

Effecting Agricultural Modernization in Rural Areas Through Agricultural Development Programme(ADP): The Prospects

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Abstract: This study examines the activities of the Agricultural Development Programme (ADP) in effecting agricultural transformation among the farmers in the rural areas of Ondo State. The major respondents involved in this study are farmers, both 'contact' and 'non-contact'. Twelve farmers (six contact farmers and six non-contact farmers) were thus randomly selected and interviewed for this study making a total of 288 (that is 144 contact farmers and 144 non-contact farmers). The contact farmers were systematically selected while the non-contact farmers were selected using random sampling technique. The study reveals that the mean produce of contact farmers was 148.67 before the ADP and 191.33 since the ADP with standard deviation 192.72 before ADP and 211.96 since ADP. This shows definite increase in crop yield of farmers since 1990, the year of inception of ADP. The study also reveals a considerable increase in the number of hectares cultivated by respondents per crop after introduction of ADP. Out of the 7 crops analysed on the table, none witnessed a reduction in the size of hectares cultivated and the number of cultivators. The mean score of hectares cultivated before ADP is 0.768 while the standard deviation is 0.92 and the mean score after ADP is 1.6 while the standard deviation is 1.56. In order to establish the degree of difference in the means, the Z test was employed. The Z value calculated was 4.51 while the Z table value is 1.96 at 0.05 level. This establishes a significant difference in the means before and since the ADP in the positive direction. The use of the services of the ADP also have positive effect on the articles of convenience that the farmers possessed.

Key words: Agricultural development, modernization, land-holding, crop-yield, traditional-agriculture, cultivation

INTRODUCTION

Agricultural Development Programme is a rural integrated development strategy for agricultural and rural development. The approach entails timely supply of agricultural inputs to farmers, the training of farmers on improved technologies, provision of adequate infrastructure and the establishment of supportive institution. It also, entails educating the farming families on the importance of the maintenance and sustenance of these structures and goals for enhanced development in the project coverage. Explicitly, the project is geared towards increase in production of food-crops such as maize, cassava, cowpea, yam and vegetables and thereby raising the standard of living of the farmers.

The term "Agricultural Development Programme" refers to the technological break-through from which high yielding varieties of seed and planting materials have developed (Mabogunje, 1984). In the Nigerian context, the concept is conceived as "a programme which attempts to replace the piecemeal, exclusive and uncoordinated past

agricultural programmes with a holistic programme in which existing social, economic and institutional factors which inhibit rapid rate of agricultural development are identified and appropriate policies and programmes designed for their elimination" (Nigeria, Federal Ministry of Agriculture, 2004).

Thus, as an integrated approach to agricultural development, the ADP strategy would naturally involve the identification of the social, economic and institutional need of the agricultural communities, formulation of policies on them and the design of strategies by which the policy goals can be achieved. Furthermore, the strategies are translated into programmes of action and projects which are executed, monitored and appraised from time to time.

Against this background therefore, this study attempts an evaluation of the impact of one of the Agricultural Development Programmes in Nigeria namely Ondo State Agricultural Development Programme (ODSADEP) on the socio-economic lives of the rural community dwellers of Ondo State. This evaluation study

therefore involves the examination of the changes that have taken place in the lives of these rural dwellers since the inception of the ADP in such areas as the size of farm, size of farm labour, crop yields, acquisition of socio-economic amenities such as bicycles, motor-cycles, motor cars, radio, television set, houses etc. The analysis involve obtaining the situation of the respondents before the inception of the ADP and their situation on all the aforementioned variables five years after the inception of the ADP.

Land preparation for traditional agriculture: The land-holding system in the rural areas has not encouraged large-scale farming in specific places. Cultivable lands are fragmented between few farmers living in a locality and most farmers have between two and three acres scattered in perhaps two or more locations. Land preparation for agriculture is traditional, requiring the exertion of human power.

Usually, the peasant and/or his siblings slash down either a virgin plot or one that has been left to fallow for a period of time. The plot is carefully cleared and the refuse burnt to ashes, ready for heaping. The low how is used for making the conical heaps in rows. Since the process has to be repeated annually for food-crops cultivation as against most cash-crops, this limits the extent of commitment of peasant farmers to food-crops cultivation.

