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Increasing agricultural household incomes through rural-urban linkages in Nigeria

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A major policy omission in Nigeria is the absence of policies deliberately targeted at fostering rural-urban linkage with a view to improving the income earning potentials of the rural areas through increased output to satisfy the urban market. This study thus examined the impact of rural-urban linkage on the incomes of rural farming households in Ile-Ife area of Osun State, Nigeria. Descriptive statistics and regression analytical techniques were used to analyse data collected from a sample of 200 farmers. The study revealed that 95% of the respondents lived within 20 km of the city while 85% of the respondents were linked to the city mainly by untarred roads. The regression analyses revealed that although farm sizes increased away from the city, there is negative relationship between distance and net income. A kilometer increase in distance away from the city will depress net income by 3%. The study also revealed that while the older farmers tended to locate farther away from the city, age of the farmer also tended to be negatively correlated with income. The study again revealed that a unit increase in farm expenditure will lead to 75% increase in net farm income. Although household size normally affected farm sizes positively, in the study area, it had a negative correlation. The only viable alternative to increasing farm sizes and hence net income is through investment in new technologies and inputs. These are opportunities which the city offers the rural areas when properly linked.

Key words: rural-urban linkage, productivity, interaction, diffuse, settlements, integrated.

INTRODUCTION

Rural-Urban linkages represent a powerful strategy for enhancing incomes, increasing productivity, alleviating poverty and promoting employment in the rural areas. Cities provide certain goods and services for rural areas because of the dynamic economic landscape that emphasise secondary production and services. In turn, rural areas are advantaged in providing certain goods and services, mainly agricultural products and labour for urban centres (Belsky, 1990; Evans, 1990; Unwin, 1989). Such symbiotic relationship though beneficial to both sides, is expected to specially provide the necessary impetus for improving the economic prospects of the rural areas. It is widely recognized in the literature (Abumere

and Oluwasola, 2001) that urban areas diffuse economic development to rural areas through food imports, absorption of surplus labour, export of manufactures and provision of services such as health and education.

The interaction is not always beneficial though as the urban areas could become predatory. Smit (1998) reckons for example that the dominant pattern in today's world is that the rural areas move natural resources in many forms (food, raw materials, etc,) to urban areas while the urban areas move environmental pollution (for instance, solid wastes) to rural areas. In addition, studies have shown that rural financial resources are transferred to the urban industrial and commercial sectors from the rural areas by urban based banks through their rural branches as evident by limited access to credit, credit rationing, and the failure of rural banks to lend up to 30% of the deposits mobilized in the rural areas (CBN, 1986; Olomola, 1999). Nonetheless, the interaction between the

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two tends to enhance incomes and social status of rural farm households. Clearly, rural-urban linkages provide an important platform for the examination of the effectiveness of policies on food security in the urban areas on the one hand and on income, employment and poverty reduction in the rural areas on the other.

In Nigeria, several policies and programmes have been put in place to improve the productivity and hence income earning potentials of farmers in the rural areas. Such policies include the Agricultural Development Programmes (ADPs); the River Basin Development Authorities (RBDAs); the Directorate of Food, Roads and Rural Infrastructure (DFRRI); the National Agricultural Land Development Authority (NALDA); the National Fadama Development Programme (NFDP); the National Agricultural Technology Support Project (NATSP); the National Japanese- Assisted Rice Production Programme; the IFAD-Assisted Cassava Multiplication Programme; and the National Accelerated Industrial Crop Production Programme (NAICDP). Other programmes aimed at boosting agricultural outputs include Crop Storage and Post Harvest Technology Programme; the National Seed Service Programme; the Plant Quarantine Service; the Strategic Grain Reserve Programme; the National Livestock Development Programme (NLDP); National Agricultural Research Project (NARP); the Rinderpest Control Programme; the Aquaculture Development Pro-ject; and, the technical and resource support of UN agencies, especially UNDP and FAO.

During the Third National Development Plan (1975 to 1980), conscious efforts were made to shift emphasis in agricultural production from tree to food crops with the launching of the National Accelerated Food Production Programme (NAFPP) and Operation Feed the Nation (OFN). These campaigns were of course necessitated by sudden food shortages and reduced foreign exchange earnings to sustain continued food importation.

