Analysis of the effects of Zimbabwean white farmers on small scale farming in Nigeria

Análisis de los efectos de la presencia de agricultores blancos de Zimbabwe en la agricultura a pequeña escala en Nigeria

M. O. Adewumi*, Ayodele Jimoh**, O. A. Omotesho*

ABSTRACT

Many observers believe that the on-going liberalization of the world will have dramatic negative effects on small farmers in both developed and developing countries. This study aims to capture the effects of the presence of foreign migrant farmers on small scale farming systems, which are prevalent in Nigeria. The Agricultural Development Project Zone D in which the white farmers settled in the state of Kwara, was used as a case study. Primary data were collected from white farmers as well as from local farmers regarding their situation before and after the arrival of white farmers. Descriptive statistics and analysis of the farm budget were used in evaluating the data. The majority of local farmers (98.63%) transitioned towards sole cropping since the arrival of white farmers in the area. There were significant increases in seed rate, fertilizer and other chemicals, as well as labor inputs per farmer in the area when compared to the situation that was prevalent before the white farmers settled there. Their average farm size, distances between their houses and farms and tractor use reduced significantly, while output per farm size increased considerably since the arrival of white farmers in the area. In order to provide sustainability of the positive development, there is the need to seek a policy option that will calm local farmers who once in a while exhibit signs of dissatisfaction for the way in which white farmers came to settle on their land. These could be achieved through the use of the participatory approach to agricultural development in the area. This approach could also be relevant in other regions of the world with similar situations.

RESUMEN

Muchos observadores consideran que la creciente liberalización del mundo tendrá efectos negativos en la agricultura en pequeña escala tanto en los países desarrollados como en aquéllos en vías de desarrollo. Este estudio pretende capturar los efectos de la presencia de agricultores migrantes extranjeros en los sistemas de agricultura a pequeña escala prevalecientes en Nigeria. El Proyecto de Desarrollo de la Agricultura Zona D, en el cual los agricultores blancos se establecieron en el estado de Kwara, fue utilizado como caso de estudio. La información primaria fue obtenida de agricultores blancos así como de agricultores locales considerando su situación pre y post la llegada de los agricultores blancos. Las estadísticas descriptivas y el análisis del presupuesto de cada parcela fueron utilizados para evaluar la información. La mayoría de los agricultores locales (98.63%) han transitado hacia el monocultivo desde la llegada de los agricultores blancos a la región. Se ha observado un incremento significativo en la tasa de uso de semillas, el uso de fertilizantes y otros agroquímicos, así como en el trabajo humano por agricultor en el área en comparación con la situación prevaleciente antes de la llegada de los agricultores blancos. El tamaño promedio de sus tierras, la distancia de estas con respecto de sus hogares y uso de tractores se ha reducido de forma importante, mientras que la producción por agricultor se ha incrementado. La búsqueda de políticas que tranquilicen a los agricultores locales quienes en ocasiones manifiestan su insatisfacción por la forma en que los agricultores blancos han llegado a establecerse en estas tierras resulta imperativa. Esto permitirá lograr un desarrollo positivo y sustentable. Estas políticas pueden ser desarrolladas a través de un enfoque participativo en el desarrollo de la agricultura en el área. Este enfoque también podría resultar relevante en otras regiones del mundo que presentan situaciones similares.

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*Dept. of Agric. Economics & Farm Management, University of Ilorin, Nigeria. Phone: +2348033769233. E-mail: matolade@yahoo.co.uk
**Department of Economics. University of Ilorin, Nigeria.

INTRODUCTION

The full potential of Nigerian agricultural sector is yet to be realized which was evident during the oil boom era. Nigeria became a net food importer since the seventies (FAO, 2006) and this has been a matter of great concern to all its governments. This has required numerous policy measures to reverse the trend to ensure that agriculture remains the mainstay of the economy. Many programs have been articulated and implemented in a bid to restructure the Nigerian agricultural sector. Such programs include among others, the National Accelerated Food Production Program NAFPP, (1973) the Agricultural Development Projects ADP, (1975), the Operation Feed the Nation OFN (1976), River Basin and Rural Development Authorities RB&RDA (1976), the Green Revolution, (1979), National Policy on Integrated Rural Development, National Special Program for Food Security (NPFS); South-South Cooperation (SSC); National Fadama Development Project (NFDP-II); various Presidential initiatives on Cocoa, Rice and Cassava, and the National Economic Empowerment and Development Strategy (NEEDS) in 2004 (ICARRD, 2006). Empirical records of performance of many of these projects are not impressive and the country is yet to witness the expected transformation in its agricultural sector (Olubiyo & Adewumi, 1997). It is worrisome to note that despite its resources, Nigeria is still classified among the poorest nations of the world with over 80% of its people entangled in poverty, living on less than a dollar per day (Etim & Edet, 2009). In terms of developmental purposes, it is believed that Nigeria must start by breaking new grounds, exploring new opportunities and creating innovative and dynamic strategies (Iweala, 2006; Ogunkola & Jerome, 2005).