A critical appraisal of the strategies of agricultural development in Nigeria: Agricultural development and extension services are desirable as means of rural development for the reasons that in most countries, developing or developed, an overwhelming majority of the rural population depend on agriculture for their livelihood. Furthermore agricultural development seems to underlie the whole clamour for self-reliance and is also intimately related to the capacity for both the urban and non-agricultural sector to develop (Hayani and Ruttan, 1971). Nicholis (1969) has also emphasized the almost "universal importance of having a substantial and reliable agricultural surplus as the basis of launching and sustaining economic growth". Johnston (1972) argued that agricultural productivity must increase to permit agriculture to make its "essential contributions" to overall development. There is a need, therefore, to accord the rural agricultural sector more attention in Nigeria not only because of its importance for food supply, but also that it can form the bed-rock on which ago-based industries can emerge.

Development in this developing economy depended on the development of her agricultural sector. Production

in this predominant sector of the economy is not only crude, but also is largely organized on the basis of family farms. An agricultural development strategy in the absence of corporate agriculture must be able to induce a majority of these "farming families" to respond to the policies and programmes devised for this purpose. A strategy of rural development via agriculture therefore implies a systematic attempt at disturbing the low equilibrium in traditional agriculture" (Chaudhri, 1979). Chaudhri argues that "low level equilibrium is reflected in terms of low and static productivity". One of the essential components of agricultural development, therefore, would be a qualitative change in institutional structure, he suggests. A successful disturbance of low-level equilibrium as he points out, could lead to:

- Change in level of productivity and acceleration in the rates of growth.
- Changes in the qualities of input factors accompanied by a substantial increase in the use of superior yield, raising modernization input factors.

Theoretical framework: This study examines modernization of traditional agriculture. It therefore hinges on modernization theory. Modernization theory is a theory of social change cast in neo-evolutionary terms with several variants. Modernization theory is concerned with economic change and industrialization. While Black (1972) explains it as a process by which pre-industrial societies become industrialized, others such as Levy (1967) and Smelser (1963) are content with painting a "before and after" picture, contrasting a set of characteristics associated with pre-industrial societies with the corresponding set that evolve in those that are highly industrialized.

The definitions of modernization are many but are often in terms of economic development. For instance, Moore (1963) regards the concept as "a total transformation of a traditional or pre-modern society into the types of technology and associated social organization that characterize the 'advanced', economically stable nations of the world". It is implicit in Moore's definition that the general characteristics of the 'traditional' or 'pre-modern' societies can be identified and that a transition to modernity can be effected in the hitherto pre-modern society.

Smelser (1963) focuses more on the idea of differentiation. He points out that developed economy and society are characterized by a highly differentiated structure and an under-developed one is relatively lacking in differentiation, hence, change centers on differentiation itself. By 'differentiation', "he refers to" the evolution from

a multifunctional role to several more specialized structure" (Smelser, 1963). The structural differentiation that occurs in a developed country raises the problem of "integration" in the Durkheimian stance. New integrative mechanism which themselves result from differentiation arise. For example, in the economic sphere, such mechanisms include trade unions, governments in their regulation of labour allocation, welfare agencies, corporations and savings institutions. Unfortunately, these integrative mechanisms do not always keep pace with rapid differentiation that is occurring and this results in disturbances. Smelser identifies the following sources of disturbances: Uneven structural changes during modernization process, providing anomies (in Durkheimian stance of degradation-the old rule no longer holds); new activities and norms often conflict with old ones (causing socio-economic conflict); Attempts of Central Governments often to meet with resistance from the traditional power sources whose positions are threatened. He emphasized that in a developing economy, the government should be a modernization agent and that there should be increasing central control during modernization.

Smelser' further contends that economic development takes place through:

- Modernization of technology leading from simple, traditionalized technique to the application of scientific knowledge;
- The commercialization of agriculture which is characterized by the move from subsistence to commercial farming leading to wage labour;
- The industrial process which depicts the power and lastly;
- Urbanization which consists of changes in the ecological dimensions and is the movement from farm and village to large urban centres.

The case study: The case study for this research was Ondo State Agricultural Development Programme in Ondo State in Nigeria. The study was conducted in the last quarter of 2005.