Unfortunately, the policies treated rural development and agricultural production independent of other sectors. In fact, there has been thus far no conscious attempt to foster linkage between the rural and urban areas through the instrumentality of policy. While increased export earnings from agricultural production was emphasized as a major policy goal, little was done to effectively link the rural areas to service their immediate urban centres and thus earn substantial income from the growing urban population in Nigerian cities. Rather, emphasis continued to be put on exporting cash crops to earn foreign exchange while substantial part of the food needs of the country continued to be imported. This has led to increase in the share of food imports in national expenditure in the last three decades. As opined by Rabinovitch (1990), for employment generation, increased income earnings and poverty reduction in the rural areas, development policies that attempt to dichotomize urban and rural areas have not achieved their desired effects. This has kindled interests in policies that take on hand the

linkage of the two in development policy formulation (Kim, 1998; Baker, 1995; Gaile, 1992; Evans, 1990). This paper therefore examines the existing relationship between rural and urban centre of Ile-Ife, Osun State, an ancient town in the South Western part of Nigeria to determine the impact of the latter on the well-being of the former.

OBJECTIVES

The main objective of the study is to examine the impact of rural-urban linkages on the well- being of rural farming households. The specific objectives are to

i. identify the resource potentials of the rural areas that can foster a linkage with the urban centre in the study area;
ii. determine the forms and magnitudes of the rural-urban linkages presently existing within the study area;
iii. examine factors hindering effective rural-urban linkage in Nigeria
iv identify the institutional, economic and physical conditions that should be in place to enhance the linkages

The conceptual framework

The quest for the transformation of rural areas has been a subject that engaged contemporary scholars. In the developing countries where a larger proportion of the people live in the rural areas and make a living from agriculture, the challenge further include reducing poverty levels and enhancing household income earning potentials. This has led to the development of several development theories and models as to how the rural economy, which is largely agrarian, could be economically transformed to meet the needs of a modern commercialized economy. These theories can be grouped into two main types: the trickle down strategies and the strategies of rural service centres (Hinderink and Titus, 1998). The trickle down strategies include the Growth Pole, Centre Periphery (supply side theory) and the Central Place Theories. Abumere and Oluwasola (2001) opined that Growth Poles, Centre-Periphery and Central Place theories attempt to provide explanation for what happens to economic performance in urban and rural areas when both interact in a meaningful way.

The growth pole strategy is derived from Perroux (1995) submission that as a set of industries located in an urban area expands, it further induces development of economic activities throughout its zone of influence. This has been developed to mean an urban industrial expansion in few selected growth centres with the hope of the spread effects for modernizing rural areas. In other words, a growth pole is envisaged to be one that will

induce a trickle down of development in terms of employment generation, increase income, and productivity to its hinterland by stimulating demand first on the side of the urban areas for the output of the rural areas and second, by stimulating the demand for urban goods and services in the rural areas. While this has worked in some parts and in fact leading to the integration of the adjoining rural areas into the fast growing cities as Lagos, Ibadan and Kano, in many areas, the envisaged development has not occurred. The wealth of the urban centres have largely failed to trickle down to the adjoining hinterlands.

The Centre-periphery theory was first muted by Prebisch (1949) but developed by Friedman (1966) who submitted that economic growth tends to occur in the matrix of urban regions. He opined that the spatial incidence of growth is a function of the distance from a central city. This model has its roots in the Ricardian theory of rent and Von Thuenen's demonstration that the distance from an urban market influences both the intensity of cultivation and the mix of crops grown. Building on Von Thuenen's argument, Shultz (Shultz, 1953) also postulated that economic organizations work best in agricultural areas located favourably in relation to urban industrial complexes. When however the city is parasitic as most cities are in Nigeria, the cities continue to grow without much impact on the adjoining rural areas except possibly to totally absorb the rural area and obliterate its existence.

Finally, the Central Place theory according to Galbraith (1982) means when investment in economic activities in the urban areas take place, the surrounding rural areas will benefit in the forms of jobs and incomes.
However, the trickle down argument has not worked in the developing nations because of a number of factors. First, it is well known that in many developing countries, weak links exist between the urban and surrounding areas (Abumere, 1978; Logan, 1972). In fact, there is a strong economic linkage of growth centres with extra regional and overseas clients and suppliers especially former colonial countries, rather than the immediate surrounding regions. Second, going by the experience of common markets, in any competition or cooperation between strong and weak economies, the strong invariably gains the most (Abumere and Oluwasola, 2001). Third, the trickle down theory in here rests on the assumption of perfect competition which does not hold with respect to space (Richardson, 1969; Krugman, 1995; Dymski, 1996). Indeed, it rests on neo-classical economic theory which predicts that factor mobility will equalize returns to various classes of homogenous inputs which is not often so over space. Finally, the trickle-down theory is based in part on the general competitive equilibrium (GCE) theory which is static. Whereas, the relationship between the rural and urban areas is quite dynamic.
Hence, all programmes and efforts put in place to achieve rural development have not yielded the desired results.