The beginning of the Obasanjo administration in 1999, marked the emergence of extensive networks of regional investment agreements in Nigeria (Aremu, 2005). In 2001, the Federal government negotiated with some white farmers and agricultural experts from Zimbabwe. These farmers identified Nigeria as a favorable place for investment in large scale integrated farming. The Kwara State government also demonstrated its readiness to benefit from the negotiations and invited Zimbabwean farmers to the state. The invited farmers were encouraged by the State Government to acquire any part of the 17 communities in the Shonga district for cultivation. The Zimbabwean farmers are now settled in the Shonga district about 110 km north of Ilorin, the Kwara state capital. The State has a substantial cultivable area representing 75.3% of the total land area, which has been found suitable for almost all forms of food crops. However, small farm holders were cultivating only about 11% of this land, with an average farm size ranging between 1ha-2 ha (Abubakar Bukola, 2006).

Each of the thirteen foreign farmers was allocated 1 000 ha of land on a 25-year lease (Sunday Times, 2005). These foreign farmers are believed to have the technical knowhow with which Nigeria agriculture could be transformed (Vanguard Newspaper, 2004). The presence of white farmers is expected to make agriculture in the state rise above the subsistence level, and move into large scale commercial farming that would guarantee increased productivity (Kwara State Government, 2008).

As the largest commercial enterprise in Nigeria, these foreign farmers are believed to be capable of addressing the problem of processing and preserving agricultural produce that have plagued this sector for ages (OECD, 2001).

The Nigerian agricultural sector, dominated by small scale farmers by virtue of their low income have dwindling capacity to access and procure capital, labor and modern inputs. They are indeed faced with a production environment that is capable of limiting their ability to adopt improved production technologies when they are available. This study therefore seeks to identify the spillover effects of foreign farms on the local small-scale farmers.

According to economic theory, cross-border investments allow resources to be used more efficiently and productively; it can also help a country to trigger off positive technology spillovers, assists human capital formation, help create a more competitive business environment and enhance enterprise development by helping firms to tap into world markets, increasing their sales potential and realizing economies of scale. The active participation of foreign farmers in the country can also benefit citizens in tangible ways through lower prices and greater product diversity and an increase in the purchasing power of their wages. There is abundant literature about extravagant claims of the positive spillover of foreign producers (Olubamise, 2005). However, there is lack of empirical evidence on the effects of foreign farmers on the Nigerian agricultural crop sub sector. Therefore, there is the need to explore the likely effects of the presence of foreign farmers on local small farming households in view of the fact that observers argued that liberalization of investment may increase social and economic problems for rural people in agriculture around the world rather than alleviate these problems (Olubamise, 2005).

This study becomes relevant because our search of literature does not reveal empirical studies on the likely effects of foreign farmers on Nigerian small-scale farmers.

Based on the foregoing, the salient questions for which answers are sought in this study include: What are the characteristics of these foreign farms? Are Nige-

rian local farmers making more profits now than before the arrival of the white farmers? Are local farms more efficient now than before the arrival of white farmers?

The main objective of this study is to make a comparative analysis of the input and output characteristics of local farms before and after the arrival of Zimbabwean farmers in the area. The specific objectives are: to describe farming activities of the foreign farms; and explore and compare the profitability of the farms before and after the arrival of white farmers in the area.

MATERIALS AND METHODS

This study was conducted in the state of Kwara in Nigeria. The state of Kwara, with a population of 1 566 469 and a total extension of 3 682 500 ha has sixteen Local Government Areas. It is located between latitudes 7°45 N and 9°30 N and longitude 2°30 E and 6°25 E. The topography is mainly plain lands with slight elevations. Annual rainfall ranges between 1 000mm and 1 500mm. Average temperature ranges between 30°C and 35°C. It also has an estimated figure of 203 833 farm families with the majority living in rural areas. The Kwara State Agricultural Development Project (KWADP) divides the state into four zones in consonance with ecological characteristics, cultural practices and project's administrative convenience. These are: Baruteen and Kaima Local Government Areas (Zone A); Edu and Patigi Local Government Areas (Zone B); Asa, Ilorin East, Ilorin South, Ilorin West and Moro Local Government Areas (Zone C); and Ekiti, Ifelodun, Irepodun, Offa, Oyun, Isin and Oke-Ero Local Government Areas (Zone D).

