Analysis of Ornamental Plants Production in Edo and Delta States, Nigeria

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ABSTRACT

The main objective of this study is thus, to analyse the economics of ornamental plants production in Edo and Delta States, Nigeria. The specific objectives are to: identify the types of ornamental plants produced in the study area, determine the predominant types of ornamental plants produced in the study area, and determine the profitability of this sector of the economy. The employment generating potentials of the industry for both urban and rural dwellers has not been fully exploited in Nigeria, as in other continents. This selected urban cities were; Benin City in Edo South and Warri in Delta South. The third and final stage involved random selection of sixty (60) ornamental plant producers in each of the selected city and its immediate environment, giving a total of 120 respondents for the study area.

The data that were used in this study were collected from a cross sectional survey of ornamental plants producers in both States with the use of a well-structured questionnaire. Data were collected on the socio economic characteristics of the producers, costs of production.

Data Analysis

Data collected were subjected to both descriptive and inferential statistics. The objective of identifying the types of ornamental plants produced in the study area was met by the use of simple descriptive statistics such as percentages and frequency counts. Gross Margin was used to estimate the profitability of ornamental plants production. The equation is given as used by (Olukosi and Erhabor, 2005):

\[ GM = TR - TVC \]  

where GM is the gross margin, TR the total revenue, TVC the total variable costs.

Key words: Gross Margin, ornamental plants, Stochastic Profit Function

INTRODUCTION

In Nigeria, agriculture provides a means of livelihood for over 70% of the population, raw materials for agro-allied industries and a potent source of much needed foreign exchange earnings (National Bureau of Statistics, 2006). But outside of this, the country’s agriculture development would naturally lead to achieving economic development. However, the low sectoral contribution to Nigeria’s Gross Domestic Product (GDP) is an indication that more still needs to be done to restate the sector.

Floriculture is a field in agriculture that deals with the science and practice of growing, harvesting, storing, designing and marketing of ornamental plants. It also involves the intensive production of flowers and ornamental shrubs (Muthoka and Murtishi, 2008). The establishment of ornamental nurseries has become a major feature of the urban landscape in Nigeria, springing up mainly along major roads and highways, along streets, foot paths and even in private homes. Poinecot (2004), described ornamental nurseries as a means of creating opportunities for start-ups or beginners for either full-time or part-time employment.

The ornamental plants industry has potentials for generating employment for both urban and rural dwellers directly or indirectly (Usman et al., 2002). These categories include; skilled labour jobs such as nursery managers, jobs for individuals in cultivation and marketing of plants. The importance of ornamental plants in human health cannot be over-emphasized, they are not only sources of medicinal herbs which are primary forms of therapy for treatment of diseases; they are also known to have therapeutic values (Fakayode et al., 2008). For instance walking through a botanical garden can be very rewarding and relaxing. Another benefit of ornamental plants is in the area of sports and recreation. Turfs are cultivated for sport fields and community garden plots that are strategically located along walking paths which serve as convenient places where people converse and interact. Aquass (2008), reported that in many societies some flowers are associated with specific events. For example; the rose flowers are used to mark valentine seasons while the poinsiettas flowers are associated with yuleidele periods.

With economic development, interest in ornamental plants is growing in many countries of tropical Africa, not only from plant lovers for their home gardens, but also from owners of resorts, private and public parks, shopping centres and other commercial venues. In an economy with a high percentage of working people but with unemployment problems, there is need for studies that create awareness for people in prospecting the hidden opportunities in the economy, in order to ease the pressure on the government for the provision of jobs and create awareness on how people could become self-employed. The seedling production business is a form of self-employment opportunity that generates income with relatively low investment expenditure, and thereby possesses the potential for enhancing the socio-economic aspect of the economy. With respect to Nigeria, what is of immediate research interest is the quest to know the common types of ornamental plants produced in the study area, the marketing pattern employed by the florists, the current level of profitability of the business in the study area and factors determining such profit (if any).

