

31 and macro credit facilities for the small, medium and large-scale producers, processors and
32 marketers.

33 However, agriculture contributes immensely to the Nigerian economy in various ways, namely,
34 in the provision of food for the increasing population; supply of adequate raw materials (and
35 labour input) to a growing industrial sector; a major source of employment; generation of foreign
36 exchange earnings; and provision of a market for the products of the industrial sector
37 (Okumadewa, 1997; World Bank, 1998; Winters., 1998; FAO, 2006). The Nigerian agrarian
38 sector has a strong rural base; hence, concern for agriculture and rural development become
39 synonymous with a common root.

40 Support for agriculture is widely driven by the public sector, which has established institutional
41 support in form of agricultural research, extension, commodity marketing, input supply, and land
42 use legislation, to fast-track development of agriculture. These are aside from the private sector
43 as participation is not limited to local or foreign direct and portfolio investment financing, but
44 sponsorship is also extended to academic research as well as a breakthrough on agricultural
45 issues in universities, capacity building for farmers and, most importantly, the provision of
46 finances to farm businesses. International governmental and non-governmental agencies
47 including the World Bank, Food and Agricultural Organization of the United Nations, etc., also
48 contribute to agriculture through on-farm and off-farm support in form of finance, input supply,
49 strengthening of the technical capacity of other support institutions, etc.

50

51 **1.1 Statement of the Problem**

52

53 Here the important role which the agricultural sector plays in the development of a nation,
54 successive Nigerian governments at the Federal, State and Local Government levels have not
55 been able to adequately address the specific constraints in an attempt to increase agricultural
56 production in Nigeria. For example, the Nigerian government was reported to have said and
57 quoted in Ruma (2008) that “nevertheless, the agricultural sector’s contributions to the economic
58 growth and development are yet to be fully exploited since Nigerians are still very vulnerable to
59 hunger and poverty”. The poor who live in the rural and urban centers usually constitute a large
60 percentage of the population in the country and they are the dominant producers of food and
61 other essential materials; yet the formal financial institutions have not adequately provided
62 financial services to them as a result of their stringent conditions for making funds available to
63 farmers as well as the lack of access to available funds. This is because most of the financial

64 institutions are located in the urban areas far from the reach of the farmers who live in the rural
65 areas. These peasant farmers, therefore, rely essentially on the informal financial institutions in
66 their areas. Konare (2001), states that the issue of inadequate access to credit by rural farmers,
67 among others, has remained the central concern for farmers, and a key constraint to the
68 modernization and diversification of their activities. The poor in the rural area whose main
69 occupation is farming and who can contribute significantly to the development of the sector do
70 not have an access to banking services. Mehrteab (2005) opines that the main hurdle confronting
71 the farmers when trying to acquire loans from formal financial institutions is the demand for
72 collateral by those institutions. In addition, the process of acquiring a loan entails a lot of
73 paperwork and many bureaucratic procedures which lead to extra transaction costs. The formal
74 financial institutions are not motivated to lend to farmers. These institutions show a preference
75 for large-scale transaction over small-scale transaction and non-agricultural over agricultural
76 loans (Mehrteab, 2005). For instance, Mehrteab et al (2005) stated that in Africa, only 5% of the
77 farmers had an access to formal credit; hence this situation calls for a shift in attention by the
78 Government to the recognition and development of the informal financial institutions that are
79 predominantly found in the rural areas where agriculture thrives. Besides, there are little or no
80 existing studies known to the author on the evaluation of the impact of informal financing on
81 agricultural production in the Nigerian economy.

82 Agriculture is expected to make a significant contribution to net foreign exchange earnings for
83 Nigerian economic growth. Therefore, this study sets to reveal the important problems and
84 prospects of the agricultural financing and economic growth in Nigeria. It becomes important to
85 carry out a research on this area of study so as to suggest ways of combating the perceived
86 problems of the peasant scaled farmers such as loan procurement, and effective credit lending to
87 the benefit of the local farmers. Also, it sets out to help proffer solutions to the problems being
88 faced by the agricultural sector.

89 This study will serve as a good background and tool for those intending to carry out further
90 research work on related topics and decision-making process by the investors and government of
91 the nation.

92 In view of the problem identified above, the following research questions were raised for the
93 purpose of the study in order to analyze the impact of agricultural finance on the growth of the
94 Nigerian economy. What are the contribution/general impacts of agricultural resource on the
95 Nigerian economy? How have the interest rate levels affected the agricultural finance policies of

96 the government in relation to the growth of the economy? Is the size of the credit scheme
97 capacity expanded enough to engender the needed impact on the growth of the economy?
98

99 **1.3 Objective of the study**

100 Therefore, to answer the questions raised the objective of this study is to examine the impact of
101 agricultural finance on the Nigerian economy and examine the effect of agricultural output on
102 economic growth in Nigeria.

103 This is an investigation into the impact of agricultural finance on the Nigeria economy between
104 the periods of 1990 and 2009. The choice of this study period is based on the availability of data.
105 The study was limited to agricultural policies formulation and implementation on one hand and
106 agricultural finance on the other and how has the finance policies faired so far in the growth and
107 development of Nigerian economy.

108 **2. LITERATURE REVIEW**

109 Agriculture in Nigeria is the most dominant sector and a major source of livelihood for the
110 majority of the population. It accounts for about 70% of employment, and in spite of this
111 Binswanger, (1999:23) says it has not been able to achieve the major objectives of agricultural
112 development which the World Bank (1997) identified to include; (i) increase in food production
113 and farm income, (ii) make household food, water and energy security and (iii) restore and
114 maintain the natural resources. It states further that the failure of agriculture to meet these
115 objectives is due to limited use of purchased inputs and mechanism. This limitation is tied to
116 undercapitalization or lack of credit (Aku, P.S, (1995). Hence, since the availability of adequate
117 credit is central to improvements in agricultural productivity in an economy, this chapter is
118 devoted to both theoretical and empirical review of renowned opinions on the impacts of credits
119 on agricultural outputs, especially in Nigeria.