The rural service centre strategy focuses on small centres for their own development and that of their hinter

land. These centres are considered as engines of growth. Their development as market and service centres helps to increase the productive capacity of the rural producers and promotes the commercialization and specialization of agriculture in the framework of national economic growth (Hinderink and Titus, 1988). Other relationships of the service centre and the hinterland involve consumer goods and social services. The rural population is consi-dered as a market for manufactured goods. The relative prices of the products, the institutional structure of supply and collection of the goods, however, determine the nature of this linkage (Funnel, 1976). The social service relations comprise services such as health, education, extension services, administration, legal and community services between the centre and the hinterland (Funnel, 1976). What this has succeeded in doing is transforming hitherto small growth centre settlements into larger urban enclaves that continue to pillage on the resources of the adjoining rural areas.

Whatever the strategy adopted in the development process, the study of rural-urban linkages represents an attempt to foster an integrated linkage between the rural agricultural and urban industrial/commercial and service sectors. The goal is to provide synergy through a mutual interaction that utilizes the resources in both sectors. It is envisaged that the process of the linkage will lead to a mutually beneficial relationship between the two sectors thereby enhancing the living standard of the operators in these sectors, especially farmers who live and operate in the rural areas. The major impact envisaged in the linkage is the catalytic impact the urban environment is expected to have on the rural areas.

METHODOLOGY

The study was carried out in Ile-Ife division of Osun State in the South-West Geopolitical Zone of Nigeria. The division is made up of four local government areas viz: Ife Central, Ife East, Ife North and Ife South. The major city in the region is the city of Ile-Ife. The study area was purposively selected because it offers a suitable rural-urban setting for an in-depth study of the inter- linkages between the city and its surrounding hinterland. The city of Ile-Ife is medium sized and is predominantly surrounded by agricultural settlements. The existence of a University in the city for over four decades has led to its development as a highly commercialized city that depends on the surrounding hinterland for most of its food imports.

Multi-stage sampling technique was used to obtain data for the study. First, lists of all villages surrounding the city of Ile-Ife were obtained from the four local government areas. Out of these, 20 villages were randomly selected for the survey. In each of the villages, 10 respondents were again randomly selected. In all, 200 respondents were sampled. Descriptive statistics including frequency counts and percentages were used to analyze the socio-economic characteristics of respondents. In addition, OLS regres-sion techniques were used to analyze the causal relationships between various factors associated with rural-urban linkages.

The first model to establish the net income of the farmers in the rural areas was specified as:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, e_i) \dots\dots\dots\dots\dots\dots (1)$$

Where: Y = Net farm income (₦). X_1 = Distance of village from the

city (km), X_2 = Age of respondent (years). X_3 = Household size, X_4 = Level of education of respondents as measured by number of years spent in formal schools. X_5 = Farm size of respondents (ha). X_6 = Farm expenditure (₦). ei = Error term.

A priori expectations was that X_1, and X_2, would be negatively correlated with net farm income realized by farmers while X_4, X_5, X_6 are expected to be positively correlated with net farm income. X_3 may have either negative or positive relationship depending on whether household members are considered as production or consumption units. For this study, household members were considered as production units.

The second model on the determinants of respondents' farm size was also specified as:

$$Ys = f(X_1, X_2, X_3, X_4, X_6, X_7, ei) \dots\dots\dots\dots\dots\dots (2)$$

Where: Ys = Farm size (ha), X_1 = Distance of village from the city (km), X_2 = Age of respondent (years), X_3 = Household size, X_4 = Level of education of respondents as measured by number of years spent in formal schools. X_6 = Farm expenditure (₦), X_7 = Net farm income (₦), ei = Error term.

In terms of a priori expectations, all the variables X_1, X_2, X_3, X_4, X_6, and X_7 are expected to be positively correlated with farm size.