The main objective of this paper is thus, to analyse the economics of ornamental plants production in Edo and Delta States, Nigeria. The specific objectives are to identify the types of ornamental plants produced in the study area, determine the marketing pattern employed by the respondents, estimate the profitability of the business and to analyse the determinants of profit realizable from ornamental plants production in the study area.

Not much research effort is known to have been undertaken on the economics of ornamental plants production compared to other crops like cereals in Nigeria. Unlike many foods where some of the attributes can be quantitatively measured, such as grams of fat in meats and milligrams of cholesterol in fluid milk, these aesthetically pleasing products present an array of attributes that are closely tied to the buyer's reasons for making the purchase. Also, the production of ornamentals and its awareness as regards its profitability or otherwise has remained low (Fakayode et al. 2008). A study like this in Nigeria is important and timely since it stands to educate citizens on the characteristics and role of ornamental products in the society. Although the nursery industry is very important in the marketing and distribution of plants and in the landscape industry, it has received less attention over the years by way of monitoring and evaluation of its activities and how it is impacting the development of various sectors of the economy.
The stochastic profit function was used to identify the determinants of profit among ornamental plant producers in the study area. The profit function is an extension and formalization of the production function (Sadoskar and de Janvry 1995). It combines the concepts of technical and allocative efficiency in the profit relationships and any errors in the production decision would translate into lower profits or revenue for the farm (Rahman, 2003). Following Rahman (2003), the general specification of a stochastic profit function is given as:

\[ \begin{align*}
\ln y_i &= \alpha + \beta_1 \ln x_{1i} + \beta_2 \ln x_{2i} + \beta_3 \ln x_{3i} + \beta_4 \ln x_{4i} + \beta_5 \ln x_{5i} + \epsilon_i \\
\epsilon_i &= \nu_i + \gamma_i,
\end{align*} \]

where \( y \) is the total profit, \( x_1 \) is the cost of labor per man day, \( x_2 \) is the cost of fertilizer in Naira, \( x_3 \) is the cost of irrigation in Naira, \( x_4 \) is the cost of government statutorily owned land given out for free or for a nominal fee, and \( x_5 \) is the size of the farm. \( \epsilon_i \) is the error term and \( \nu_i \) and \( \gamma_i \) are profit inefficiency effects and any errors in the profit function specification, respectively. The stochastic profit function was used to identify the coefficients of the variables of the profit function conformed source of planting materials with a large number of them determinants of profit among ornamental plant producers in Warri Metropolis. Overall, the estimated Total Variable Cost (TVC) of production incurred per hectare by respondents was N 253,923.40. This included the cost for labour, fertilizer, polythene bags, pots, agro-chemicals, planting materials and cost for irrigation. This indicates that variable cost of production is a major cost associated with ornamental plant production. The cost for labour was N 141,736.7 representing about 55.4% of the total variable cost. This agrees with the findings of Astita et al. (2011), who reported that majority of the ornamental plants producers in Ghana faced the same problem and this could probably affect production. Most ornamental plant producers employed the use of mainly conventional input like hoes, curasses, seaccers, watering cans spades, shovels and wheelbarrows for production. However, very few of the respondents employed the use of mechanical equipment like mowers, and sprinklers. The tools and equipment inventory of the respondents only indicates that ornamental plant production is crude with very low capital outlay, since very few improved tools and equipment are used for production.

Marketing pattern for ornamental plants in the study area: Results presented in Table 2 show that ornamental plant producers either sell to consumers directly or on contract basis. This is an indication that there is a ready market for floricultural business in the study area. With respect to type of services rendered by ornamental gardens, landscaping, sales of potted plants and gardening services ranked the highest with 56.7% followed by landscaping and sales of potted plants (22.5%), sales of potted plants and gardening (9.5%), sales of potted plants (8.3%) and landscaping, sales of potted plants, gardening and export trade (3.3%).