120 **2.1 THEORETICAL LITERATURE**

121 **Dual-Gap Analysis**

122 It has been established that capital imports can raise the growth rate, but we have not considered
123 how capital imports are financed and how the terms of borrowing may affect the growth rate. A

124 model which incorporates these considerations is developed by Thirlwall, (1983) as presented as
125 follows;

126
$$\text{Let } O = Y + rD \text{ (1)}$$

127
128 where O is output, Y is income, r is the interest rate, and D is debt. The difference
129 between domestic output and national income is factor payments abroad. From equation (1) we
130 have:

131
$$\Delta O = \Delta Y + r\Delta D \text{ (2)}$$

132 Now
$$\Delta O = \sigma I \text{ (3)}$$

133 Where σ is the productivity of capital, and

134
$$I = sO + \Delta D - srD \text{ (4)}$$

135 and s is the propensity to save. Substituting equation (4) into (3).

136
$$\Delta O = \sigma(sO + \Delta D - srD) \text{ (5)}$$

137 Equation (6) shows that the growth of output ($\Delta O/O$) will be higher than the rate obtainable from
138 domestic saving alone as long as $\Delta D > srD$, that is as long as new inflows of capital exceed the
139 amount of outflow on past loans that would otherwise have been saved. On the other hand,
140 making the rate of growth of income as the dependent variable, then from equation (1) we have:

141
$$\Delta Y = \Delta O - r\Delta D \text{ (6)}$$

142 Substituting (4) into (3) and the result gives the following:

143
$$\Delta Y = \sigma(sO + \Delta D - srD) - r\Delta D \text{ (7)}$$

144 Now since $Y = O - rD$, we can also write (7) as:

145
$$\Delta Y = \sigma sY + \Delta D(\sigma - r) \text{ (8)}$$

146 And dividing through by Y we have an expression for the rate of growth of income of:

147

148
$$\frac{\Delta Y}{Y} = \sigma s + (\sigma - r) \frac{\Delta D}{Y} \quad (9)$$

149

150 Equation (9) shows that the growth of income($\Delta Y/Y$) will be higher than the rate obtainable from
 151 domestic saving alone as long as $\Delta D > srD$, that is as long as new inflows of capital exceed the
 152 amount of outflow on past loans that would otherwise have been saved. The Equations (5) and
 153 (9) lay out the basis for agriculture financing and economic growth relationship.

154 However, Thirlwall et al (1983) have it that the basic underlying assumption of dual-gap analysis
 155 is a lack of substitutability between foreign and domestic resources. This may seem a stringent
 156 assumption, but nonetheless may be valid particularly in the short period. If foreign exchange is
 157 scarce, it is not easy in the short run to use domestic resources to earn more foreign exchange or
 158 to save foreign exchange by improving the productivity of imports. If it were easy, the question
 159 might well be posed: why do most developing countries suffer chronic balance-of-payments
 160 deficits over long periods despite vast reserves of unemployed resources? If domestic saving is
 161 scarce, it is probably easier to find ways of using foreign exchange to substitute, raising the
 162 domestic savings ratio and the productivity of capital.

163 **2.2 EMPIRICAL LITERATURE**

164 Various people have defined agriculture in different ways but common among these definitions
 165 is the fact that it is the production of food, feed, fiber and other goods by the systematic growing
 166 and harvesting of plants and animals.

167 Akinboyo (2008) defines agriculture as the science of making use of the land to raise plants and
 168 animals. It is the simplification of nature's food webs and the rechanneling of energy for human
 169 planting and animal consumption. Until the exploitation of oil reserves began in the 1980s,
 170 Nigeria's economy was largely dependent on agriculture. Nigeria's wide range of climate
 171 variations allows it to produce a variety of food and cash crops.

172 Agriculture has been defined by Ahmed, (1993) as the production of food and livestock and the
 173 purposeful tendering of plants and animals. He states further that agriculture is the mainstay of
 174 many economies and it is fundamental to the socio-economic development of a nation because it
 175 is a major element and factor in national development. In the same view, Okolo (2004) describes
 176 agricultural sector as the most important sector of the economy which holds a lot of potentials for

177 the future economic development of the nation as it had done in the past. Before the discovery of
178 oil in Nigeria, agriculture accounted for over 60% of its Gross Domestic Product (GDP) as well
179 as being a major source of foreign exchange earnings. It provided food and employment for the
180 teeming population and raw materials for the growing industries. Ogen (2007) states that from
181 the standpoint of occupational distribution and contribution to the GDP, agriculture was the
182 leading sector in the 1960s. Also, the Nigerian economy, like that of Brazil, could reasonably be
183 described as an agricultural economy during the first decade after independence. This is because
184 agriculture served as the engine of growth of the overall economy of the two countries. During
185 the period of 1960s, Nigeria was the world's second-largest producer of cocoa, the largest
186 exporter of palm kernel and the largest producer and exporter of palm oil. It was also a leading
187 exporter of other major commodities such as cotton, groundnut, rubber, as well as hides and
188 skins (Alkali, 1997; Lawal, 1997). Despite the reliance of Nigerian peasant farmers on traditional
189 tools and indigenous farming methods, these farmers produced 70% of Nigeria's exports and
190 95% of its food needs.

191 The agricultural sector however suffered neglected during the hey-days of the oil boom in the
192 1970s. Ogen (2007) states that agricultural sector accounted for less than 5% of Nigeria's GDP
193 in 2004. Since then, Nigeria has been facing serious poverty challenges and the insufficiency of
194 basic food needs (NEEDS, 2004). It is further revealed by the NEEDS Policy Paper, (2004) that
195 it is estimated that two-thirds of Nigerians live below the poverty line of US\$1 per day, most of
196 whom are in the rural areas. The root of this crisis lies in the neglect of agriculture and the
197 increased dependency on a mono-cultural economy based on oil.

198 Ikala (2010) has described that agriculture is the profession of the majority of humans. The
199 United Nations Organization (2008) estimated that the world as a whole, over 50% of the world
200 population is engaged in agriculture or dependent of it for a living; this is a general description of
201 the sector. On the other hand, it includes farming, fishing, animal husbandry and forestry. Oji-
202 Okoro, (2011) states that agricultural sector is the largest sector in the Nigerian economy with its
203 dominant share of the GDP, employment of more than 70% of the active labour force and the
204 generation of about 88% of non-oil foreign exchange earnings. Its share of the GDP increased
205 from an annual average of 38% during 1992 and 1996 to 40% during 1997-2001, compared to
206 crude oil, the GDP declined from an annual average of 13% in 1992-1996 to 12% during 1997-
207 2001.

