Journal of Agriculture and Veterinary Sciences *Volume 4, June 2012*

www.cenresinpub.org
ISSN 2277-0062

ECONOMIC ANALYSIS OF WOMEN PARTICIPATION IN VEGETABLE PRODUCTION IN IKA SOUTH LOCAL GOVERNMENT AREA, DELTA STATE, NIGERIA

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ABSTRACT

This study analysed women participation in vegetable production in Ika South Local Government Area, Delta State. One hundred respondents were chosen using multistage sampling technique and information was collected from them with the aid of a well-structured questionnaire. Delta was analysed using descriptive statistics such as frequencies and percentages as well as profitability analysis to determine the profitability level of the enterprise. Result obtained from various profitability ratios showed that vegetable faming is a profitable venture that require little capital and has become a source of livelihood to the farmers in the business. That significant variable that influenced vegetable production includes farm size, quantity of fertilizer, insecticide, as well as labour. Profit can be maximised with the following in place; extension services, use of insecticides, availability of vegetable seeds and provision of incentives to the vegetable growers. The increase in their output level and profit will contribute significantly to food security is the country.
Key words: Profitability, analysis, insecticides, farm size.

INTRODUCTION

Women constitute more or less half of any country's population. In most countries however, women contribute more or less than men towards the value of recorded production both quantitatively in labour force participation both quantitatively in educational achievement and skilled manpower (Lawnson, 2008). She pointed out that the under-utilization of female in Agriculture has obvious implications for economic welfare and growth. Several factors, both economic and non-economic are responsible for this. Traditionally, women are regarded as homemakers, who oversee and coordinate the affairs and activities at home.

Urban Agriculture is one such strategy that enhances food security, stimulates local economic development, and facilitates social inclusion and poverty alleviation (Hovorka and Keboneilwe, 2004). Urban Agriculture is therefore a response to the market demands resulting from rapid urbanisation. It includes activities such as production of food and non-food plant, tree crops and animal husbandry within and at the fringes of cities Urban agriculture, when conceived as an intervention, positively affects a wide variety of urban issues. In addition to its divest distribution to urban food security and nutrition, urban Agriculture also touches on public health, economic development, social incision as well as urban environment management. More than 70 percent of the working population of sub-Sahara Africa depends on agriculture and related business for their livelihoods. While farming has traditionally been restricted to the increasing number of small garden and vegetable plots springing up in different part of the country. This is because it serves both as a quick some

of food thereby improving nutritional status as well as an employment opportunity for many urban dwellers. Besides, the potential for significant increase in food production can be exploited through the water resources that are available on the food plains. Leafy vegetable are an important feature of Nigeria's diet that a traditional meal without it is assumed to be incomplete. In developing countries, the consumption of vegetable is generally lower than the Food and Agricultural Organization (FAO) recommended of 75kg per year in habitat (206g per day per capital). In Urban areas, where the village pattern is being replaced by a more sophisticated way of life, many people in the community cannot produce their own vegetables and a few part-time growers devote their spare time to the production to their own supplies of vegetables as a backyard, Urban and marginal farms Nigerian women and saddled with most of the tasks in agricultural production supposedly meant for the man but the benefit derived by them are not commensurate to the man-hours they spend on the task. Despite the dominate and important role women play in agricultural production in the country, they are hardly given any attention in the area of training and/or visitation by extension agents with improved technologies. Bank hardly grants those loans and they are hardly reached with improved seeds, fertilizer and other inputs (Dannsa, Samnd and Yohanna, 2007). Citing (Saito and Spurning, 1992). These conditions have entrenched the women in a vicious cycle of poverty that places them at a advantageous vantage of income and resource empowerment. Lawanson (2008) shad more light on the role of Nigerian women in agriculture. As in other parts of Africa, Nigerian women have worked side by side with men in agriculture with some marked division of labour between them. The men performed the tedious tasks of felling trees, gathering and burning of bush and making ridges while women were involved in planting of seed particularly food crops harvesting transportation, processing and selling of farm products.

METHODOLOGY

The study was conducted in Ika South Local Government Area, Delta State, Nigeria. The local government has a population of 182,819 (mainly farmers) which include 91,846 females according to the national census of 2006. Population of the study comprises of all women cultivating vegetable in the local government. Snowball technique was used to select 100 respondents for the study. Data were collected from the respondents using well structured question nana. The data collected were described using frequencies and percentages while cost and return analysis was used to calculate the profitability level of vegetable production by considering the total cost of production and the total revenue generated. Multiple regression analysis was also used to establish the relationship between the total output and the input factors.

Profit made is the difference between total revenue and total cost

$\prod = TR - TC$

Where:

$\prod$ = Profit.

TR = Total Revenue in Naira/ha

TC = Total Cost in Naira/ha.

TC = Total fixed cost (TFC) + Total Variable Cost (TVC).

TC = TFC + TVC.
The various profitability rations computed from the above analysis includes: benefit –cost ratio, rate of return, expenses structure ratio, gross margin ratio and gross revenue ratio.
Multiple regression analysis was used to determine the relationship between vegetable output and the input used. The implicit function is:
Y = f(X1, X2, X3, X4, X5, X6, X7, X8, μ)
Where:
X1 = Farm size (ha).
X2 = Cost of planting materials (seeds).
X3 = Fertilizer (kg).
X4 = Herbicides (kg).
X5 = Insecticide (kg).
X6 = Cost of Hired Labour (man days).
X7 = Cost of family labour (man days).
X8 =Cosy of farm implements.
μ = Error term.

