the rest. The problems of underwriting livestock insurance are enormous. The insured farmer has to provide satisfactory protection to his stock. The insured is expected to keep records of his cattle and present them for regular cross-checking. Such information includes owner's name and address, types of breed, animal's history, disease history, sex, age, weight and number, and identification marks. Information about the feeding methods, breeding history and environmental conditions are also important for underwriters. Animals need plenty of water to survive and remain healthy, insurers must be satisfied that there will be adequate provision of water at all times. Acclimatization is also a very important factor in underwriting. The insurer has to be convinced that the animal can survive under the climatic conditions where it will be raised. Rating, like in crop insurance, is based on the expected revenue from the stock over a period of time. The claim settlement and adjustment of premiums are carried out using the same procedure illustrated under the section on crop insurance.

Other Covers

Insurance covers are necessary for the heavy machinery equipment the used in the modern agricultural ventures. Tractors, trailers, ploughs and other implements used for cultivating and harvesting cost a lot of money. Farmers need insurance covers on these to meet mortgagor's security demands as well as for the protection against public liability. It is highly probable that in the process of moving this equipment from one place to the other, a serious damage is done to public high ways. Covers for the risks can be taken under vehicle insurance.

A lot of agricultural ventures require the building and erection of solid structures. These include silos for cereals and

warehouses for various types of crops. Conventional property insurance covers have to be taken to protect the farmer from losses incurred from damages to such structures. Public liability insurance is essential particularly in situations where farms are not isolated. Risks in this category include damages done to other farmer's crops by straying cattle of the insured. In Nigeria, cattle are transported by road. Careless handling by the rearers can result in damages attracting claims. Personal accident and sickness policies are essential for the staff working on the farms. If a key employee is injured or falls sick, it will affect the activities of the farm resulting in a reduction in the activities of the farm resulting in reduction in the volume of products. With a personal accident insurance, the farmer can be indemnified for the cost of a temporary retention of another skilled person. As was mentioned earlier, most conventional insurance covers are applicable to a comprehensive agricultural insurance scheme. The requirement for underwriting is that the risks are those related to and restricted to the risks which the farmers are exposed.

Economic Impact of Agricultural Insurance

The economic impact of agricultural insurance can be categorized into three: The impact on the farmer, the impact on the agricultural credit system and the impact on the nation as a unit.

The Farmer

Mentioned has been made of the role if insurance to stabilize income of the farmers. The farmers feel relaxed that he will be indemnified. This motivates him further to explore and expand his activities which will result into greater agriculture output. The credit positions of farmers are greatly enhanced by their ability to meet their installment payments when due. In many cases, policies are taken in the names of the farmer and the lender. This offers a concrete guarantee for the lender that his loan can be recovered in case of damage too the crops. Also, an insurance policy taken in the name of the farmer and the lender encourages the bank to give higher credit lines than would have been approved without insurance. Insurance also serves as a guarantee to enable the farmers purchase modern equipment and other facilities which will increase his output.

Agricultural Insurance Credit Scheme

Most agricultural credits are granted to big-time farmers with export-oriented products. This is so because they are usually the only people who can meet the demands of the agricultural credit banks. Agricultural insurance allows credit facilities to reach a broader spectrum of farmers because agricultural insurance ensures a lowered cost of operation of the banks and also a higher recovery rate of the loans. For instance here in Nigeria, the Agricultural Credit Guarantee Scheme Fund, which has been planned by the government to boost agricultural production, is constrained by the inability of the average farmer to provide the necessary security for loans to be granted under the sheme. Besides, a great majority of the farmers cannot satisfy the following items required as approved by the Board of the Agricultural Credit Guarantee Scheme Fund.

- (a) a charge on land in which the borrower holds a legal interest or right to farm, or a charge on assets on the land including fixed assets, crops or livestock;
- (b) a charge on the movable property of the borrower;
- (c) a life assurance policy; a promissory note or other negotiable security;
- (d) stock and shares
- (e) a personal guarantee;
- (f) any other security acceptable to the bank.

These are obviously onerous tasks which had hitherto limited the impact of the agricultural credit scheme. A comprehensive agricultural insurance taken by farmers will replace these demands thereby increasing the impact of the scheme. Insurance inspectors also ensure that loans obtained from banks for agricultural ventures are properly utilized for the right purpose, by ensuring that such loans are not diverted to other ventures, the insurers indirectly act as extension agents of the banks.

