

Full Length Research Paper

Spatial assessment of farmers' cooperative organizations in agricultural development in Gurara area of Niger State, Nigeria

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The cooperative organizations among farmers are viewed as contributory forces towards growth and development of Agricultural production in recent times. The cardinal objective was to assess such elements that enhance their performance. Both primary and secondary data were used for the study. The primary data were collected with the aid of structured questionnaire administered among 60 different registered farmers' cooperative organizations in the study area. Data were analysed by employing descriptive statistics such as frequencies, mean, percentages and ordinary least square multiple regression. The study revealed that income generation, duration and years of cooperative experience, type of agricultural activities and quality of leadership were found to be significant at 0.01 alpha value while enrolment in terms of population size was found to be significant at 0.05 alpha value. Based on the findings, it was recommended among other things that agricultural policy makers and economic planners should take into cognizance the morale boosters for the cooperative organizations such as lowering interest rates on granting credit facilities, empowering the farmers' cooperatives to perform through legislative control and adopting cooperatives as an effective strategy towards socio-economic transformation of the less-privileged and disadvantaged lagging areas and by so doing, it will assist in fostering regional balance in our developmental efforts.

Key words: Agriculture, cooperative, farming, organization, development.

INTRODUCTION

The history and importance of agricultural cooperative organizations in Nigeria is a long-standing one. Ihimodu (1998) traced their origin to British administration in 1935 with the enactment of the cooperative society law. Moreover, before the legislative control there had been indigenous attempts to form associations such as cocoa farmers' society and kola-nut planters union. These associations were formed in major cocoa producing areas and they were independent of government support (Ihimodu, 1998: 50). The collapse of the traditional mode of cooperatives was attributed to incapacitation of members to bear risk, expectation of high returns on investment and poor management. Cooperative organizations have undergone changes over the years ranging from traditional, informal to modern and formal institutions (Harris and Stefanson, 2005). The cardinal

objective of introducing agricultural cooperative was to increase crop production and credit facilities to cultivators. They have been deeply involved in activities that have impacted on the livelihood of members in particular and rural people in general.

This opinion was shared by Omotosho (2007) that cooperatives often ploughed back resources in terms of dividend on share capital and distributed proportionally to members as patronage bonus. These voluntary social organizations are found in communities possessing common interests but differ in size and degree of interaction among members (Thompson, 2002). In these societies, members have had the ability to influence ideas and actions of the government through a common bargaining power. Royer (2005) and Chambo (2009) had the belief in principle that agricultural marketing

cooperatives were competing favourably with private individuals including multinational companies amidst of various challenges such as price fluctuations, legislative controls and low capital accumulation. In this regard, most community and agricultural development agencies have sought the support of these organizations as effective means of imparting new ideas, techniques, harnessing their resources towards improving agricultural production and this constitutes the significance of farmers' cooperative organizations towards the development of agricultural sector.

The country embarked on many agricultural development strategies such as input subsidization, marketing boards, and institutional reforms geared towards improvement of agricultural production. The failure of many agricultural development programmes in Nigeria could be traced to poor organizational structure and implementation at the grassroots level (Omotoso, 2007: 57). The rural poor farmers are isolated, under-educated and lack the means to win greater access to means of production such as capital, labour and this engendered pulling together financial resources towards a common goal. Donald (2002) remarked that some projects targeted ranged from medium to large-scale producers and supporting them with technology, credit and extension services hoping that improvements will gradually extend to the more backward and disadvantaged rural area but unfortunately none of such projects brought about increases in the yield of crops for participants and non-participants. Indeed, a good number of factors are responsible for this, such as constantly changing technology through education and research, availability of equipment and supplies including the ability of farmers to obtain them on time, poor transportation network, among others (Adefila, 2011).

It is the gap arising from the poor performance of government and other institutions that led to the formation of farmers' organizations as means of achieving goals of common interests (Odigbo, 1998: 213). These agricultural cooperative societies do engage in the production, processing, marketing and distribution of agricultural products. An important form of agricultural cooperative in Nigeria is the Group Farming Societies (GFS). Members of this society engage in the production of a variety of crops while they also arrange for the marketing of the products. Some other agricultural cooperatives are devoted to the cultivation of single crops and such societies are named after the crops such as Tobacco Growers Cooperatives (TGC), Cooperative Credit and Marketing Societies (CCMS). In addition, there are Cooperative Production and Marketing Societies (CPMS) in marketing crops such as cocoa, groundnuts and palm produces.