208 Development economists have focused on how agriculture can best contribute to overall
209 economic growth and modernization. The physiocrats laid more emphasis on agriculture in the
210 development of an economy. In their views, the development of an economy depends on the
211 growth of the agricultural sector. The source of national wealth is essentially agriculture. The
212 physiocrats believe that the fate of the economy is regulated by productivity in agriculture and its
213 surplus is diffused throughout the system in a network of transactions. The agricultural sector to
214 the physiocrats is the only genuinely productive sector of the economy and the generator of
215 surplus upon which all depends.

216 Todaro and Smith (2003), while looking at Lewis theory of development, assume that the
217 underdeveloped economies consist of two sectors. These sectors are the traditional agricultural
218 sector characterized by zero margin agriculture, consumer price index, annual average rainfall,
219 population growth rate, food importation and GDP growth rate. The study performed a
220 comprehensive analysis of data and estimated the Vector Error Correction model. Their results
221 showed that federal government capital expenditure was found to be positively related to
222 agricultural output.

223 Oji-Okoro (2011) employs multiple regression analysis to examine the contribution of the
224 agricultural sector on the Nigerian economic development. They found that a positive
225 relationship between Gross Domestic Product (GDP) vis a vis domestic saving, government
226 expenditure on agriculture and foreign direct investment between the period of 1986-2007. It was
227 also revealed in the study that 81% of the variation in GDP could be explained by Domestic
228 Savings, Government Expenditure and Foreign Direct Investment.

229 Using time series data, Lawal, (2011) attempted to verify the amount of federal government
230 expenditure on Agriculture in the thirty-year period of 1979–2007. Significant statistical
231 evidence obtained from the analysis showed that government spending does not follow a regular
232 pattern and that the contribution of the agricultural sector to the GDP is in direct relationship
233 with government funding to the sector. Ogwuma (1981), studied on public expenditure in the
234 agricultural sector using econometric analysis. Based on his report, agricultural financing in
235 Nigeria shows a positive relationship between interest rate and loanable funds on the level of
236 agricultural output.

237 The strong correlation that has been established between Nigerian's total GDP and agriculture
238 suggests that the prospects of the non-oil sub-sector and the overall economy are closely tied to
239 the performance of the agricultural sector. Ukeji (2003) submits that in the 1960's, agriculture
240 contributed up to 64% to the total GDP but gradually declined in the 70's to 48% and it
241 continues in 1980's to 20% and 19% in 1985; this was as a result of oil glut of the 1980's.

242 Agricultural credit in Nigeria dates back to the 1930s but organized credit to farmers did not start
243 until 1972 when the Nigeria Agricultural and Cooperative Bank (NACB) was established
244 (Ajakaiye. 1984). He further said that agriculture is the largest sector of the Nigerian economy,
245 though its contribution to the Gross Domestic Product (GDP) has declined from 67% in 1950 to
246 18% in 1980.

247 According to the Federal Ministry of Agriculture publication (1980), 58% of farming-related
248 borrowings was obtained from family and friends; 24% from professional private money lenders,
249 15% from merchant and only 3% from commercial banks and other institutional sources. As
250 Garba (2000) noted, they are gross, inadequate and unsatisfactory for the credit needs of the
251 farmers. Thus, there is the need for larger credit sources.

252 The importance of bank credits to agricultural production is well established in many countries.
253 In the study by Sohail et al (1991:38) on the relationship between bank credits and agricultural
254 outputs in Pakistan, they found out that a statistically significant relationship existed between
255 bank credit in Pakistan and the agricultural outputs.

256 Moreover, Yaron et al (1997:203) also argued that directed credit programmes were associated
257 with the adoption of modern technologies such as greenhouses in Morocco and tube wells in
258 North West Bangladesh and these innovations were associated with an increase in production
259 gains in the agricultural sector (see also Ijaiya and Abdulraheem 2000).

260 May (1970:08) reported that countries that emphasized the agricultural sector ended up with
261 faster industrial growth than those that focused on industries alone. Hence, agriculture may,
262 therefore, be the fastest road to industrialization.

263 Emmanuel (2008:781) carried out a study on the impact of macroeconomic environment on
264 agricultural sector growth in Nigeria. The macroeconomic policies included in the model are
265 credits to the agricultural sector, nominal interest rates on the loan, exchange rate, world prices
266 of agricultural produce, foreign private invest-government expenditure and inflation rate.

267 Using multiple regression analytical technique (ordinary least square), he discovered that
268 nominal interest rate is positively related to the index of agricultural production. This implies
269 that at the higher nominal interest rate, more credit facilities are made available to the operators
270 of the Nigerian agricultural sector, but at lower nominal interest rate as credit facilities are no
271 more widely available. The index of agricultural output is also positively related to world prices
272 of Nigeria major agricultural commodities.

273 This implies that better world prices enhance agricultural output growth in Nigeria. Similarly, the
274 index of agricultural production was positively related to government expenditure on agriculture.
275 Moreover, it was discovered that the index of agricultural production is negatively related to the
276 level of inflation, implying that as inflation becomes high, the index of agricultural production
277 declines. He thus recommends that macroeconomic policies that enhance favourable exchange
278 rates make agricultural credit widely available at a low-interest rate, reduce the rate of inflation,
279 increase foreign private investment in agriculture, would not fortify government investment in
280 the sector but would be invaluable in supporting agricultural output growth in Nigeria. The
281 experience of Nigeria shows that appropriate expenditure by government (on agricultural
282 research, extension credit and roads) can have spectacular effects on the output of peasants and
283 that agriculture instead of acting as a brake on the rest of the economy, can be turned into a
284 leader generating demand for other sectors, and also providing them with capital.