RESULT AND DISCUSSION

Table 1 shows the cost and returns of exotic vegetable production. The total revenue generated from the sales of the produce for a typical farmer was N829,489.00 while the total fixed and variable inputs cost amounted to N163,998.85k to give a profit of N665,490.15. This shows that exotic vegetable farmers under Fadama system actually made profit.

Table 1: Average cost and returns for exotic vegetable farmers/ha

Items	**Amount (Naira)**
Planting material	6977.04
Fertilizer	16472.00
Herbicide	7870.59
Insecticide	10192.65
Labour	102325.00
Total Variable Cost (TVC)	143837.28
Land rent	7630.00
Hoe	2066.17
Cutlass	1565.83
Basket	1593.50
Pumping machine	5339.34
Watering can	1966.74
Total Fixed Cost (TFC)	20161.57
Total Cost (TC = TVC + TFC)	163998.85
Cucumber	127726.92
Carrot	185345.28
Lettuce	135316.67
Cabbage	211160.87

Water Melon	169939.26
Total Revenue (TR)	829489.00
Net Farm Income (NFI = TR - TC)	665490.15

Table 2 shows the percentage of the total cost allocated to fixed and variable inputs. For a potential farmer that wants to invest in exotic vegetable production under the Fadama system, 56.31 percent of the total cost of production would be expended on hired labour, 4.25 percent on planting materials (seeds), 10.04 percent on fertilizer, 4.80 percent on herbicides and 6.22 percent on insecticides. For the fixed cost items, 4.65 percent would be expended on land, 1.26 percent on hoe, 0.95 percent on cutlass, 0.97 percent on baskets, 1.20 percent on watering can and the highest portion of the variable cost items of 9.35 would be expended on water pumping machines from the total cost to be incurred from the exotic vegetable production.

Table 2: Cost Structure for a typical exotic vegetable farmer under Fadama System.

Cost items	**Amount (N)**	**% of TFC**	**% of TVC**	**% of TC**
Fixed cost				
Land	3815	18.92	2.325	
Hoe	1033.085	5.00	0.63	
Cutlass	782.915	3.89	0.475	
Basket	76.75	3.95	0.485	
Pumping Machine:	2669.67	13.24	4.675	
Watering can:	983.37	4.875	0.6	
Sub total	10080.785	50.00	9.19	
Variable cost				
Planting material (seed)	3488.52	2.425	2.125	
Fertiliser	8236	5.725	5.02	
Herbicides	3935.295	2.735	2.4	
Insecticides	5096.325	3.545	3.11	
Labour	51162.5	35.565	28.155	
Sub total	71918.64	50	40.81	
Over all total:	81999.425		50	

Table 3 gives the summary of the regression analysis. The lead equation was the linear regression model in which the sign of the coefficients followed a priori expectations. The F-statistic of 29.02 was significant at 1% level of significance, meaning that all the explanatory variables put together explained the variability of Y. The lead equation is given below:

Y = 15167.6 + 199364.9*X1 + 3.627X2

(6.77) (0.81)
+ 348.947***X3 + 177.224X4
(1.74) (0.76)
+317.908***X5 + 1071.55*X6 +
(7.25) (0.22)
683.921X7 + 6625.795X8
(1.86) (1.18)

From the regression above, four explanatory variables were significant at different levels. These include farm size (X1), fertilizer (X3), insecticides (X5) and labour (X6). The farm size (X1) was significant at 1% level and had a positive relationship with the dependent variable (exotic vegetable production). This means that if the farm size increases, the output of vegetable production will also increase. Also, the quantity of fertilizer (X3), the quantity of insecticide used (X5) and the labour employed (X6) were significant at 10, 10 and 1% levels respectively. All these variables were positively related to the exotic vegetable production. Therefore, any increase in these variables will equally translate directly into an increase in the output of vegetable produced.

Table 3: Summary of Multiple Regressions Analysis:

Model	**Linear Equation**	**Semi-Log Equation**	**Double-Log Equation**
X0	4550.28	32105.34	4.46
X1	199364.9*	1.38100.4*	0.29279.2**
	(6.77)	(4.98)	(2.57)
X2	3.627	-12992.25	-0.081
	(0.81)	(-0.80)	(-1.21)
X3	348.947***	-28293.95	-0.011
	(1.74)	(-1.08)	(-0.10)
X4	177.224	11401.99	0.069
	(0.76)	(0.41)	(0.61)
X5	317.908***	18073.61	0.018
	(1.86)	(0.64)	(0.16)
X6	1071.55*	126596.5*	0.369*
	(7.25)	(4.69)	(3.32)
X7	683.921	-25389.6	0.961
	(0.22)	(-0.15)	(-1.42)
X8	6625.795	82.29***	0.325***
	(1.18)	(1.77)	(1.69)
R2	0.71	0.60	0.34
Adj.R2	0.69	0.57	0.28
F- stat	29.02*	17.78*	6.01*

* Significant at 1% level of significance
** Significant at 5% level of significance

*** Significant at 10% level of significance

CONCLUSION

Exotic vegetable production is a profitable business and it has provided a means of lively hood to the operators of the business. Profit however can be maximised if government intervenes in the area of extension services, importation of improved exotic vegetable seeds and provision of adequate incentives to the exotic vegetable growers. This would increase their output level and also contribute significantly to food security in the nation as a whole and the urban areas in particular.

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