The Ondo State Agricultural Development Project (ODSADEP) which is an off-shoot of the defunct Ekiti/Akoko Agricultural Development project, is one of the projects within the multi-state Agricultural Development Programme Phase III. Others are: Lagos, Oyo (now Oyo and Osun) and Rivers State Agricultural Development Programmes. The Programme formally took off in 1989 after the termination of the enclave Ekiti/Akoko Agricultural Development Project in December, 1988. Whereas the enclave project covered only eight Local Government Areas, the Ondo State Agricultural

Development Programme (ODSADEP) is a state-wide Programme, covering all the Local Government Areas in Ondo State in Nigeria.

Statement of problem: Agriculture is the mainstay of the economy of the rural areas in Nigeria and was in fact the epitome of the national economy before the discovery of oil in 1970. However, agriculture has not only lost its place in national income earnings but Nigeria has become an importer of food and other agricultural products. This is attributable to a number of factors among which are the reduction in agricultural labour force, the decreasing yield in agriculture due to the continued use of obsolete, energy dissipating, crude implements and the over-use of land.

It is in recognition of this precarious condition that the Nigerian government at its various levels-National, State and Local-have attempted to develop agriculture with a view to increasing and improving agricultural productivity and improving rural income. The Ondo State Agricultural Development Project (ODSADEP) first started as an enclave: Ekiti/Akoko Agricultural Development Project (EAADP) in 1983. In 1989, it was enlarged statewide and renamed Ondo State ADP. It is one of the institutionalised efforts at improving agricultural productivity in Ondo State and hence through inter-sectorial linkage, to stimulate the development of rural socio-economic life.

More than two decades had passed now since the inception of this project first as an enclave project and later as a statewide programme. There arises, therefore, a need for the assessment of its operation to determine its effectiveness in effecting agricultural modernization in Ondo State.

Objectives of the study: The main objective of the study is to examine the efforts of the Agricultural Development Programme in effecting agricultural modernization in Ondo State in Nigeria. The followings are the specific objectives of the study:

- To determine the effect of the ADP on the farming operations of its target farmers in Ondo State measured in terms of changes in farm yields and size of land cultivated.
- To determine the awareness and the use of ADP packages by the rural farmers in Ondo State.
- To identify the other benefits derived by the farmers under the Agricultural Development Programme.

Hypotheses of the study: Arising from the specific objectives stated above, a number of working hypotheses were tested. These include:

Hypothesis 1: "There is no significant difference in the mean crop yields of contact farmers before and five years after participating in ADP's activities".

Hypothesis 2: "There is no significant difference between the crop yields of contact farmers and non-contact farmers since the ADP."

Hypothesis 3: "There is no significant difference between the mean hectareage of land cultivated by contact farmers before and after the ADP activities."

Hypothesis 4: "There is no significant difference between the mean score of hectareage of land cultivated by contact farmers and non-contact farmers after the inception of the ADP."

MATERIALS AND METHODS

The major instrument of data collection for this study was a set of self-administered questionnaire that contained 25 question on the subject-matter. The major respondents involved in this study are farmers, both 'contact' and 'non-contact'. In order to ensure wide coverage of the state, the selection of contact and non-contact farmers were done from all the six zones into which the Agricultural Development Programme had divided the state. Multi-stage random sampling technique, through the use of table of random numbers was used to select the blocks and cells for the study. A total of 121 blocks and 24 cells were purposively selected for the study. Twelve farmers (six contact farmers and six non-contact farmers) were thus randomly selected and interviewed for this study making a total of 288 (that is 144 contact farmers and 144 non-contact farmers). The contact farmers were systematically selected while the non-contact farmers were selected using random sampling technique.

Furthermore, supplementary data was sourced from 65 extension staff of the ADP who were systematically selected through the processes of multi-stage random sampling which involved random selection of blocks from the six zones under the ADP and 48 cells out of the 384 cells under the ADP.

The data collected were analyzed using appropriate statistical tool to verify th earlier stated hypotheses.