285

286 **2.3 Impact of Informal Agricultural Financing on Agricultural Production**

287 Okurut and Thuto (2007) affirmed that the informal financial sector plays a key role in resource
288 mobilization and allocation in developing economies. Bouman (1995) reported that in
289 Cameroon, approximately 50% of the national savings and 27% of the total credit requirements
290 was provided by the informal sector while Jones et al (1998) noted that 55% of all private
291 savings in Ghana were mobilized through informal sources. In India, it was reported by Timberg
292 and Aiyar (1984) that informal credit markets accounted for approximately 20% of total
293 commercial credit outstanding; while Bagachwa (1995) observed that approximately 55% of
294 start-up capital for micro-entrepreneurs in urban and rural areas in developing countries was
295 provided by the informal financial sector. Okurut and Thuto (2007) stated that informal credit is
296 demanded for both productive investment (agriculture production or business) and consumption
297 smoothing. It was further reported by Okurut and Thuto et al (2007) that a survey conducted by

298 Morewagae (1995) on 1140 informal microenterprises in Botswana revealed that 74% relied on
299 informal sources for investment credit, as cited in Okurut and Thuto et al (2007). Verhoef (2001)
300 reported the great impact of “Stokvels”, which is a type of Rotating and Savings Association
301 (ROSCA) in South Africa, as informal market savings mobilizers. He stated that overtime
302 “Stokvels” developed into a network of highly diversified savings and credit organization to suit
303 the needs of all income groups. He went further to state that the “Stokvels” eventually emerged
304 as a strong intermediary in the informal financial sector that the

305 South African Reserve Bank had to include them in the regulatory framework of the financial
306 institution hem in the regulatory framework of the financial institution in 1994.

307 Floro and Ray (1997) reported that the activities of the informal credit sector in the Philippines
308 have been very prominent in the last three decades especially in the rice-growing areas where
309 marketing agents’ informal lending activities resulted in the rapid commercialization and
310 intensified trading activity in the rural areas. This is a measure of the impact of informal
311 financial institutions on the economic lives of the Philippines. Cristensen (1993) reported that the
312 impact of the informal financial institutions on informal sector activities differs from country to
313 country depending on the level of the development of the financial markets. He stated the
314 informal financial sector increased in importance in proportion to the level of underdevelopment.

315 There is no gainsaying that the informal financial institutions in the developing countries are
316 playing significant roles in the development of the national economy particularly in the rural
317 areas where they abound. Spio and Groenewald (1997) stated that these institutions take different
318 forms and perform different functions in different parts of the world. For example, in Asia,
319 indigenous financial institutions such as “the curb market in Korea”, “the financial companies in
320 India” and “the chit funds in Thailand” tend to engage in a considerable volume of business and
321 trade finance for even large-scale enterprise. They affirmed that the poor performance of the
322 formal finance sector in some areas has caused the informal sector to re-emerge as the main
323 source of financial services for most rural firms and households. Heidhues (1985) in Spio and
324 Groenewald (1997) estimated informal finance to have constituted over two-thirds of all
325 agricultural credits in Africa. They further stated that the informal financial institutions are used
326 almost exclusively to finance household consumption, investment or small-scale business

327 enterprises. The market is said to facilitate both consumption and input use during the periods
328 between planting and harvesting.

329 According to Adeoye (2005) and Olaiya (2005), these informal financial institutions are the
330 major providers of funds for the promotion and development of small-scale businesses in the
331 rural areas. Adeoye et al (2005) citing Onoh (1980) listed the functions of the informal financial
332 institutions to include the following among others: the mobilization of savings from members'
333 resources; the provision of credits to all accredited financial members; they engage in
334 developmental functions of providing finances for local projects like the execution of town halls,
335 health care and road projects; and giving mutual aid to members.

336 **2.4 Financing Agriculture in Nigeria.**

337 Finance is one input required for agricultural development as it represents the power to purchase
338 all other inputs and thus, it is not the single determinant of the level of development in
339 agriculture. Several studies have been carried out on commercial banks and the finance of
340 agriculture in the country. According to Elegham (1983:06), the availability of credits to local
341 farmers poses a serious problem. This is because of the rate in the increase of defaulting cases
342 among small farmers. Tims. (1974) also revealed that commercial banks in Nigeria were willing
343 to grant to large-scale farmers because it has noticed that small farmers default. Mostly in the act
344 of loan repayment, they also have no provision for collateral security required by banks. It is in
345 light of this that the government has always maintained that commercial banks should not
346 neglect agricultural and allied activities since they are the Chief agent of mobilization of savings.
347 Notwithstanding the unsuitability of commercial banks for financing agriculture in general and
348 small-scale farmers in particular, studies carried out by Akinwale (1985), Osuntogu (1973) and
349 Ijere (1975) pointed out the need for raising the volume of loan resources available to the credit
350 constitutions, so as to permit increase in lending to the individual borrowers. However,
351 Ogunfowora et al (1972) attributed most of the shortcomings and institutional credits in Nigeria
352 to facts such as; ineffective supervision or monitoring, insufficient funds, political interference,
353 cumbersome and time-consuming loan processing and gearing absence of financial projections.
354 The importance of project supervision or monitoring of facilities is to ensure that all conditions
355 attached to the approval of credits facilities are complied with. Credit Supervision is also aimed

356 at identifying emergent problems before they got out of control. Problems detected earlier
357 through warning signals could be easily solved to avoid total loss of the project.

358 Agricultural facilities granted are closely monitored. This is occasioned by the nature of the
359 industry, especially the production aspect that is highly risky because of its precarious nature.

360 Agricultural facilities are also known to be specific-purpose oriented i.e planting, fertilizing,
361 harvesting and transporting etc.). As a result of follow-up facilities, the indications of possibility
362 of default (usually) referred to as “danger sign” of default are easily detected, a current finding in
363 the view on bank credit management.

364 **2.4 Sources of Agricultural Financing.**

365 According to Amechi (2004:120) sources of agricultural financing are as follows:

366 **A. AGRICULTURAL BANKS**

367 In Nigeria, we have the Nigerian Agricultural and Financial Bank (NACB) which was
368 established in 1973 primarily to finance agricultural projects. Its cardinal aims are:

- 369 i. To stimulate interest in Agricultural Production.
- 370 ii. To improve agricultural Production technique
- 371 iii. To improve storage and marketing of agricultural produce.
- 372 iv. To grant loans on fairly easy terms to finance agricultural projects.

373 State and local governments may also serve as intermediaries by receiving the loan from the
374 federal government and the NACB for transmission to the farmers or relevant farmer’s
375 organization.

376 The federal government, through the Central Bank of Nigeria, is the sole financier of the
377 NACB. Its headquarters are located in Kaduna.

