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Economic Study of Tropical Leafy Vegetables in South-East of Nigeria: The Case of Rural Women Farmers

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Abstract

Tropical leafy vegetables (TLVs) in South-East of Nigeria was evaluated in line with the objective of describing the socio-economic features of the farmers; describing the economic benefits of the TLVs; and determining the profitability of TLVs farming. Multi-Stage sampling technique was adopted for the study. In the first stage, two agricultural zones were selected from each of the two South-eastern states making it four agricultural zones in a whole. In the second stage, two blocks were randomly selected from each of the zones already selected. In the third stage, four cells were also randomly selected from the two blocks; this gave a total of eight (8) cells. In each of the cells, 10 farmers were purposively selected based on their interest in vegetable farming or marketing. This gave a total of 80 farmers for the study. Majority of the respondents were married, fell within the ages of 30 and 60 years with household sizes of 6 as the mean value, had formal education till secondary school level and were engaged in business/trading activities while the mean years of farming experience possessed by respondents is 9 years of age. Public enlightenment programmes that will improve the knowledge and education of women should be encouraged and embarked upon as the nutritional, health and medicinal benefits of TLVs should be enhanced.

1. Introduction

Tropical leafy vegetables are those vegetables that can grow in tropical soils with their natural habitat in sub-Saharan Africa (Agbugba, *et al*, 2011). It is reported that an estimated amount of 6,376 useful indigenous African plants of which 397 are vegetables (Plant Resources of Tropical Africa, 2004). They are foods with low glycemic index associated with low risk of type II diabetes and coronary heart disease, prolonged satiety responses which leads to weight control (World Health Organization, 2005). According to Opabode and Adegbooye (2005), information is available on cultivation practices for 280 Indigenous African Leafy Vegetables (IALVs). A resurgence in interest on the IALVs during the past decade with several studies reporting on their regional availability and use (Smith and Eyaguirre, 2007). In the April 2005 issue of Spore, the contributor observed that African.

Leafy vegetables are everywhere and nowhere, in books and on the internet there is a great deal of information on tropical green vegetables, but it is often scattered like leaves in the wind (Spore, 2005). Leafy vegetables are an important feature of Nigerian's diet

that a traditional meal without it is assumed to be incomplete (Badmus and Yekini, 2011).

Consequently, tropical leafy vegetables are mainly consumed for their nutritional values without much consideration for their medicinal importance and have been part of the food systems in Nigeria and other sub-Saharan African (SSA) countries for generations (Lyatuom *et al.*, 2009). They are referred to as plants which are consumed in addition to starchy basic foods in order to make it more palatable. Moreover, the increased awareness of the health protecting properties of vegetables has directed immense attention for its consumption in daily diets (Smith and Eyzaguirre, 2006). They add to the bulk of the diet and help the body to achieve smooth digestion of food (Muhammad and Shinkafi, 2014). In developing countries, the consumption of vegetables is generally lower than the FAO recommendation of 75kg per year in habitant (206g per day per capita). 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.

The importance of the nutritional status of vegetables by Nigerians has resulted in the increased demand for the knowledge of food nutrients. According to Fasuyi (2006), green leafy tropical vegetables are important components of the dietary regime of human beings because they provide the necessary vitamins and minerals which the body requires. Leafy vegetables are used to alleviate the problem of micronutrients, malnutrition and are very prominent in tropical Africa (Ejoh *et al.*, 2005). In addition, they contain anti-nutrients which reduce the bio-availability of these nutrients (Akindahunsi and Salawu, 2005). However, the leafy vegetables are used as popular food and culinary herb in soup in Southern and Eastern Nigeria (Agbugba, 2014). The leaves and young shoots of leafy vegetables could be cooked, boiled and consumed in different forms thereby adding to the important component of diversified diets rich in proteins, vitamins and mineral elements improving dietary quality (Thompson and Agbugba, 2013).

It is important to specifically list some TLV types cultivated and marketed extensively in Nigeria, especially in the South-eastern region (Ndie *et al.*, 2013). They include: *Vernonia amygdalina* (Bitter leaf or *Onugbu*), *Talinum triangulare* (Water leaf or *Mgborodi*), *Telfairia occidentalis* (fluted pumpkin leaf or *Ugu*), *Amaranthus esculentus* (Green or African spinach), *Gnetum africanum* (*Okazi*), *Pterocarpus soyauxii* (Camwood leaf or *Oha*), *Pterocarpus santalinoides* (*Nturukpa*), *Ocimum grattisimum* (Scent leaf or *ncho-anwu*), *Murraya koeningii* (Curry leaf), *Gongronema latifolium* (Bush buck or *Utazi*), *Solanum nigrum* (Garden egg leaf or *akwukwo-anara*), *Gongronema lagitifolium* (Bush buck or *Utazi*), *Piper guineense* (Black pepper or *Uziza*), *Curcubita pepo* (Pumpkin or vegetable marrow leaf or native *Akwukwo-Ugbogiri*) and *Panicum maximum* (Guinea grass or *Achara*). Due to the increase in

the demand for TLVs, they are produced and marketed in the wet and dry seasons of the year.