The double and semi-logarithm forms of the regression models were fitted to the models specified in (1) and (2) above. However, only the double logarithm model provided the best fit and in line with a priori expectations.

RESULTS AND DISCUSSIONS Socio-economic

characteristics of the respondents

Table 1 shows the socio-economic characteristics of respondents. A total of 166 respondents (83% of total) were married while 9.5% were single. Five percent were widowed while 2.5% were separated from their spouses. Mean household size in the study area was seven (7) although household size ranged from 1 to 14. The household sizes are typical of most rural farming communities in Nigeria where household labour is the most dependable source of farm labour (Oluwasola and Alimi, 2007). The age of farmers ranged from 26 to 66 years with a mean of 48.1 years. As shown in the table, 85% of the respondents were aged between 26 and 55 years while the remaining were older. In effect, most of the respondents were in their productive years which should have positive impact on farm size and earnings. The youthful age also implies that most of them would like to live near the city where they can have access to basic social services.

Table 1 also shows the level of literacy among the enumerated farmers. About 55% of the respondents spent at least 12 years in formal schools with 33% completing secondary school education while 12% completed tertiary schooling. The high level of literacy predisposes these respondents to seek access to social amenity which is usually not available in the rural areas. The city will therefore provide an attraction that will facilitate interaction between the rural and urban areas. This is particularly plausible as it was found that of the twenty settlements sampled, only five had secondary schools

although all of them had primary schools. Fifty percent of the villages had maternity/health centres though there was no resident doctor or nurse in the villages. The inhabitants depended mainly on streams as sources of domestic water and only six of the villages were connected to the national electricity grid for electricity supply. Since the villages lacked most basic social amenities that are available in the city, active interaction between the city of Ile-Ife and the adjoining rural areas is expected to be high.

The distances of the 20 villages from the city ranged from 2km to 30 km with a mean distance of 11.7 km. As shown in Table 1, 25% of the respondents lived in villages that were less than 5 km from the city boundary while 30% lived within 5 to 10 km from the city boundary. As one move further away, the cost of transporting goods to and from the farm to the city also increases. In addition, since the city provides the main market for the farm products, farming closer to the city implied taking advantage of the growing market and at a reduced cost.

The three factors of relatively young age of the respondents, nearness to the city as well as the high level of literacy among the respondents is expected to enhance their capacity to obtain ready information on new innovations and/or improved production techniques. It should also help them access credit from formal financial institutions as well as benefit maximally from government policies aimed at improving the lot of farmers.

The nature of the roads linking the villages and the city of Ile-Ife is also indicated in Table 1. About 60% of the respondents' villages were linked with motorable earth roads, 25% of the villages had non-motorable roads while only 15% of the villages were linked with asphalted roads. This has serious implications for transportation of farm products and human beings. Field evidence revealed that outside market days, transportation to and from the villages was always difficult.

The frequency of movement of respondents from their villages to the city showed that about 50% of them commuted daily between the villages and the city while 19.5% commuted at least two times in a week. Another 17.5% commuted weekly while 8% did so ones in a month. The interaction between the city and the surrounding villages was mainly for socials and to exchange goods and services. Shipments from the villages were mainly agricultural products like yams (*Discorea sp.*), cassava (*Manihot sp.*), processed cassava products (gari, cassava flour), plantain (*Musa sp.*), citrus (*Citrus sp.*), breadfruit (*Artocarpus cilitilis*), maize (*Zea mays*), tomatoes (*Lycopersicum esculentum*), pepper (*Capsicum sp.*), vegetables, kolanut (*Cola sp.*) and cocoa (*Theobroma cacao*). In turn, consumables like beverages, clothing, kitchen utensils, toiletries, books,

medicine and food items like imported rice, beans and bread were brought from the city to the villages. The villages also benefited from health, educational and recreational facilities in the city.