RESULTS AND DISCUSSION

Agricultural Development Programme(ADP) designed to effect agricultural transformation through direct interaction with specially selected group of farmers

Table 1: Distribution of Respondents (Contact and non-contact farmers) according to their socio-economic characteristics

Age group in years	No	(%)	No	(%)
25-29 years	7	4.9	8	5.6
30-34 years	9	6.3	10	6.9
35-39 years	16	11.1	14	9.7
40-44 years	22	15.3	23	16.0
45-49 years	29	20.1	28	19.4
50-54 years	25	16.0	20	13.9
55-59 years	21	14.6	20	13.9
60-64 years	13	9.0	15	10.4
65 years and above	4	2.7	06	4.2
Total	144	100	144	100
Level of education	No	%	No	%
Did not attend school	50	36.8	60	41.7
Primary School Education	55	38.2	70	48.6
Secondary/Technical School	24	16.6	9	6.2
College of Education/Technology	6	4.2	5	3.5
University Education	6	4.2	0	0
Total	144	100	144	100
Religion	No	%	No	%
Christianity	112	77.8	108	75
Islam	24	16.6	35	24.3
Traditional religion	7	4.9	1	0.7
Others	1	0.7	0	0
Total	144	100	144	100
Number of wife/wives	No	%	No	%
None	4	2.85	3	2.07
1-2 wives	113	78.55	130	90.27
3-4 wives	11	7.6	6	4.16
5-6 wives	2	1.4	0	0
Total males	130	90.3	130	90.3
Total females	14	9.7	139	96.5
Grand total	144	100	144	100
Number of children	No	%	No	%
None	4	2.7	1	0.7
1-5 children	87	60.4	86	59.7
6-10 children	43	29.9	48	33.3
11-15 children	7	4.9	6	4.2
16-20 children	2	1.4	2	1.4
21-25 children	1	0.7	1	0.7
Total	144	100	144	100

branded "Contact Farmers" who are in turn expected to extend the acquired knowledge to the other set of farmers tagged "Non-Contact Farmers". These two sets of farmers were involved in this study. Table 1 shows the socio-economic characteristics of the respondents in this study.

Age: Table 1 reveals that the largest percentage of the contact farmers (20.1%) fall within age bracket of 45 and 49 years while the lowest percentage (2.9%) were 65 years and above. The mean age of the contact farmers is 49.12 while the standard deviation is 13.35. It can be noted from the table that more than 50 % of the contact farmers are 45 years and above while more than 25% are 55 years and above. The age structure of the non-contact farmers as further revealed in the table does not appear to be different from that of the contact farmers.

Level of education: Further revealed on the table are the levels of education of the respondents. 36.8% of the contact farmers have no formal education 16.6% had

Table 2: Distribution of contact farmers according to their yield per crop grown (No of 50kg Jute Bags produced per crop/season before and since the inception of the ODSADEP)

Type of crop	(A) Before ADP					(B) After 10 years with ADP				
	1-20	21-40	41-60	61-80	81 and above	1-20	21-40	41-60	61-80	81 and above
Rice	25	04	4	00	00	12	58	11	1	00
Maize	37	17	16	00	00	31	16	38	4	2
Cassava	52	14	02	00	00	10	43	72	19	00
Cowpea	14	00	00	00	00	10	9	00	00	00

Mean score = 148.67, Mean score = 191.33, Standard deviation = 192.72, Standard deviation = 211.96, Z value = 2.984, Critical Z Value at 0.05 =1.96, Critical Z value at 0.01 = 2.99

secondary/Technical education while the remaining 8.4% had tertiary education (College of Education, Polytechnic, College of Technology and University). This category of respondents is expected to play very important role in transfer of agricultural innovation. They, among others are expected to: Understand modern agricultural technology faster than their less-educated counterpart by the virtue of their level of education seek agricultural innovation and experiment what they discover be able, willing and ready to disseminate agricultural innovation learnt to other farmers. The level of education plays an important role in individual understanding, acceptance and dissemination of innovation packages.

Religion: Religion is also a vital social factor in the spread of the benefits accruing from the activities of an Agricultural Development Project (ADP). The table on personal characteristics of the respondents indicates that 112 out of the 144 respondents reveals that they are christians of various denominations while muslims among the respondents were 24 (16.6%) and 7 practice traditional religion while only one is a free-thinker.

The table also shows that just as among the contact farmers, those who profess to be christians are higher among the respondents of non-contact farmers. Among the non contact farmers, 75% are professing christians, 24.3% muslims and 0.7% practice traditional religion. A knowledge of the analysis of the religious beliefs of a community is very important for the extension agents. The reason is that certain innovations may be advantageous and yet forbidden by the religious belief held by a majority of the members of the community. For example, the introduction of pig-rearing and pork consumption into a community that is dominated by adherents of Islamic religion will be met with hostility and resistance.