378 **B. COMMERCIAL BANK**

379 According to Amechi (2004); Commercial banks can also finance agricultural projects. She
380 further said; “In Nigeria, the federal government directs Commercial banks to allocate a part
381 of their lending to agriculture at reduced interest rates. Such banks usually set up departments
382 of agriculture and employ agriculturists to manage them. Such loans can be on:

383 **SHORT-TERM:** Where the loans are used to finance Annual and biennial crops and quick
384 maturing Livestock⁸ Projects such as pigs and poultry.

385 **MEDIUM-TERM:** Where the loan matures in two or three years, such loans are normally
386 invested on biennial and some perennial crop which mature in about three years such as
387 Cassava, Citrus, Oil palm etc.

388 **LONG-TERM:** Where the loan matures in three or more years, they are used to finance long-
389 spanning perennial crops such as Cocoa, Kola, rubber, etc.

390 **C. SELF-FINANCING:**

391 According to Aryeetey (1996:18), this is where a farmer decides to reinvest his savings in
392 another agricultural project or expanding an already existing one. This, however, is a slow
393 process of saving money depends on a lot of factors: economic and fiscal factors. It leads to
394 small-scale farming and is only suitable for subsistence farming.

395

396 **D. GOVERNMENT SOURCES:**

397 Government (Federal, State and local) can give agriculture loan to farmers either directly or
398 indirectly through some agencies like Ministries of Agricultural Banks, the Agricultural
399 Development Programme (ADP) and others.

400

401 **3.0 METHODOLOGY**

402 This section covers the areas of model specification, variables identification and data
403 sources, estimation techniques, evaluation procedures. This research examined to what extent in
404 which agricultural finance has determined the level of economic growth in Nigeria. Since the
405 data to be employed are time series data, an ordinary least square (OLS) method will be used to
406 estimate the model parameters. In order to facilitate time series analysis, data such as GDP,
407 interest rate, agricultural Output (AOP), credit size (CRZ) and commercial bank credit (CBC)
408 shall be obtained from the Central bank of Nigeria (CBN) statistical bulletin.

409 **3.1 Model Specification**

410 Inspired by the Dual-Gap Analysis development by Thirlwall and the work of Oji-Okoro
411 (2011) where the contribution of agricultural sector to the Nigeria economic development was
412 examined, where GDP was the dependent variable while domestic saving, Government
413 expenditure on agriculture, foreign direct investment were the independent variables. Hence, in
414 line with these and a little modification the model adopted in this study is functionally expressed
415 as;

416
$$Y = f(X_1, X_2, X_3, X_4, \dots, X_n)$$

417
$$GDP = f(CBC, RINTR, AOP, CRZ)$$

418 Where;

419 GDP - Gross Domestic Product

420 RINTR - Real interest rate

421 CBC - Commercial bank credit

422 AOP - Agricultural output

423 CRZ - Credit size

424 The model is thus mathematical presented as follows;

$$425 \quad \text{GDP} = \beta_0 + B_1\text{CRZ} + B_2\text{RINT} + \beta_3\text{AOP} + \beta_4\text{CBC} + \mu_i$$

426 In order to achieve the objective of this study, the variables were estimated in their logarithm
427 functions and expressed as follows;

$$428 \quad \log\text{GDP} = \beta_0 + \log B_1\text{CRZ} + \log B_2\text{RINT} + \log \beta_3\text{AOP} + \log \beta_4\text{CBC} + \mu_i$$

429 **Where**

430 GDP = Gross domestic product

431 AOP = Agricultural output

432 RINTR = Real Interest Rate

433 CRZ = Credit Size

434 CBC = Commercial Bank Credit to Agriculture

435 B_0 = constant term

436 $B_1 - B_4$ = parameters to be estimated

437 μ_i = stochastic error term.

438 **3.2 VARIABLE IDENTIFICATION**

439 Gross Domestic Product (GDP), this was chosen as a dependent variable in this study because it
440 is used as an indicator for assessing the growth of Nigerian economy, while Agricultural Output
441 (AOP) was chosen as an independent variable in order to capture the effect of commercial banks
442 credit on agricultural output in Nigeria. This will also serves to show how significant changes in
443 the variable are to the economic growth of Nigeria. Credit size (CRZ) is an explanatory variable
444 stating the amount of loan/credit allocated to agricultural sector to enhance agricultural
445 productivity in the nation that is economy as a whole. Interest rate (RINT) was employed as an
446 explanatory variable in this study because it shows the rate of interest that causes the change in
447 GDP, and Commercial bank credit (CBC) was also included as an explanatory variable.

448 **3.4 ESTIMATION TECHNIQUE**

449 The Ordinary Least Square (OLS), method shall be used for the estimation of parameters
450 of the model specified earlier on. This estimation technique is relevant to the objectives of this
451 study because it has been used in the study of a range of economics relationship with satisfactory
452 result. The specified model shall be confronted with the data collected to obtain the numerical
453 value of the non-zero parameter estimated. The evaluation method was based on the various test
454 of significance will be carried out to know whether the estimates of the parameter confirm with
455 the assumption of ordinary least squarer and to ascertain the forecasting ability of the model.

456 **4.0 DATA ANALYSIS AND DISCUSSION OF RESULTS**

457 This chapter is designed to reflect the analysis and discussion of results, based on the
458 methodology employed in the previous chapter.

459 ANALYSIS OF RESULTS

$$460 \log GDP = 11.83743 - 0.377318CRZ + 0.421706RINT - 0.024776AOP + 0.082138CBC$$

461 (0.613691) (0.041283) (0.140689) (0.032517) (0.030809)

462 The estimated regression model above revealed that the intercept of the model is
463 11.83743. This shows that holding the explanatory variables constant, i.e at the zero level of all
464 the explanatory variables, the Gross Domestic Product (GDP) will increase by over 11.83%. The
465 results further revealed that, the coefficients of Credit Size (CRZ) and Agricultural Output
466 (AOP) are negatively related to the entire Gross Domestic Product; these are -0.377318 and -
467 0.024776 respectively, it is further revealed that the coefficients of Real Interest Rate (RINT) and

468 Commercial Bank Credit to agriculture (CBC) are positively related to the Gross Domestic
469 Product; these are 0.421706 and 0.082138 respectively.

470 As shown in the estimated model above, it is evident that, the coefficient of Credit Size
471 (CRZ) is negatively related to the Gross Domestic Product. This result didn't conform to the
472 economic a priori expectation of positive relationship. Hence a unit change in Credit Size will
473 bring about a decrease in the Gross Domestic Product by about 37%.