Moreover, there are modern agricultural processing cooperatives for crops such as oil seeds and groundnuts (Ihimodu, 1998: 50; 2007: 36). Farmers' cooperatives have played far reaching roles in agricultural development.

Certain factors influence the role performance of these organizations. This study therefore evaluates some of the factors influencing role performance of these farmers' cooperative organizations in agricultural development in the study area.

The study area

The study area is located between Latitude 9° 30" north of the equator and Longitude 6° 15" east of the prime meridian. It is bounded with Suleja Local Government Area to the south-west, Federal Capital Territory to the south-east and Paikoro Local Government Area to the north. The area enjoys a tropical climate with distinctive dry and wet seasons. The seasons are governed by two principal air masses namely, the Tropical maritime (Tm) and Tropical continental (Tc) air masses. While the former air mass is moist and originates from the Atlantic Ocean bringing rain to the entire region between the months of April and October, the latter air mass is dry, cold and dusty because it originates from the desert, bringing its dry effects to the area between the months of November and February. The annual rainfall is about 1,230 mm and the mean maximum temperature is 37°C (ABU, 2011) and this may increase to about 40°C, especially during the month of March that precedes the commencement of rain.

The formation of the soil is largely a function of lithology, topography, climate and vegetation cover. The soils have developed from metamorphic and sedimentary parent material through several cycles of tropical wet and dry conditions. The physiographic nature of the area is much related to a gently undulating terrain but supported savanna woodland vegetation. However, anthropogenic activities such as bush burning, agricultural activities, deforestation and animal husbandry have relegated the vegetation to poor savanna grasslands. The major ethnic groups are the Nupes, Gbagyis, Hausas, Kambaris and Kadaras (ABU, 2011). The people are predominantly farmers and cattle rearers. The farmers produce food crops such as guinea-corn, maize and cassava at subsistence level. The farmers are quite enterprising and constitute themselves into cooperative societies. Farmers' cooperatives are prominent in the study area, easily accessible due to its location along Kaduna-Abuja Express Highway, possessing relevant records for the research and thus call for investigating their role performance in the development of agriculture. The list of the farmers' cooperatives in the study area is presented in Table 1.

METHODOLOGY

A reconnaissance survey was carried out in order to familiarize oneself with the activities of the cooperative societies and to make spot assessment of the unions. In addition, a focused group

Table 1. List of registered farmers' cooperatives in Niger State, Nigeria.

S/N	Local Government Area	No. registered	Membership
1	Agaie	519	31,140
2	Agwara	141	5,640
3	Bida	579	34,265
4	Borgu	348	12,180
5	Bosso	577	17,310
6	Chanchaga	2,203	168,120
7	Edati	136	4,080
8	Gboko	339	1,450
9	Gurara*	60	10,170
10	Katcha	379	7,595
11	Kontagora	1,048	36,905
12	Lapai	523	15,690
13	Lavun	541	13,525
14	Magama	419	8,380
15	Mariga	364	9100
16	Mashegun	250	6,250
17	Mokwa	444	13,320
18	Munya	170	4,760
19	Paikoro	474	14,220
20	Rafi	384	20,220
21	Rijau	219	4,385
22	Shiroro	674	22,925
23	Suleja	655	26,200
24	Tafa	33	500
25	Wushishi	236	4,995
	Total	11,715	493,325

Source: Ministry of Investment, Commerce and Cooperatives Minna, Niger State (March, 2011). *: Study area.

discussion (FGD) was conducted, so as to collect relevant data about the operations of the cooperative organizations. In the study area there were 60 registered farmers' cooperatives. The list of farmers' cooperative organizations was compiled from the related ministries in the study area. The questionnaire was a major research instrument for the study which was assessed for content validity by a team of experts in Agricultural economics and cooperative studies. The items of the instrument had a confidence coefficient of 0.95 reliability.