Marital status, number of wives and children: The table also reveals the marital status of the respondents. While 132 of the contact farmers (91.8%) were married, the remaining 12 were single due either to divorce (2.1%), separation (2.7%) widowerhood (.7%) and never married (2.7%). Farming families are important channels through which the ADP projects carry out the spread of

innovations. The table further shows that 4 of the contact farmers do not have any wife, 113 (78.5%) have between 1-2 wife/wives, 11 (7.6%) have between 3-4 wives while 2 have between 5 and 6 wives. All the remaining 14 are females. The total number of children of the contact farmers was also presented on the table. Majority (60.4%) have between 1 and 5 children which was in the group of 21-25. The mean number of children for contact farmers is 3.23 and the standard deviation is 3.68%.

The marital status and number of wives and children of the non-contact farmers were also presented on the table. About 98% of the non-contact farmers are married, while only about 2.1% are not married. The 2.1% that are not currently married are single due to widowhood and having never married. The highest percentage (90.3%) have between 1 and 2 wives while 4.16% have between 3 and 4 wives. There were 3.5% females. Furthermore, 59.7% have between 1 and 5 children while 33.3% have between 6 and 10 children. The family size for farming families can be advantageous for productive purposes if the members all contribute to the farming processes. Among the contact farmers, as much as 27.10% of the respondents profess that their sources of labour for their farming operations were the members of their family and for the non-contact farmers, it is about 22%.

Effects of agricultural delopment programme on farm practices: The effects of Agricultural Development Programme are evaluated in the following areas:

- Farm size and average yields of farmers.
- Sources of material inputs into the farms.
- Articles of convenience possessed by farmers.
- Awareness of assistance available from ADP.
- Farm size and average yields of the farmers.

Table 2 shows the yield of contact farmers before the ADP and the average yield after the ADP. The table contains analyses on only four crops, Rice, Maize, Cassava and cowpea. This is because these were the crops that the farmers could estimate the quantity produced in jute bags.

The table reveals a definite increase in the number of farmers that have improved yields in all the crops

Table 3: Distribution of contact farmers according to hectareage of land cultivated per crop before ODSADEP (Size of Land cultivated in Hectareage)

Type of crop	(A) Before ADP					(B) After 10 years with ADP				
	No 0.1-0.5	No 0.6-10	No 1.1-1.5	No 1.6-2.0	No 2.1 and above	No 0.1-0.5	No 0.6-10	No 1.1-1.5	No 1.6-2.0	No 2.1 and above
Rice 15	12	4	2	0	18	44	10	5	1	
Maize	20	23	13	30	0	15	30	24	20	1
Yam 23	06	0	00	00	30	08	1	00	00	
Cassava	14	35	38	03	00	02	40	48	30	24
Cowpea	00	00	14	00	00	02	17	00	00	00
Soybeans	14	00	00	00	00	00	8	00	00	00
Cocoyam	19	03	00	00	00	12	28	1	00	00

Mean score = 0.768, Mean score = 1.6, Standard deviation = 0.92, Standard deviation = 1.56, Z = 4.51, Z tabulated at 0.05 = 1.96, Z tabulated at 0.01 = 2.99

Table 4: Distribution of non-contract farmers according to Hectareage of land cultivated per crop before and since the inception of ADP

Type of crop	Size of land cultivated in Hectares before ADP					Since ADP				
	0.1-0.5	0.6-10	1.1-1.5	1.6-2.0	2.1 and above	0.1-0.5	0.6-10	1.1-1.5	1.6-2.0	2.1 and above
Rice 15	28	6	2	00	20	33	08	3	1	
Maize	30	12	13	00	00	19	20	18	16	2
Yam 23	03	1	00	00	18	04	00	00	00	
Cassava	14	70	10	00	00	12	64	06	00	00
Cowpea	7	00	2	00	00	04	08	00	00	00
Soya beans	2	00	00	00	00	04	00	00	00	00
Cocoyam	20	2	00	00	00	14	01	00	00	00