Table 1. Socio-economic characteristics of respondents

S/N	Socio-economic characteristics	Frequency	Percentage	Cumulative percentage
1.	**Marital Status of Respondents**:			
	Married	166	83.0	
	Single	19	9.5	
	Widowed	10	5.0	
	Separated	5	2.5	
2.	**Respondents Household Size**			
	1 – 3 members	28	14.0	-
	4 – 6 members	48	24.0	38.0
	7 - 9 members	72	36.0	74.0
	10 – 12 members	44	22.0	96.0
	13 – 15 members	8	4.0	100.0
3.	**Age Distribution of Respondents**			
	26 - 35 years	14	7.0	-
	36 – 45 years	70	35.0	42.0
	46 – 55 years	86	43.0	85.0
	56 – 65 years	22	11.0	96.0
	66 – 75 years	8	4.0	100.0
4.	**Level of Education of Respondents**			
	No formal education	20	10.0	-
	Did not complete primary school	30	15.0	25.0
	Completed primary school	35	17.5	42.5
	Did not complete secondary school	25	12.5	55.0
	Completed secondary school	66	33.0	88.0
	Completed tertiary education	24	12.0	100.0
5.	**Distance of Settlements from the city of Ile-Ife:**			
	< 5 km	50	25.0	-
	5.1 - 10 km	60	30.0	55.0
	10.1 - 15 km	40	20.0	75.0
	15.1 - 20 km	20	10.0	85.0
	20.1 - 25 km	20	10.0	95.0
	25.1 – 30 km	10	5.0	100.0
6.	**Nature of Roads Linking Communities to The city of Ile-Ife**			
	Tarred (asphalted) roads	30	15.0	-
	Untarred but graded roads	120	60.0	75.0
	Untarred and ungraded roads	50	25.0	100.0
7.	Number of movements between the suburbs and the city of Ile-Ife			
	Daily	118	59.0	-
	Twice a week	39	19.5	78.5
	Weekly	35	17.5	96.0
	Monthly	8	4.0	100.0

Source: Field survey, 2006.

Resource endowment of the rural areas

The study area is endowed with tropical rainforest including a government forest reserve (Shasha Forest Reserve). The area is therefore blessed with enormous resources of timber. These resources feed the sawmill

industries located in the city. In addition, cocoa (*Theobroma cacao*), a major cash crop is cultivated widely in this rainforest belt with the produce buyers located in the city. Other forest products include breadfruit (*Artocarpus cilitilis*), and wild oil palm trees (*Elaeis guinensis*).

In addition to tree crops and forest products, the rural areas also serve as the food basket of the division, producing substantial portion of the food items consumed in the city of Ile-Ife. These includes cassava (*Manihot esculentum*), yams (*Discorea esculenta*), maize (*Zea mays*), plantain (*Musa sapientum*), spices and vegetables. The food crops are processed into several food products in line with the local diet and food needs.

Regression analysis of factors affecting the income of farmers in Ile-Ife division

The regression model that provided the best fit was a double-logarithm and is specified as:

$$5.588 - 0.03261\ln X_1 - 0.226\ln X_2 + 0.02106\ln X_3$$
$$(0.059) \qquad (0.300) \qquad (0.076)$$

$$- 0.08123\ln X_4 - 0.006447\ln X_5 + 0.689^*\ln X_6$$
$$(0.062) \qquad (0.081) \qquad (0.098) \qquad\qquad (3)$$

$R^2 = 0.336$ Adjusted $R^2 = 0.313$ F = 14.490

Figures in parenthesis are the standard errors. * significant at 5% level.

The result of the OLS regression analysis is presented in equation (3). The results show that of all the independent variables, only household size (X_3) and farm expenditure (X_6) were positively related to net farm income (Y). The other variables, distance from the city (X_1), age of respondents (X_2), number of years spent in school (X_4), and farm size (X_5) were negatively related to net farm income.

Clearly, there is a negative relationship with distance away from the city and net farm income. As farmlands are located farther away from the city centre, the cost of transporting farm products to markets increases thereby reducing the net income to farmers. The estimated coefficient of the variable indicated that a 1% increase in farm distance from the city will reduce net income from farm by 3%. Although the relationship was not statistically significant, it was in conformity with *a priori* expectations. Age of respondents was also negatively related to farm income. As farmers' age increases, their ability to perform farm tasks reduces, making them to depend more on hired labour and this reduces net farm income. The coefficient of the age variable shows that an increase of 1% in age will reduce farm income by 2%.