Agricultural Insurance and the Nation

The disasters that befall the farmers have serious adverse effects on the financial position of the nation. Farmers who suffer losses from catastrophic events usually look up to the government for financial aid. This aid runs into several millions of naira. As the frequency of losses is uncontrollable, such aids seriously affect government's programmes. A well-operated agricultural insurance scheme reduces the responsibility of the government in this direction. Insurance acts as production incentive which on the macro level improves the food production of the nation thereby reducing imports. This in turn favours the position of the balance of payments of the country. Agricultural Insurance enhances savings and encourages cooperation between government and the people, it serves as a spearhead for development in the rural areas in particular and the country in general. It could also be mentioned that it mitigates the burden on the national budget with respect to natural hazards...

Conclusions and Recommendations

While agricultural insurance is essentially a commercial activity, it is common to see governments playing a role in the industry. Governments have an interest from the perspective of maintaining productivity for the economy and safeguarding the wellbeing of the rural community. Government presence in the market fills a void left by the private sector which is sometimes reluctant to enter this market segment due to high start up costs, high distribution and administrative costs and a lack of capacity caused by difficulties in obtaining reinsurance. Where the private sector is in the market, it often offers cover at premiums that are beyond the financial capacity of small producers. Where governments choose to intervene in agricultural insurance markets, they may adopt different approaches. According to a recent World Bank survey on public intervention in agricultural insurance performed in 65 countries, the most common mechanisms for public sector involvement in agricultural insurance markets are:

- Premium subsidies- the survey revealed that the most common type of public sector support to agricultural

insurance is through premium subsidies; 63 percent of the surveyed countries use this mechanism to support livestock insurance

- Investment in product research and development (R &D), training and information gathering—41 percent of the countries in the survey reported public sector investment in R&D, training and information gathering for crop insurance and livestock insurance respectively
- Agricultural insurance legislation—the study showed that the development of specific agricultural insurance legislation is also an important form of support to agricultural insurance, special legislation for crop and livestock insurance was evident in 51 percent of the surveyed countries respectively.
- Public sector reinsurance—32 percent of countries in the survey reported public sector reinsurance programs for crop insurance and livestock insurance respectively.
- Administration cost subsidies—the study also revealed that public sector support through crop and livestock insurance administration cost subsidies is a less common practice, with only 16 percent of the surveyed countries providing administration cost subsidies for crop insurance and livestock insurance respectively.

There appears to be a correlation between the level of public sector support and the penetration of agricultural insurance. Public sector support is high in the United States and Canada and these countries account for 70 percent of the written premium in the market. The government of many European countries provides support and Europe writes 17 percent of the premium. In Africa and countries such as Australia and New Zealand where there is little or no public sector involvement, the levels of written premiums are very low. Three models for the delivery of agricultural insurance can be identified: *State controlled systems* (often referred to as fully intervened systems), *Public-private partnership* and *pure market systems*. Fully intervened systems are characterized by a high level of Government support and the existence of one single insurance product which is usually commercialized by a state owned insurance product which is usually commercialized by a state owned insurance monopoly.

The problems that are attendant with the introduction of an agricultural insurance scheme were partially touched upon in the preceding parts of this paper. Other problems include the enlightenment of the farmers. In a predominantly uneducated society of farmers it will be a herculean task to get the scheme to the generality of those who need it. Objective rate-making can only be carried out with up-to-date and reliable statistics of weather and meteorological experience over a long period of time. Statistics of harvest per hectare as well as of probable losses are also essential for sound underwriting. The availability of adequate trained personnel to man the specialized areas of the scheme is definitely an important factor for the success and continued management of an agricultural insurance scheme. As regards the other aspects of agricultural insurance that are commercially viable, e.g. livestock and agricultural equipment, the insurance industry should be able to encourage their members to venture into these areas in order to complement efforts at governmental

level, towards the development of appropriate insurance schemes for all aspects of agriculture. To improve upon the agricultural output of this country, it is highly recommended that the government must look at the problems of the agriculture sector, identify the various qualities of risks threatening the farmers such as insufficient financial power to pay the premium of agricultural insurance, small fragmented and disorganized agricultural land, the low level of social, cultural and educational standards in agricultural sector. Finally, even though the government specified low interest rate on loans for agricultural projects, the banks and financial institutions must realistically be encouraged to grant loans to the farmers. A major factor the banks should also consider is the ability of the farmers to repay loans, if there are unfavourable returns from its products.

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