The questionnaire was administered among all the registered farmers' cooperatives represented by their respective Chairmen and Secretaries, thereby constituting the sample size for the study. The secondary sources of data included those collected from the related ministries, government gazettes, agencies, parastatals and published journals. The study employed descriptive statistical techniques involving calculation of the mean, percentages, frequencies and inferential statistics such as multiple regressions. The multiple regression model is stated as follows:

Y is the dependent variable, while X is the independent variable:

$$Y = f(X_1, X_2, X_3, X_4, X_5, e)$$

where; Y= Role performance of the farmers' cooperative organizations; X1 = Income of the farmers in Naira; X2 = Experience in farming in terms of years; X3 = Number of people enrolled (population size); X4 = Type of agricultural activities - crop = 1, animal husbandry = 2, Fisheries = 3 and agro - allied enterprises = 4; X5 = Assessment of leadership (good leadership = 1; poor leadership = 0); E = error term.

Null hypothesis

There is no significant relationship between farmers' personal traits – age, gender, marital status, income, level of education and performance in agricultural development.

DATA ANALYSIS AND RESULTS

Socio-economic characteristics of the farmers' cooperatives

A cursory glance at Table 2 revealed that a majority (58.4%) of the farmers' cooperatives collected funds from credit facilities made available by their respective organizations. In addition, 30.0 and 8.3% of the cooperative societies got their income from levies and dues respectively. Indeed, only 3.3% of the income came from launching programmes. This implies that the farmers' cooperatives had little or no access to external financial resources in executing agricultural development activities. Merrett and Walzer (2001) remarked that funding of the cooperatives often came from contributions made by members and rarely did they receive donations from external sources.

It is obvious that if financial resources were to be increased, it would enhance role performance of the cooperatives in agricultural development. Credit is one of the basic pre-requisites to increasing agricultural production. Rotan (2000) had earlier remarked that cooperatives deserved higher income in order to boost agricultural production. The type of agricultural activities being practiced by the farmers' cooperatives showed that majority (41.7%) of the members engaged in cultivation of crops, some (33.3%) of them engaged in animal husbandry. In addition, some 20.0 and 5.0% of them practiced fisheries and agro-allied enterprises respectively. This is an indication that cultivation of crop and animal husbandry dominate other agricultural activities in the study area. USDA (2001, 2005) had reported that livestock production has been the major source of income and food to most people in the world. FOS (2006) reported that livestock contributed about 6.6% and poultry accounted for about 6% of gross domestic products (GDP) in Nigeria.

The annual income of the farmers' cooperatives was presented in Table 2. The level of income was based on the assessment made by the executives from each cooperative organization. It showed that some (46.6%) of

Table 2. Socio-economic traits of the farmers' cooperatives.

Variable	Category	Frequency	Percentage
Sources of fund	Credit facilities from the cooperatives	35	58.4
	Loan from financial institutions	5	8.3
	Levies and dues from members	18	30.0
	Launching of fund	2	3.3
Type of Agric. activity	Raising of crops	25	41.7
	Animal husbandry	20	33.3
	Fisheries	12	20.0
	Agro-allied enterprises	3	5.0
Level of income (p.a)	10,000 – 40,000	15	25.0
	41,000 – 80,000	12	20.0
	81,000 – 120,000	28	46.7
	121,000 – 160,000 +	5	8.3
Farming experience (years)	0 – 10	22	36.7
	11 – 20	18	30.0
	21 – 30	12	20.0
	31 – 40+	8	13.3
Enrolment (size)	0 – 50	7	11.7
	51 – 100	22	36.7
	101 – 200	28	46.6
	201 – 300	3	5.0
Age of establishment	0 – 10	25	41.7
	11 – 20	17	28.3
	21 – 30	10	16.7
	31 and above	8	13.3

Source: Author, 2011.

the farmers' cooperatives organizations had annual income level of 81,000 to N120,000, while 25.0% had income of about 10,000 to N40,000. In addition, 20.0 and 8.3% had annual incomes of 41, 000 to N80, 000 00 and 121, 000 to N160,000 and above respectively. The incomes of the farmers' cooperative organizations range from 10, 000 to N160, 000 per annum. This is an indication that income earnings by the farmers' cooperatives are still meager for meaningful agricultural development. The years of experience of the farmers' cooperatives in agriculture were investigated and it revealed variations in terms of length of experience. For instance, some (46.7%) of them have obtained 0 to 10 years experience in farming while 30.0 and 20.0% of them acquired 11 to 20 years and 21 to 30 years experience in farming respectively.