Mean score = 0.681 hectare, Mean score = 1.2 hectares, Standard deviation = 0.78, standard deviation = 0.82, Z calculated = 3.421, Z tabulated at 0.05 = 1.96, Z tabulated at 0.01 = 2.99

analysed. For example while 25 of the respondents were realising between 1-20 bags of rice per season before the ADP, this number reduced to just 12 for this same category of producers while there was a remarkable increase from 4 (before ADP) to 58 (after ADP) of farmers who produce between 21-40 jute bags per season. Furthermore, maize production and cassava production witnessed a sizeable increase since the ADP. The mean produce of contact farmers was 148.67 before the ADP and 191.33 since the ADP with standard deviation 192.72 before ADP and 211.96 since ADP. This shows definite increase in crop yield of farmers since 1990, the year of inception of ADP.

Increment in the yield would have enhanced the standard of living of the farmers as a result of the increment in income that it would bring. In order to know the position of yield each of the crops produced by the farmers, the total number of 50kg jute bags produced for each crops by all the respondents before the ADP and since the inception of the ADP. Each of the crops witnessed substantially increment in yield. The yields were as follow: Cassava increased from 1462 50kg bags before the ADP to 1628 50kg bags since the ADP. Third in the rank was rice which also witnessed increase in yield from 958 50kg bags to 1320 50kg bags. Cowpea, (though not widely cultivated), also witnessed an increase in yield from 162 50kg bags to 185 50kg bags.

Furthermore, the Z test statistic was calculated to determine whether the difference in the mean was significant. The Z test confirms that there is a significant

difference in the two means since the Z value calculated (2.954) was less than the critical value of Z at 0.05 level.

Table 3 also contains the distribution of contact farmers according to the hectareage of land cultivated per crop before ADP and five years after ADP. The table reveals a considerable increase in the number of hectares cultivated by respondents per crop after introduction of ADP. Out of the 7 crops analysed on the table, none witnessed a reduction in the size of hectares cultivated and the number of cultivators. The mean score of hectares cultivated before ADP is 0.768 while the standard deviation is 0.92 and the mean score after ADP is 1.6 while the standard deviation is 1.56. In order to establish the degree of difference in the means, the Z test was employed. The Z value calculated was 4.51 while the Z table value is 1.96 at 0.05 level. This establishes a significant difference in the means before and since the ADP in the positive direction. This might have been due to the impact of the ADP.

Table 4 also, shows the distribution of the non-contact farmers according to the hectareage of land cultivated per crop before the ADP and since the ADP. The table reveals that except in rice and cassava cultivation, majority of the people cultivate between 0.1 and 0.5 hectares of land. The table also reveals that more than 75% of the farmers cultivated 1 ha⁻¹ or less of each crop. The mean score of hectares of land cultivated is 0.681 and the standard deviation is 0.78 before the ADP.

However, since the ADP, there has been an increase in the number of non-contact farmers that increased the

Table 5: Distribution of non-contact farmers according to Average yield per crop grown

Type of crop	No of 50kg Jute Bags produced per crop/season									
	1-20	21-40	41-60	61-80	81 and above	1-20	21-40	41-60	61-80	81 and above
Rice	32	14	5	00	00	10	45	09	00	00
Maize	20	20	14	1	00	00	29	14	06	01
Cassava	12	12	80	02	00	00	08	85	04	01
Cowpea	9	9	00	00	00	00	04	08	00	00

Mean score = 149.77 50kg. Jute bags, Mean score = 176.4 50kg Jute bags, Standard deviation = 184.62, Standard deviation = 168, Z calculated =2.084, Z tabulated at 0.05 = 1.96, Z tabulated at 0.01 = 2.99

Table 6: Distribution of respondents according to sources of Material input into the farm

	Contact farmers		Non-contact farmers	
	No	(%)	No	(%)
Bought from (AISC)- ADP Comm. Services	54	37.5	50	34.7
Bought from other government source	2	1.4	2	1.4
Bought from open markets	15	10.4	10	6.9
Reinvestment from previous harvest	10	6.9	8	5.6
All of the above	63	43.8	74	51.4
Total	144	100	144	100

size of land cultivated. For instance, 20 non-contact farmers cultivated between 0.1 - 0.5 hectares of land for rice each, while 30 non-contact farmers cultivated 0.6 and 1.0 hectare of land for rice each. The mean of hectare of land cultivated by non-contact farmers after the ADP was 1.2 ha⁻¹ and using the Z statistic to verify the level of significance of the means, the Z test statistic calculated was 2.42 while, the Z tabulated was 1.96 at 0.05 level and 2.99 at 0.01 level. The difference in the means of land cultivated by non-contact farmers before and after the ADP was significant at 0.05 level.