474 The regression result further revealed that, there exists a positive relationship between
475 Real Interest Rate (RINTR) and the output in the economy, this result is in concurrence to the
476 economic a priori expectation of positive relationship. However, a unit change in Real Interest
477 Rate (RINTR) will bring about an increase of about 42% in the output of the economy, this
478 implies that as interest rate is increasing, people will be induced to invest part of their money and
479 there will be more money in circulation for those that want to borrow for investment purpose.

480 The regression result also revealed that, there exist a negative relationship between
481 Agricultural Output (AOP) and Output of the Economy. This result is not in concurrence to the
482 economic a priori expectation of positive relationship. Hence, a unit change in the agricultural
483 output will bring about a decrease of about 2.4% in the Gross Domestic Product. This is because
484 most of people in the economy practice a subsistence system of agriculture as a result of
485 inadequate loans for the farmers.

486 The regression result further revealed that, there exist a positive relationship between
487 Commercial Bank Credit and the Output of the Economy. This result conforms to the economy a
488 priori expectation of positive relationship. However, a unit change in Commercial Bank Credit
489 will bring about an increase of about 8.2% increase in the Output of the Economy.

490 **4.2** Analysis of the Coefficient of Multiple Determinations (R^2)

491 The coefficient of multiple determination (R^2) measures the degree of variation in the
492 dependent variable as it's been explained by the explanatory variables. However, the regression
493 result showed that the coefficient of R^2 is 0.956734. This implies that, about 95.7% of the total
494 variation in the output of the economy (GDP) is been explained by the joint variations in the
495 explanatory variables of Credit Size (CRZ), Agricultural Output (AOP), Commercial Bank
496 Credit (CBC) and Real Interest Rate (RINT).

497 **4.2a** Test of Statistical Significance

498 T-test Hypothesis

499 $H_0: \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$

500 $H_1: \beta_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$

501 Given values in parenthesis (t-ratios) from the result estimated t-calculated. For t-
 502 tabulated at 5% level of significance with observation 1990– 2009, t – tabulated at 5% is 1.960
 503 using the two tail test. The decision rule states that; if $t\text{-cal} > t\text{-tab}$, the parameter estimate is
 504 statistically significant, and if $t\text{-cal} < t\text{-tab}$, the parameter estimate is not statistically significant.
 505 Therefore, the constant term, as well as the coefficient of the some of the explanatory variables
 506 such as Real Interest Rate and Commercial Bank Credit, are significant statistically at 0.05 level
 507 and the rest of explanatory variables Credit Size and Agricultural Output are not statistically
 508 significant. This implies that, the behaviour of output in the economy (GDP) is been influenced
 509 by the behavior of the statistically significant explanatory variables CBC and RINT respectively
 510 and behaviour of output in the economy (GDP) is not been influenced by the behavior of the non
 511 statistically significant explanatory variables CRZ and AOP in the model within the period under
 512 consideration.

513 Summary of T - Test

Variable	t-Statistic	t-tabulated	Remarks	Decision Rule
C	4.903229	1.960	Significant	Reject H_0
CRZ	-9.139910	1.960	Insignificant	Accept H_0
RINT	2.997424	1.960	Significant	Reject H_0
AOP	-0.761944	1.960	Insignificant	Accept H_0
CBC	2.666026	1.960	Significant	Reject H_0

514

515 F-Statistical Test (5%)

516 This is used to test for the overall significance of the model.

517 $F - \text{calculated} = 82.92412$

518 The degree of freedom is given, $V1 = k-1$ where k is the number of explanatory variable with the
519 independent variable therefore $5-1=4$, and $V2 = n-k$. Where n is the number of observation and k
520 is the number of variable therefore $20-4= 16$.

521 $F - \text{tabulated} = 3.01$

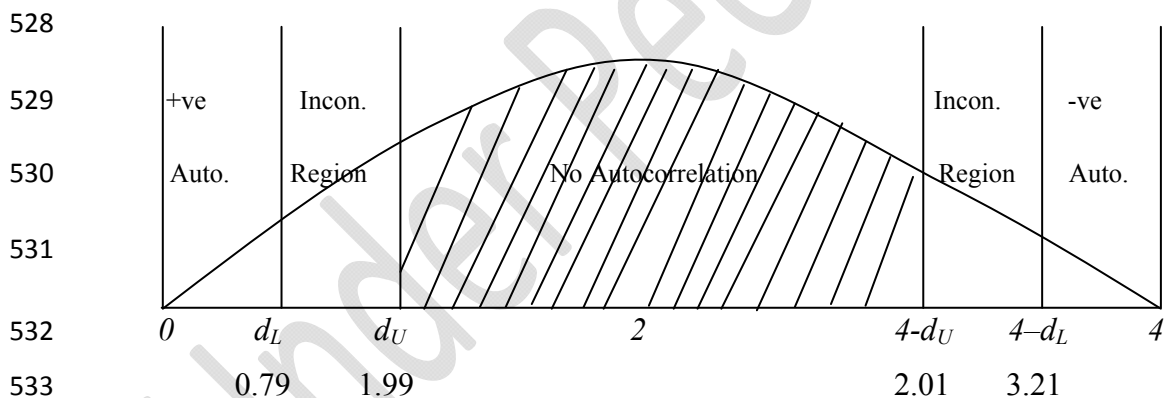
522 Since $F - \text{cal} > F - \text{tab}$, hence, the overall model is statistically fit and implies that the
523 mean values of the explanatory variables are different from zero.

524 Durbin Watson Test

525 $DW \text{ calculated } (d^*) = 1.209638$

526 $DW \text{ tabulated} = d_L = 0.79 \quad d_U = 1.99$

527 $4 - d_L = 3.21 \quad 4 - d_U = 2.01$



534 $d^*=1.209638$

535 Therefore, since, $d_L < d^* < d_U$ that is $(0.79 < d^* = 1.209638 < 1.99)$, hence, we conclude that the
536 test for serial correlation among the successive values of the error term shows that the test is
537 inconclusive.