In addition, some 13.3% of the cooperative organizations attained 31 to 40 years experience in cooperative farming. Indeed, experience goes along with skill acquisition, which is fundamental to efficiency and

effectiveness in any job operation. The result implies that most cooperative societies have acquired reasonable years of experience in cooperative farming which can have spread effects on agricultural development. This result apparently corroborated with Torgerson (1990), and Trechter (1996) that farming experience significantly correlated with adoption of improved soil conservation practices. It is essentially an indication that farmers with more experience would likely adopt innovative ideas and techniques that would enhance increase in agricultural productivity.

The size of membership of the farmers' cooperatives was presented in Table 2. It showed that (46.6%) had large enrolment size of 101 to 200 while 36.7 and 11.7% of them had a membership size of 51 to 100 persons, 0 to 50 persons. This enrolment per cooperative organization indicated an optimal population capable of embarking on agricultural activities geared towards increasing productions. The age of the cooperative organizations revealed that about 41.7% of the farmers'

Table 3. Expected roles of farmers' cooperative organizations.

Expected roles	Ranking
Granting credit facilities to members	1
Enlightenment and educating members	2
Introducing new ideas and techniques of farming	3
Rendering guidance and counseling services	4
Create a strong beginning for marketing products	5
Ensure unity and peace within the society	6
Subsidize agricultural inputs to members	7
Organize agricultural exhibition, seminars and workshops	8
Fund raising for agricultural activities	9

Source: Author, 2011.

cooperatives that involved in agricultural development, fell within the age of 0 to 10 years. This period showed that the cooperatives were established in not quite a long period of time. In addition, 28.3 and 16.7% of them have existed for 11 to 20 years and 21 to 30 years respectively. One could remark that the proliferation of farmers' cooperative organizations was largely attributed to the recent policy of the Federal Government on the Fadama Project towards boosting food security by the year 2020.

Expected roles of farmers' cooperative organizations

The responses of the farmers' cooperatives to the expected roles towards agricultural development in the study area are presented in Table 3. The responses were ranked according to the degree of importance. Indeed, a topmost priority was given to granting of credit facilities to members and then followed by enlightening and educating members. The third ranking was for introducing new ideas and techniques towards improving agricultural productivity. The fourth in the rank concerned offering guidance and counseling services to members. The fifth rank was to create a strong bargaining power for agricultural products. This role is viewed to be instrumental to changing government policies that affect cooperative farmers.

This role is followed by ensuring peace and tranquility within the society. The seventh role was to subsidize the price of agricultural inputs for members. The farming cooperatives were noted for buying the agricultural inputs in bulk from the producers or the wholesalers and retail the items to members in subsidized rates. Of considerable importance was organization of exhibitions, workshops, seminars and film shows to showcase the cooperative products to the public. The last and possibly the least role of the farmers' cooperative in the study area was the raising of funds through launching and it was rated ninth in that order. There is no gainsaying that

farmers' cooperative organizations are indispensable to agricultural development in our rural communities. This is because they have been involved either directly or indirectly in agricultural activities. For instance, Hogeland (2002) had remarked that provision of credit facilities to farmers' cooperatives was geared to helping them increase their production and obtain higher standard of living. In addition, Walzer and Merrett (2002) rightly observed that farmers' cooperative organizations also assisted in spreading new ideas, innovations and incentives to allow the majority of the people to be positively involved in the development of agriculture.

Factors influencing performance in agricultural development

The relationship between the roles of farmers' cooperatives and the stated variables namely – income per annum, experience in farming, population size, type of agricultural activity and quality of leadership was examined in this study. The highest coefficient of multiple regressions is $r = 0.715$ and $F\text{-ratio} = 56.267$. Generally, the variables were found to be significantly correlated at different alpha values. The result revealed that the level of income, years of cooperative farming experience, type of agricultural activity and quality of leadership were found to be significant at 0.01 alpha value while enrolment size was found to be significant at 0.05 alpha value. The hypothesis is hereby rejected hence; there was significant relationship between role performance (Y) and the stated variables namely, income of the farmers (Xi), experience in farming (Xii), membership size (Xiii), type of agricultural activity (Xiv) and leadership assessment (Xv).