Household size was positively related to net farm income. This implies that the larger the family size, the more labour is contributed to the farm business and hence, the larger the farm size and farm income. The coefficient of the household size variable indicates that a 1% increase in household size will increase farm income by 2%. This is also in conformity with *a priori* expectations although the relationship was not significant. The level of education of respondents measured in terms of the number of years spent in formal schools was negatively related with net farm income but was not statistically significant. This is not in conformity with *a priori* expectations because it was expected that educated farmers should be able to take advantage of new farm innovations as well as access credit from financial institutions to enhance their performance. However, in the study area, it seems that the educated farmers were part-time farmers who only engaged in farming to augment their income from paid employment. As shown in equation (3), a 1% increase in the number of years spent in formal schools will depress farm income by 8%. Farm size of respondents also showed a negative but statistically insignificant relationship with net farm income. This is not in conformity with *a priori* expectations. However, this could be because most large cash crops plantations were old and were owned by older farmers with diminishing output. Only farm expenditure was positively related to net farm income and was statistically significant. This implies that as farmers invested more on their farms in terms of improved inputs, output tended to increase and hence net farm income. The coefficient of the variable indicated that a 1% increase in farm expenditure would increase net farm income by about 69%.

The adjusted coefficient of determination of 0.313 indicates that about 31% of the variability in the net farm income realized from farm activities in the study area is associated with the explanatory variables specified in the model.

Determination of farm sizes cultivated by respondents

$$-8.441 + 0.01213\ln X_1 + 0.538\ln X_2 - 0.133\ln X_3 - 0.06519\ln X_4$$
$$(0.056) \qquad (0.279) \qquad (0.070) \qquad (0.059)$$

$$+ 0.751^*\ln X_6 - 0.005695 X_7$$
$$(0.087) \qquad (0.072)$$
$$\qquad\qquad\qquad\qquad\qquad (4)$$

$R^2 = 0.447$ Adjusted $R^2 = 0.428$ F = 23.216

(figures in parenthesis are the standard errors) * significant at 5% level

Equation (4) shows that three variables, distance from the city (X_1), age of respondents (X_2), and farm expenditure (X_6) were positively related to farm size while household size (X_3), number of years spent in formal schools (X_4) and farm income (X_7) were negatively related. Distance was positivelyrelated because since

pressure on land decreases away from the city, farmers will have access to larger farm lands. The demand for land in the city is high and non-farm activities encroach on farmlands as the city expands. This leads to reduction in farm sizes. This is in conformity with *a priori* expectations. Age of respondents is also positively related to farm size. As farmers' ages increase, they also would have spent longer years in farming business. These years enable them to expand their holdings of permanent tree crops that require less maintenance after the initial capital outlay. As indicated by the coefficient of the variable, 1% increase in the ages of respondents will lead to 54% increase in farm sizes.

There is a negative relationship however between household size and farm size which is not in line with *a priori* expectation. This could be because most of our sampled households were consumption units rather than productive units with their children mostly in schools or learning some trades. The number of years a respondent spent in formal schools was also negatively related to farm size and is not in line with *a priori* expectation. This was probably due to the fact that the educated farmers were part time farmers and as such cultivated smaller sizes of farmlands. In addition, since the educated respondents were involved in non-agricultural urban jobs, they could only farm around the city where they live and work. However, there is high pressure on lands in and around the city and as such, they could not have access to large farmlands. The coefficient of the variable indicated that 1% increase in the number of years spent in formal schools would lead to 7% decrease in farm size. Farm expenditure had a statistically significant positive relationship with farm size. For example, 1% increase in farm expenditure would increase farm size by 75%.

The adjusted coefficient of determination of 0.428 indicates that about 43% of the variability in farm size is explained by the variables specified in the model.

Conclusion and Recommendations

The study revealed that in spite of the poor nature of roads linking the villages to the city of Ile-Ife, there were active interactions both socially and economically. While 25% of the respondents lived within 20 km radius of the city centre, as much as 95% lived within 25 km radius of the city centre. The rural areas supplied mainly agricultural products, but the city provided the non-farm domestic consumables.

The educated urban workers who operate as part-time farmers made positive impacts on the linkages between the rural and urban areas. First, these part-time farmers contributed to food security of the cities. Second, they had access to new innovations and improved farming practices which get diffused to the illiterate farmers, and third, though their farming activities was mainly at the subsistent basis, it had the effect of reducing food prices in the city.

From the findings of this study, the institutional set-up for fostering the linkage between the urban and rural areas towards achieving better living standards of the farming population becomes crucial if the current gains must be sustained. In Nigeria, the only political institution set up to guide development of the rural areas is the Local Government Councils. Their responsibilities include provision of feeder roads, health centres, primary schools, rural electrification and market stalls in the villages and towns within their areas of jurisdiction. If well implemented, the Local Government Councils have the capacity to facilitate the development of meaningful interaction between the rural areas and the urban centres.