The study used both primary and secondary data. Primary data were obtained from all the 13 foreign farmers, 150 randomly selected farmers that are in Shonga district of Edu LGA and within the 3 km radius of white farmers settlement and farms. The main instruments used for data collection are two types of structured questionnaires. The data collected were cross-sectional in nature covering before (pre-2005) and after the arrival of white farmers.

The analytical tools employed for the study are descriptive statistics such as means, percentages and frequency distributions. The farm budget analysis was used in determining the costs and returns of the local farms before and after the arrival of white farmers in the area. The net farm income per hectare of both categories of farmers is given as:

GM = TR – TVC ..... (Etim & Edet, 2009)

Where:

GM= gross margin per hectare

TR = total value of output per hectare in naira. This is the value of all the farm outputs of the farmers.

TVC = total variable cost of production per hectare in naira. It includes the costs of seeds,/seedlings, fertilizer, agrochemicals, hired labor and tractor hiring.

When the imputed cost of interest on capital, depreciation of farm tools, imputed cost of land and imputed cost of family or group labor are deducted from the gross margin, the returns to farmers' labor and management are obtained.

The paired sample statistics was used to assess if there was any significant differences between input and output variables as well as the costs and returns of the farms before and after the arrival of white farmers in the area.

RESULTS AND DISCUSSION

Our result revealed that two of the foreign farmers have relocated to other parts of the country, 13 foreign farmers were therefore considered for this study. All the foreign farmers are literate with basic education and are still within the productive age. All the farmers are married and have children. They all claimed farming as their way of life since birth and as their major source of income.

Out of the total 13 000 ha allocated to the white farmers, only 2 276 ha representing 15% and 7 800 ha representing 60% of the allocated farm land was cultivated in the 2007 and 2008 production seasons respectively. Average farm size of these commercial farmers ranged in size between 93 ha and 355 ha in 2007 and 400 ha to 800 ha in 2008 with average sizes of 175.07 ha and 600 ha respectively. These farm sizes are enormous when compared with an average farm size of 2.23 ha prevalent in the majority of subsistence farms in Nigeria.

Farmers planted rice, soybean, maize, groundnut and cassava as sole crop during 2007. In 2008 banana planting was introduced by three of the farmers with a farm size of 6.3 ha. All white farmers practiced sole cropping. Buffer zones exist between some of these expatriate farmers where the local farmers reside and practice their farming activities.

These foreign farmers sourced their capital from the Kwara State Government, the National Agricultural Cooperative and Rural Development Bank and consortium of commercial Banks. The State Government has a 24% shareholding in the parent company. The commercial bank gave loans to these farmers at 14% rate of interest. Most farmers rated the commercial bank source as better than the Government source. All the

farms are mechanized with each farmer having an average of four tractors, one plough, two harrows, two planters, two combined harvesters, three trailers, one boom sprayer and one fertilizer broadcaster. One of the farmers had two giant 800 t silos. There were poultry sheds and 10 dairy sheds under construction in 2007.

In 2007 foreign farmers hired implements from one another; this opportunity was extended to local farmers in 2008 with four of the foreign famers giving out their tractors on the agreement that the tractors will be fueled and used by local farmers. Local farmers were also allowed the use of planters on the same condition. The foreign farmers sourced their inputs from the International Institute of Tropical Agriculture (IITA), open markets and from the past harvest. The yield of genetically modified seeds that were planted was very poor during the experimental year; hence the farmers now plant locally available varieties. The farmers employed both local and migrant laborers. White farmers sold cassava stems to local farmers at subsidized prices during the 2008 production season.

A representative local farmer from the study area is a male of about 35 years of age. Majority of the farmers in the area are young and energetic male farmers with their ages ranging between 15 and 70 years. About 68.90 % of the respondents claimed to have one form of formal education or another. The result further revealed that the majority of the farmers could speak, write and read in Nupe language. Less than half of the farmers could speak, write or read English Language, which is the official language in Nigeria.

Prior to the arrival of white farmers in the area all the selected local farmers in the district engaged in farming as their primary occupation. By 2008, only 0.70% engaged in farming as their primary source of income. Others hedged against risk in rain dependent farming business by engaging in other secondary sources of income like laborers on white farmers' farms, "okada" riders, bricklaying, and civil services amongst others.

The input characteristics of the farms of these local farmers are summarized in table 1. Average farm size per farmer decreased significantly ($p < 0.05$) from 4.02 ha to 2.14 ha after the arrival of white farmers. The farms are closer (1.40 km) to the farmers' houses and to tractor sources (1.15 km) since the arrival of white farmers. There was an increase in seed rate, application of fertilizer and other chemicals (herbicides and pesticides), labor input and output per local farmer ($p < 0.05$) in the last production season when compared to the situation before white farmers settled in the area. All farmers practiced mixed cropping before the arrival of white farmers. Sole cropping is now practiced by 98.63% of the farmers. Major crops grown in the area are rice, sorghum, melon, yam, groundnut, maize, and cowpea.