To assess the profitability of ornamental plant production in Edo and Delta States, a study was conducted in Benin City to be comparatively more profitable than in Warri Metropolis. This perhaps could be attributed to the extent of urbanization and development in Benin City as compared to that of Warri Metropolis. Overall, the estimated Total Variable Cost (TVC) of production incurred per hectare by respondents was N 253,923.40. This included the cost for labour, fertilizer, polythene bags, pots, agro-chemicals, planting materials and cost for irrigation. This indicates that variable cost of production is a major cost associated with ornamental plant production. The cost for labour was N 141,736.7 representing about 55.4% of the total variable cost. This agrees with the findings of Fakayode et al. (2008), their report showed that labour constituted the bulk of TVC implying that ornamental plants production is crude with very low capital outlay, since very few labour saving devices and sprinkler irrigation techniques will go a long way in reducing expenditure on labour in the long run. This is true because from the finding of the study, majority of the producers employed the use of crude implements for production with only a few having mechanical equipment like pumps and sprinklers. Overall, the gross revenue recorded in the study area was N 383,756.80 / ha while the average gross margin recorded was N 127,833.40 / ha. This amounts to a meager N 47,298.36, for the mean farm size of 0.37 ha., with the implication that only the few (12) farmers with more than one hectare-sized land for cultivation, can earn above the average gross margin. Since some of the inputs like land and non-paid family labour were not purchased, the cost had to be incurred. Hence, the return to operations’ labour and management was estimated to be N 1,770,390.20 / ha. These values indicate that the gardeners of ornamental plant are currently not making enough profit that could ensure sustainability of the industry.

Profitability analysis of ornamental plants production in Edo and Delta States

To assess the profitability of ornamental plant production, attempts were made to estimate cost and revenue from ornamental plants production. Results presented in Table 3 show that ornamental plants producers in Benin City generated comparatively higher profit than the ornamental plants producers in Warri Metropolis. This is evident in the value of their respective gross margins. Also the return to operators’ labour and management costs expended on these inputs should be reduced. This agrees with the work of Orefi and Demonongo (2011); Oguniyi (2011); Hiyuwa (2006) who found cost of labour and other inputs to be negatively influence profit. However, the significant coefficients of costs for labour and fertilizer agrees with the findings of Fakayode et al. (2008) and Muhammad-Lawal et al. (2009) who reported labour and fertilizer to be significant factors that affect profit in ornamental plants production.

The estimated profit function equation is given as:

\[ \ln y = \ln (1 + IP) = \alpha + \beta_1 \ln x_1 + \beta_2 \ln x_2 + \beta_3 \ln x_3 + \beta_4 \ln x_4 + \beta_5 \ln x_5 + \epsilon_i \]

\[ \epsilon_i = \nu_i + \gamma_i \]

where \( IP \) is the normal profit of the firm defined as gross revenue less total variable cost, divided by firm output price, \( \ln y \) is the gross of the total variable cost incurred by the firm divided by output price, \( \ln (1 + IP) \) is the profit of the firm, \( \alpha \) is the intercept, \( \beta_1 \), \( \beta_2 \), \( \beta_3 \), \( \beta_4 \), and \( \beta_5 \) are the coefficients of the independent variables and \( \nu_i \) and \( \gamma_i \) are profit inefficiency effects and any errors in the profit function specification, respectively.
CONCLUSION AND RECOMMENDATIONS

The results point out the importance of examining not only profitability but also the determinants of profit among ornamental plants producers. The following recommendations were made based on the findings from this study: (i) Ornamental plants producers should have access to soft loans as this will help boost overall ornamental plants production in the study area. (ii) Ornamental plants producers can be mobilized into viable cooperatives so that they can gain from the use of pooled resources, finance incorporations as well as marketing of ornamental plants. (iii) The consumption of ornamental plants for beautification and protection of the environment should be encouraged as this would widen the market scope for ornamental agriculture, thereby encouraging participation in ornamental plants production.

REFERENCES