The practice whereby about 60% of the farming households commute daily between the villages and the city of Ile-Ife is not good enough for family food security as these farming population could easily be absorbed into the urban labour force when such opportunities are available and remunerative enough to attract them. Hence as the city becomes predatory of the labour force, it would negatively affect sustainability of food supplies to the city from the hinterland. The challenge therefore is to make living conditions in the rural areas better to encourage the farming households to remain in the villages and produce the needed food items required in the city.

REFERENCES

Abumere SI (1978). The diffusion of economic development in Bendel State of Nigeria. Geografiska Annaler, 61B(2): 103-112.

Abumere SI, Oluwasola O (2001). Food Supply to Ibadan: A Study of Rural-Urban Linkages DPC Res. Rep. 29: 2.

Alimi T, Oluwasola O, Adejobi AO (2006). Optimal farm size for achieving enterprise objective and sustainability in poultry meat production in Osun State, Nigeria, World Poult. Sci. J. 62: 525-539.

Baker J (1995). Survival and accumulation strategies at the Rural-Urban interface in North-West Tanzania, Environment and Urbnization, 7(1): 117-132.

Belsky ES (1990). Approaches to locating urban functions in developing rural areas, Int. Regional Sci. Rev. 13(3): 225-240.

Central Bank of Nigeria (CBN) (1986). Nigerian agricultural credit system: Analysis of Operation and performance. Report of the National Agricultural Credit Study Team, Vol. II, Institutional analysis and survey report, CBN, Lagos.

Dymski GA (1996). On Krugman's Model of Economic Geography, Geoforum, 27(4): 439-452.

Evans HE (1990). Rural-Urban linkages and structural transformation, Infrastructure and urban development department, The World Bank, Washington D.C.

Friedman JRP (1966). Regional development policy: A case study of Venezuela, Cambridge, Mass. M.I.T Press.

Funnel DC (1976). The role of small service centres in regional and rural development with special reference to East Africa. In A. Gilbert (ed.) Development planning and spatial structure, Chichester: Willey. pp. 77-111.

Galbraith JK (1982). So the rich get even richer, The Observer, London, Sunday 17 January, p. 12.

Gaile GL (1992). Improving rural-urban linkages through small town market based development, Third World Plann. Rev. 14(2): 131- 148.

Hinderink J, Titus MJ (1998). Paradigms of regional development and the role of small centres. Dev. Change, 19: 401-423.

Kim WB (1998). Korea's policy of urban-rural integrated city, UNDP International workshop on rural-urban linkages, Curitiba, Brazil.

Krugman P (1995). Development, Geography and Economic Theory,

Cambridge, Mass. M.I.T. Press.

Logan MT (1972). The spatial system and planning strategies in developing countries. In Blumden, J. et al. (eds.) Regional analysis and development, London: Harper and Row, pp. 283-291.

Olomola Ade S (1999). Agricultural credit market imperfections and implications for lending to smallholders in Nigeria" In Olomola Ade S, Akande SO (eds) Agricultural finance issues in Nigeria, NISER, Ibadan.

Oluwasola O (1999). Implications of peasant agricultural Practices for environmental resources, food security and agriculturally sustainable development in Nigeria, In Fabiyi YL, Idowu EO (eds.) Poverty alleviation and food security in Nigeria, Nigerian Association of Agricultural Economists (NAAE).

Oluwasola O, Alimi T (2007). Determinants of Agricultural Credit Demand and Supply among Small Scale Farmers in Nigeria, Outlook on Agriculture, Forthcoming.

Perroux F (1995). Notes on the concept of Growth Poles, In Livingstone I (ed.) Economic policy for development: Selected readings, Harmondsworth, 1971, pp. 278-289.

Prebisch R (1949). The economic development of Latin America and its principal problems, New York.

Rabinovitch J (1990). Rural-urban interactions in the Third World, UNDP International workshop on rural-urban linkages, Curitiba, Brazil.

Richardson HW (1969). Elements of regional economics, Penguin Modern Economics.

Shultz TW (1953). Economic organisation of agriculture, McGraw Hill, p. 147.

Smit J (1998). The future of the food ecology, Rural-Urban linkages on Earth UNDP International workshop on Rural-Urban Linkages, Curitiba, Brazil.