Table 1.
Characteristics of typical local farms.

	Before	2008 (After)	Absolute t-value	Sign. Levels
Farm size in ha	4.02	2.14	22.31***	0.00
Seed quantity kg	10.65	57.67	29.36***	0.00
Fertilizer (kg)	100.85	726.53	37.39***	0.00
Other chemicals L	0.00	19.51	41.76***	0.00
Labor man-days	795.64	1071.59	7.27***	0.00
Average distance of Farmer's house to the farm	2.99	1.40	15.39***	0.00
Distance of farms to tractor source km	3.15	1.15	18.01***	0.00
Output in maize (kg)	1 996.7	5 014.69	3 4.77***	0.00
Sample size 1 = 144, Sample size 2 = 144				

*** = significant level < 5%
Source: Field Survey, 2009.

Average seed input in these local farms increased significantly ($p < 0.05$) from 10.65 kg to 57.67 kg per farmer (442% increase). Fertilizer input usage increased significantly by 620%. Local farmers used an average of 19.51 kg of chemical on an average farm size of 2.41 ha after the arrival of white farmers. Average labor supply to farms in man-days increased significantly by 35%. These local farmers probably focused on farms nearer to home as they readjusted their schedule to supply labor to white farmers' farms. Labor seems to be crucial in weeding, land preparation, planting and harvesting periods. White farmers normally assigned daily tasks to their employed labor, and once the task is accomplished, the labor is paid for the day's job. This method allows a laborer to redistribute his time to combine two or more employments per day. Output in maize grain increased by 151% since the arrival of white farmers (table 1).

Table 2 shows the summary of the modes of transportation employed by local farmers in carrying out farming activities. Farmers had better means of transportation to their farms after white farmers settled in the area (table 2).

Table 2.
Respondents by mode of transportation to the farm.

Mode of transport to farm	Before	After
Trekking	33(22.92)	0(0)
Bicycle	110(76.39)	3(0.08)
Motorcycle	1 (0.06)	141(97.92)
	144	144

Source: Field Survey, 2009.

Table 3 shows the summary of the costs and returns to farmers' labor and management before and after the arrival of white farmers. Before the arrival of white farmers, the cost of group labor was about 81.83% of the total cost of the farm's input per hectare for the farmers within the white farmers' area. Before the arrival of white farmers in the area, farmers organized themselves in groups and depended on members' farms as the need for labor arose. A typical farmer in the area did therefore not feel the cost of labor. The gross margin per ha is substantial. However the return to farmers' labor and management was negative.

Table 3.
Costs and returns to crop farming in the area.

	Before	After
Gross revenue	64 200.00	191 722.20
Less variable costs	9 121.35	42 849.38
Costs of seed/seedlings	480.00	12 331.77
Cost of fertilizer	1 209.38	13 804.08
Cost of other agrochemicals	Nil	8 380.95
Cost of hired labor	Nil	4 562.92
Less cost of tractor hiring	7 431.00	3 769.66
Equals GM	55 078.65	148 872.82
Imputed interest on Capital	912.14	4 284.90
Less depreciation of farm tools	1 163.72	2 245.97
Less imputed cost of land	500.00	1 000.00
Less imputed cost of group or family labor	52 681.50	31 418.84
Equals returns Farmers' labor & Management	(178.13)	118 574.00
Average rate of Returns on investment	(0.002)	1.40
Average farm size (ha)	4.01	2.14

Source: Field Survey, 2009.

Our results revealed that with the arrival of white farmers in the area, there was a reduction on the average farm size, but gross margin per hectare almost tripled, going from N 55, 078.65 to N 148, 872.82. The rate of return on investment also increased significantly from negative to 1.40 ($t = 31.14$, $p < 0.005$). With every naira invested, the farmer earns N 1.40 as returns to labor and management. The returns to labor and management could be said to have increased with more than 140% in the area since the arrival of white farmers. However, more than half of the sampled farmers confirmed that the presence of white farmers has led to a reduction in farmland. There are also sporadic reactions of local farmers, which indicate, that local farmers perceive negative impacts.

CONCLUSION

With the arrival of white farmers in the area, the cultivated area by the small local farmers decreased in extension, but output increased per farmer. This is a clear manifestation of positive impact of foreign farmers' farms in the area. For a sustained peaceful co-existence of both foreign and local farmers, policy option that will pacify the local farmers, who sometimes exhibit signs of dissatisfaction to the presence of white farmers on their land need be established. The development could be achieved by introducing the participatory approach to agricultural development in the area. This will go a long way in bringing the much needed transformation in the sector for the realization of the Nigeria Vision 20: 2020. This approach could also be relevant to other regions of the world with similar situation.

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