Table 5 also reveals the distribution of the non contact farmers according to the average yield scores per crops grown. Their highest yield scores are in cassava where 80 of the respondents indicated that they produced between 21 and 40 jute bags of processed cassava (that is gari) per season. It should be noted however, that except in cassava production, in all the other crops considered, more than 50% of the total respondents that cultivate the crops indicated that they realized an average yield of just between 1 - 20 jute-bags before the ADP. Since the ADP, however, there has been definite increase in the average yield scores of the non-contact farmers due, perhaps, to the effectiveness of the work of contact farmers. The average yield score increased from 149.77 (50 kg) jute bags before ADP to 176.40 (50 kg) bags after the ADP. The Z statistic confirmed that there was a significant difference in the mean of crop yields before and after ADP at 0.05 critical level.

Sources of material inputs into the farm: The respondents were asked about the sources of material inputs into the farm. An analysis of the responses presented in Table 6 below reveals that 54 contact farmers (37.5%) buy the input from Agricultural Input Supply

Company (AISC), the commercial services Division of the ADP, 14% buy their input from other government sources such as ministry of Agriculture and Local Government Offices. 10.4% buy their inputs from open markets such as private agro-allied stores, other farmers, markets other than stores as well as gifts. 6.9% get their farm inputs through reinvestment from previous harvests while majority (43%) indicated that they use all the sources stated above simultaneously as the opportunities present themselves.

The responses analyzed above together with the analysis on Table 7 shows that an average of about 81% of the contact farmers source their farm inputs from the ADP commercial services. This shows that not only does the project introduce innovations but it participates in making the materials readily available to the expected users.

A spill-over effect of the activities of the ADP was revealed especially in the analysis of the sources of material input for the farming operations of the non-contact farmers. 34.7% of the non-contact farmers revealed that they buy their inputs from ADP Commercial Services Department while another 51.4% revealed that same source together with other sources provide avenue for sourcing inputs for their farming operations. 1.4% of the non-contact farmers bought their inputs from other government sources while 6.9 and 5.60% bought from open markets or reinvested from previous harvests.

Awareness of contact and non-contact farmers of assistance available from ADP: The analysis in Table 7 actually shows the responses of the contact and non-contact farmers as to whether they are aware and they make use of the assistance provided by ADP. It was revealed that 85.4% of the contact farmers are currently

Table 7: Distribution of Respondents According to their Awareness of and Assistance from the ADP

	Contact farmers						Non-contact farmers					
	Yes	(%)	No	(%)	Total	(%)	Yes	(%)	No	(%)	Total	(%)
Whether currently benefiting from ADP	123	87.7	21	14.6	144	100	11	7.6	133	92.4	144	100
Whether always seek advice of extension agents	126	87.5	18	12.5	144	100	10	6.9	134	93.1	144	100
Whether always look for innovation	126	87.5	18	12.5	144	100	10	6.9	134	93.1	144	100
Whether aware of the ADP Zonal office nearby	133	92.4	14	7.6	144	100	3	2.1	141	97.9	144	100
Whether employs the services of ADP	125	86.8	19	13.2	144	100	10	6.9	134	93.1	144	100

benefiting from the activities of the ADP while 14.6% are not currently benefiting. While 87.5% always seek for advice of the extension workers on agricultural practice, only 12.5% say they do not always look of advice. The high percentage of people who always look for advice depicts the amenability of the contact farmers to change and their quest for improvement of agricultural practice. The same percentage of contact farmers who said that they always seek for advice, also said that they always look for agricultural innovation. 92.4% of the contact farmers are aware of the ADP Zonal Office and 86.8% indicate that they employ the services of the ADP regularly.