538 4.3 Discussion of Findings

539 From the results presented above, it is worthy of note that the size and amount of credit
540 available to agriculture of the total amount of credit granted by the government has not been able
541 to impact on the level of economic growth in Nigeria. This is as it shows a negative influence on
542 the level of output in Nigeria. This may be attributed to the fact the Country has recorded so
543 much in terms of misappropriation of funds meant to be issued to the agricultural system as
544 credits for the improvement of the system. This also goes with the level of agricultural output
545 which maintained a negative but insignificant influence on the output level of Nigeria.
546 Meanwhile, the real interest rates and the total commercial bank loans to agriculture showed
547 positive impact on the output level in Nigeria. The reason is that when it has to do with the
548 private sectors and individual entities, the loans and advances will have a bit of regularity in
549 terms of disbursements. This is evident in the level and frequencies of loans made available by
550 the apex banks through the commercial and specialized banks in Nigeria.

551 **SUMMARY, CONCLUSION AND RECOMMENDATION**

552 **5.1 SUMMARY**

553 The research study set out to empirically examine the impact of agricultural financing on
554 the growth and development of Nigerian economy. The empirical evidence from the literature
555 and the findings pointed out to the fact that despite the level of finance and credit size available
556 to agricultural sector in Nigeria in relation to the output level in the economy has not made any
557 meaningful effect on the economy. This is evident based on the negative but insignificant posture
558 maintained by the level of output. The findings also revealed that the administration of financing
559 in the agricultural sector in the prevailing level of interest rates during the period under review
560 has really been relatively favourable to the agricultural sectorial output but has not in any way
561 translate to any improvement on the economic system in terms of growth. Besides, the
562 administration and disbursement of credit available to the agricultural sector through the
563 commercial and specialized banking system have also been helpful to the system in terms of its
564 effects on the output growth.

565 **5.2 CONCLUSION**

566 In conclusion, this study asserted that agricultural output level in Nigeria during the
567 period under review for the purpose of the study has contributed negatively to the level of

568 economic development. This revelation persisted despite the fact so many funds from different
569 sources have been expended on the sector. The Nigerian economy still rely heavily on the
570 foreign economies for both the raw materials meant for the industrial and manufacturing sector
571 on one hand and certain number of her food items for the survival of the citizenry on another
572 hand. This outcome may be attributed to the fact that agricultural production in Nigeria has been
573 characterized by low and dwindling output due to the long-term neglect it has suffered in the
574 hands of successive governments in Nigeria. There is, therefore, the need for conscious and
575 concerted efforts by the governments and every relevant stakeholder to ensure a complete
576 overhaul of the agricultural sector to transform it from this current status a fully mechanized one
577 so that it can cater for the industrial and domestic needs of the economy.

578 **5.3 RECOMMENDATION**

579 In view of the summary of findings and revelations emanating from the conclusion of this
580 study which empirically seeks to assess the impact of agricultural finance on the development of
581 Nigerian Economy, it is therefore recommended that efforts should be geared towards
582 transforming the agricultural sector to make it a growth engendering and a reliable one for the
583 Nigeria economic system so as to be able to move towards the standard set out in the millennium
584 development goals (MDGs). Besides, the interest rates should be maintained at a level that it will
585 encourage funds mobilization for the agricultural sector that will translate into output growth for
586 the entire economy.

587 And finally, the commercial and specialized banks should be encouraged in terms of
588 funds disbursement to the agricultural sector so as to ensure proper utilization of such funds for
589 the benefit of the sector in particular and the entire economic system as a whole.

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REFERENCES

593 Abayomi, O. (1997). *“The agricultural sector in Nigeria: The way forward.”* CBN Bullion,21:
594 14-25.

595

596 Abdullahi, F.A. (2002). *Spectrum Memory Guide, Agricultural Science for Senior Secondary*

597

598 *Certificate Examination.* Ibadan: Spectrum Books Limited.

599
600 Adeoye, P.B. (2005). *Informal Financial Sector and Poverty Alleviation. Proceedings of the National*
601 *Conference on Informal Financial Sector and Sustainable Development in Nigeria.* Department of
602 Banking and Finance, University of Ado-Ekiti, Ado-Ekiti, Ekiti State, Nigeria, pp.93-96.
603
604 Adekanye, F. (1986). *Practice of Banking.* London: Collins Publishing Company.

605 Ahmed, Y. O. (1993). “*Bank of the North Pamphlets on Agricultural Financing. Various*
606 *circulars and Policy Guidelines on Agricultural Financing in Bank of the North Limited.*” A
607 Paper delivered at Seminars at Bank of the North Human Resources and Development Centre by
608 (Agric. Officer, Bank of the North Limited).
609

610 Akinboyo, O.L. (2008). “Five decades of agricultural policies: What role has statistics played?
611 CBN Bullion, 32: 134 – 165.
612

613 Aku, P.S. (1995). *Comparative Analysis of NAC and ACGSP loan Disbursement to Agriculture in*
614 *Nigeria.* Journal of Social and Management Studies. Vol.1,No.34.

615 Alkali, R.A. (1997), *The World Bank and Nigeria: Cornucopia or Pandora Box?* Kaduna: Baraka Press,
616 pp15-16

617 Amechi, N.F. (2004). *Model Agricultural Science.* Oko: Federal Polytechnic press.

618 Amin, A. A. (1996). *The Effect Of Exchange Rate Policy On Cameroon’s Agricultural Competitiveness.*
619 Nairobi: ARC Publishers.

620 Aryeetey E. and Udry C. (1996), *The Characteristics of Informal Financial Markets in Africa.* Paper
621 presented at the Plenary Session of the Bi-annual Research Conference of the African Economic
622 Research Consortium, Nairobi, Kenya, December 1994.

623 Bagachwa, M. S. D. (1995), *Financial Integration and Development in Sub-Saharan Africa: A Study of*
624 *Informal Finance in Tanzania,* Overseas Development Institute Working Paper 79, p50.

625 Bouman, F. J. A. (1995), *Rotating and Accumulating Savings and Credit Associations: A Development*
626 *Perspective.* World Development, 23(3):371-84.

627 Eicher, L. & Witt, J. C. (1964). *Nigerian Development Plan In Growth and Development of the Nigerian*
628 *Economy.* USA: Michigam State University Press

629 Ekezie, E.S. (1997). *The Elements of Banking Money Financial Institutions and Markets.* Onitsha:
Africana-fep Republishes.

630 Emmanuel .O.E. (2008). *Macroeconomic Environment and Agricultural Sector Growth in Nigeria*. World
631 Journal of Agricultural Sciences. Vol.8, No.16.