The coefficient of income was significantly correlated to the farmers' cooperative role performance. The positive relationship implies that the richer the farmers' cooperatives, the higher the level of their involvement in agricultural development activities. Increment in income is capable of increasing agricultural production (all things being equal). The period of cooperative experience had a coefficient $r = 2.681$, which was equally correlated to the role performance by farmers' cooperatives. This implies that the more the farming experiences, the more the roles cooperatives are likely to perform. This is equally in agreement with the relationship between age of establishment of the cooperatives and role performance. Enrolment in terms of population size with coefficient $r = 2.423$ was correlated to the role performance of farmers' cooperatives. This implies that the cooperative societies with a large number of membership invariably would have more roles to perform and thus having multiplier effects towards agricultural development. The coefficient of the types of agricultural activity was $r = 3.071$. This was significantly correlated to the role performance of farmers' cooperatives.

This result corroborated with the findings (Bhuyan and Leistriz, 2000) that there was a positive relationship between income, experience in agriculture, agricultural activities and membership size with the adoption of soil conservation techniques. Moreover, quality of leadership was found to be significant at 0.01 alpha value with a coefficient $r = 2.874$ that was correlated with the role performance. This means that quality of leadership determines the level of involvement in agricultural development. Walzer and Merrett (2002) had remarked that leadership involves close monitoring, organizing, coordinating members in order to attain organizational goals. Leadership is essentially human skill that binds a group together geared towards organizational success.

RECOMMENDATIONS

It is obvious from the study that farmers' cooperative societies have limited financial resources to execute their onerous agricultural activities. This could generate agricultural policy that favours the growth of agricultural cooperatives by putting in place financial institutions that could grant credit facilities to the farmers at low interest rates. Ortmann and King (2007) remarked that increased inaccessibility to credit facilities had contributed immensely to the agricultural development in the country. Indeed, the establishment of micro-finance banks and agricultural banks has genuine interest in granting loans to prospective borrowers but the cooperatives are still finding it difficult to access the loans due to strings and conditions attached to it. It is recommended that interest rates on loans should be reduced to the minimum.

Leadership is paramount to the success of any organization and this explains the failure of many cooperatives since they lack proper coordination, administrative skills and managerial acumen. Government at all levels should be interested in the formulation, administration and accountability through the related agencies such as the ministry of commerce and industry by supervising these farmers' cooperatives with a view to ensuring stability and continuity of the organizations. Fulton and Gray (2006) observed that there ought to be strong alliance among cooperatives especially in the area of marketing agricultural products. The ministries and agencies can organize and sponsor seminars, workshops, and conferences for the farmers' cooperatives with a view to exposing them to new techniques and ideas on cooperative philosophy.

In this regard, all cooperatives in whatever form are seriously viewed as catalyst in the process of rural socio-economic transformation. In this regard, all hands are urged to be on deck to ensure their successful operations not only in Nigeria but in all developing countries of the world. This laudable goal can only be achieved if it is backed with legislative controls. The law should empower the cooperatives to perform certain functions, such as

strengthening the bargaining power as effective agents of socio-economic rural transformation. The cooperatives need proper education and enlightenment which can be achieved through government involvement.

Conclusion

The study has revealed that farmers' cooperative societies are variously involved in agricultural development. Moreover, certain factors are influencing their role performance which includes annual income, experience in farming, leadership training and membership size. In this regard, serious attempts ought to be made to address these issues at stake that are serving as impediments to the growth and development of the farmers' cooperatives. The appeal for the promotion of cooperatives at the grassroots and community levels should be seen as an instrumental strategy towards sustainable rural development now that government cannot be depended upon to meet individual numerous needs.

Meijerink (2007) emphasized the important role of agriculture in sustainable development by evolving appropriate strategy and policy. The attitudes of government and the generality of the people must be changed positively towards cooperative development, since it will be too difficult to achieve a meaningful balanced development without involving and stimulating the under-utilized rural resources which these cooperatives are trying to pool together to develop themselves. The government should create an enabling environment for holding and managing the means for production in the process of developing under-privileged and disadvantaged areas.

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