Table 7 further reveals the analysis of the responses of the non-contact farmers about level of awareness and use of the services available in the ODSADEP. The table reveals that majority of the non-contact farmers (92.4%) are not currently directly benefiting from ODSADEP while only 7.6% said that they are benefiting in a way, perhaps through purchase of inputs from AISC which is open to all farmers. Majority of the farmers, (93.1%) claimed that they do not always seek advice of extension workers or look for innovation before going into cultivation every season. An overwhelming majority (97.9%) of the non-contact farmers said that they are not aware of the Zonal Office of the ADP in their area while 93.1% of the non-contact farmers indicated that they do not employ the services of the ADP.

The implication of the analysis above is that with the high percentage of contact farmers using the services provided of the ADP, the impact of the ADP will be enhanced.

Benefits derivable by farmers of Ondo State from the activities of ODSADEP: The farmers in this study were asked what benefits they have derived from the ADP. Below is a summary of the responses of the farmers on benefits derived from the ADP.

- The farmers have direct and quick access to agricultural inputs such as seedlings, fertilizers, herbicides and research findings and results.
- Some farmers have the grace to take loans though not directly from the Project but as a result of the activities of the project to finance their farming activities.

- Farmers have easy access to market their products because all available opportunities are already made known to them by the project.
- The farmers enjoy the privilege of getting improved seeds and Poultry food from the project to enhance their output.
- There is improvement in their level of income and the results in improvement in their standard of living.
- The provision of infrastructural facilities such as roads and portable drinkable water (dug wells and boreholes) by the project in the certain communities serves as infrastructural improvement on the quality of life of the rural farmers. With the construction of such roads, it is easy for the farmers to evacuate their farm produce to the market centres. The farmers are informed about how to control pest and diseases and thus the quality of the farmers farm produce have improved tremendously.
- Many farmers in the state are now constituted into Agricultural Cooperative Societies. And apart from the benefits derived directly from the Ondo State Agricultural Development Project, the small scale farmers who are members of these co-operative societies derive a lot of economic and social benefits from being members. These include:
 - Encouragement of the spirit of self-help through mutual help by working together to achieve individual and group objectives.
 - Production of men and women with a sense of both individual and joint responsibilities for better farming, better business and improved living.
 - Availability of agricultural services to members.
 - Procurement of inputs and consumer goods at subsidized prices for sales to members at reasonable prices.
 - Minimisation or elimination of exploitation of agricultural producers by middlemen through joint production and distribution.

CONCLUSION

The following conclusions can be drawn from the study, based on the specific findings itemized in the foregoing study.

The increment in the average yield of the farmers since the inception of the ADP attests to its effectiveness. The mean score of crop yields went from 148.67 before inception, to 191.33 after inception. Each of the crops cultivated by the farmers witnessed substantially increment in yield. The break-down of the yields were as follow: Cassava increased from 1,462 50 kg bags before the ADP to 1,628 50 kg bags since the ADP. Third in the rank was rice which also witnessed increase in yield from 958 50-1,320 50 kg bags. Cowpea, (though not widely cultivated), also witnessed an increase in yield from 162 50-185 50 kg bags. This was also line with the earlier findings of Fadinde (2002).

Many of the farmers have acquired many modern amenities such as radio, television, bicycles, motor cycles and motor vehicles since the inception of the ADP. However, purchase of radio recorded the largest percentage, implying perhaps, its usefulness in sourcing agricultural information.

Furthermore, the general attitude of the ADP by farmers reveals that the ADP is desirable that its areas of operation should be widened. Not a single farmer among those involved in this study, wanted the ADP to be scrapped.

The programme has provided the following opportunities and facilities within the state. Virtually all the respondents stated that they benefited from the ADP in form of awareness about modern farming practices through training and demonstration, providing the necessary linkage between the farmers and researchers through the fortnight training meetings, provision of farm inputs through the Agricultural input supply company (AISC), mechanization and biological innovation for farming operations, farmers have opportunities of knowing the characteristics and nutrient contents of the soils used for agriculture so as to guide on what types of crops to plant and also to plan on soil management appropriate fertilizer application, construction of local storage facilities, all-round-the-year planting calendar, availability of fingerlings and day-old chicks for rearing, display of innovated farm implements for local fabrication,

processing and milling of rice and maize, provision of wells, boreholes and rehabilitation and maintenance of rural roads, group formation such as agricultural cooperatives, users' association (for road and water projects maintenance) and women in Agriculture.

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