632 Emeka, O.M. (2007). *Improving the agricultural sector toward economic development and poverty*
633 *reduction in Nigeria*. CBN Bullion, 4: 23-56. FAOSTAT 2004.

634 Floro, M.S. and Ray, D. (1997). "Vertical Links Between Formal and Informal Financial Institutions."
635 Review of Development Economics.1 (1): 34-56
636

637 Fosu, K.F. (1992). *The Real Exchange Rate and Ghanas Agricultural Export*. Nairobi: ARC Publishers.

638 Garba, P.K. (2000). *An Analysis of the Implementation and Stability of Nigeria Agricultural Policies*.
639 Accra: AEC Publishers.

640 Heidhues, F. D. (1985), *Agricultural Credit and Agricultural Development*. Journal of Economics
641 31: 59-70

642 Iganiga, B.O. and Unemhilin, D.O. (2011). "The Impact of Federal Government Agricultural
643 Expenditure on Agricultural Output in Nigeria". Journal of Economics, 2(2): 81-88
644

645 Ijaiya, G.T. & Abdulraheem, A. (2000). Commercial Banks Credits to the Agricultural Sector and
646 Poverty Reduction in Nigeria. A Calibration Analysis. *Nigeria Journal of Agricbiz and Rural*
647 *Development*. Vol.XL,No.12.

648 Ijere, M.O. (1996). *New perspectives in Financing Nigeria Agriculture*. Benin: Dimension Publishers.

649 Ikala, P. A (2010). *Impact of public agriculture expenditure on agricultural output and economic growth:*
650 *(1978-2007)*. An Unpublished thesis of the Caritas Unversity, Amorji-Nike; Emene Enugu.

651 Iyoha, M. (2004). *Applied Economics Second Edition*. Benin: Mindex Publishing Nigeria.

652 Konare K. (2001) *Challenges to Agricultural Financing In Mali*. An M.Sc Thesis Submitted to
653 Department of Agricultural Economics, Michigan State University.

654 Koutsoyiannis, A. (2001). *Theory of Econometrics an Introductory Exposition of Economics Method*.
655 New York: Palgrave Publishing Ltd.

657 Lawal. A. A. (1997), *The Economy and the State from the Pre-Colonial Times to the Present*. In A.
658 *Osuntokun. and A. Olukoju. (eds)*. The Nigerian Peoples and Cultures, Ibadan, Nigeria: Davison.
659 Lawal, W.A. (2011). “*An analysis of government spending on agricultural sector and its contribution to*
660 *gdp in nigeria .*” International Journal of Business and Social Science, 2(20), 244-250.

661 Mackie A.B (1964) *The role of agriculture in economic growth and development*.
662 *Illinois Agricultural Economics*. Agric Journal, 43: 45-56.
663
664

665 Muftau, A.I. (2003). *Commercial Bank Credit to the Agricultural Sector and the Nigerian Economy*.
666 *An Analysis of the Future Trend*. A Journal of Department of Business Administration . Vol.28, No.32.
667 Nigeria *Economic Empowerment and Development Strategy- NEEDS (2004)*. Executive Summary on
668 Nigeria Agricultural Policy Support Facility (A-PSF). An Agricultural Policy, Research and
669 Knowledge Program to Support Nigeria’s NEEDS.

670 Nzotta, S.M. (1999). *Money Banking and Finance Theory and Practice*. Lagos: Intercontinental
671 Publishing.

672 Obadan, I.M. (2000). *Prospect for Diversification in Nigeria Export Trade*. Benin: Dimension Publishers.

673 Ogen .O. (2007), *The Agricultural Sector and Nigeria’s Development: Comparative Perspective from the*
674 *Brazilian Agro-Industrial Sector Economy, (1960-1995)* Nebula March 2007@Noble World
675 Archives.

676 Oji-Okoro, I. (2011). “*Analysis of the contribution of agricultural sector on the Nigerian Economy*
677 Olajide S.O (2011). *Ethno-botanical Survey of a Disturbed Rainforest Ecosystem in South East*
678 *Nigeria*. Nigerian Journal of Agriculture, Food and Environment. 7(1):1-8

679 Oluwasanmi, H. A. (1966). *Agriculture and nigeria’s economic development*. Ibadan:
680 *economic development*.” world review of business research, 1(1), 191 – 200.

681 Okolo, D. A. (2004), *Regional Study on Agricultural Support: Nigeria’s Case*, being Special Study Report
682 prepared for Food and Agricultural Organization (FAO)

683 Okumadewa. F. (1997). *Poverty and Income in Nigeria -Measurements and Strategies for*
684 *Reform*: Paper presentedat the Vision 2010 Workshop, Abuja, April 14.
685

686
687 Okurut, N. and Thuto, B. (2007), *Informal Financial Markets in Botswana: A Case Study of Gaborone*
688 *City*. Study prepared for Botswana Institute for Development Policy Analysis (BIDPA)
689 Ruma. S.A. (2008), *Nigeria Ranks 20th on Global Hunger Index – Minister for Agriculture*, The Online
690 Punch Newspaper. Retrieved from online
691 <http://www.punch.com/Articl.aspx?theartic=Art200803172393867>, 15th March
692 Spio, K. and Groenewald, J.A. (1997), *Rural Financial Markets: An Overview. Agrecon*, Vol. 36, No.
693 2:pp.121-138
694 Timberg, T. A. and Aiyar, C. V. (1984), *Informal Credit Markets in India*. Economic Development and
695 Cultural Changes. Vol., 33 (1): pp.43-59.
696 Todaro, M. P. and Smith, S. C. (2003). *Economic development*: 8th ed, Singapore: Pearson Education.
697 Ugochukwu, O.C. (1999). *STAN Agricultural Science for Secondary Schools*. Lagos: Longman
698 Nigeria Plc,
699 Umoh, G.S. (2003). *Macroeconomic environment and the Perennial Crops*. Akwa: African Feb
700 Publishers.
701 Winters, P.A.(1998): *The Role of Agriculture in Economic Development: Visible and Invisible*
702 *Surplus Transfers*. Journal of Development Studies, June.
703 Woolf, S.S. and Jones A.O (1969). *Agrarian change and economic development: the historical problem*
704 London: Methuen.
705
706
707
708