Some TLVs such as *Amaranthus cruentus* and *Vernonia amygdalina* are rich in several nutrients especially β -carotene, vitamin C or ascorbic acid, proteins, iron, folic acid, dietary anemia factors, and also other minerals such as phosphorus, calcium, sodium, copper, magnesium and potassium (Abosi and Rasoreta, 2003). In developed countries, they are used for fortification of some common foods (Aliyu and Morufo, 2006). Carotene normalizes the synthesis of female sex hormones, allowing women to stay young and healthy as they advance in age. They are relatively inexpensive and provide the necessary nutrients for health and development of the human body. In time past, the average African rural dweller depended on subsistence farming in which he cultivated vegetable crops at least for his immediate family consumption (Musa *et al.*, 2011). They provide the necessary nutrients for the health and development of the human body. In order words, the nutritional security of a society or country can be achieved only when enough vegetable substances are consumed (Pasquini and young, 2009). Hence they possess tremendous potentials to address poverty alleviation and nutritional security because they are easy to grow, highly affordable, easily available and require minimum production inputs (Nwauwa and Omonona, 2010).

In spite of this body of evidence confirming the nutritional contribution of TLVs to local diets, and their health maintenance and protective properties, there has been very little concerted effort towards exploiting this bio-diverse nutritional and health resource to address the complex food, nutrition and health problems of Nigeria. Several of these TLVs continue to be utilized for their prophylactic and therapeutic purposes and have been reported to have health protecting properties and uses by rural communities (Tapsell, 2006). For example, it was observed that the roots, leaves, twigs and barks of Moringa plant (*Moringa oleifera*) are used in the preparation of traditional medicine (Djuikwo *et al.*, 2011). However, according to Okoli *et al.* (2007), a large number of African indigenous leafy vegetables have long been known and reported to have health protecting properties and uses. Also, ethno-botanically, some leafy vegetables could be consumed either as macerated leaves in soups or aqueous extracts as tonics for various illnesses (Sabiou and Wudii, 2011). For instance, many herbalists and naturopathic doctors recommend aqueous extracts of bitter leaf for their patients for *emesis*, loss of appetite induced *ambrosia*, dysentery and other gastro-intestinal tract problems (Agbogidi and Akpomorine, 2013).

Some vegetable crops are used for treatment of jaundice, diarrhea, Hepatitis B and C, cancer; diabetes and tuberculosis with the development of bitter leaf based dietary supplements (Ibrahim *et al.*, 2010). Poly-herbal preparations with bitter leaf as the active ingredients strengthen the immune system through many cytokines and

chemokines regulations. It also lowers the body sugar level sufficiently, thereby playing the active role of repairing of the pancreas. If 10 handfuls of bitter leaf fresh leaves are squeezed in 10 liters of water and consumed two glasses thrice a day for a month, diabetes is cured (Munaya, 2013). TLVs are said to contribute to healthy diets and may reduce the risk of chronic diseases like breast cancer and type-II diabetes (Edeoga *et al.*, 2005). In other words, bitter leaf which is a traditional ingredient in Africa cuisine can reduce bad and total cholesterol. It is an abundant source of oxidation which increases the antioxidant properties of bitter leaf make a healthy disease fighting addition to human health (Sodimic *et al.*, 2006). Staying physically active, eating a low fat diet and maintaining a healthy weight can reduce risk of breast cancer in women. Additionally, eating bitter leaf may combat breast cancer cell growth (Ejoh *et al.*, 2005).

With the current increase in women's role in the cultivation as well as commercialization of activities involving high value vegetable crops (HVVC), attention regarding the production and consumption of TLV crops has continued to dwindle. This could be as a result of inadequate information on the health and nutritional benefits, lack of information about their performance and input requirements, as well as lack of available germplasm for widespread use their production (Egbule, 2012). Very little is still known about the nutritional and health benefits of TLVs as regarding their production, marketing and consumption. An expert report on the socio-economic features, as well as the diverse vital roles and benefits which some selected TLVs (*Telfairia occidentalis*, *Amaranthus esculentus*, *Talinum triangulare*, *Vernonia amygdalina*, *Gnetum africanum*, *Ocimum gratissimum*, *Murraya koenigii*, *Gongronema latifolium*, *Solanum nigrum* and *Piper guineense*) play in our diets thereby constituting the prop on which intervention programmes can be developed.

2. Purpose of the Study

The purpose of this study is to economically analyze tropical leafy vegetables farming with specific interest to rural women farmers in South-East Nigeria. Specifically, the objectives were to:

1. Describe the socio-economic features of the respondents in the study area;
2. Describe the economic benefits of the TLVs.
3. Determine the profitability analysis of TLVs farming.

3. Methodology

The study was conducted in South-East Nigeria. Out of the five states that make up the South-eastern states of Nigeria, Abia and Enugu States were randomly selected from the study. This area is situated east of River Niger and covering an area of 29, 908 square kilometers with population of about 16,381,729 people (National Population Commission, 2006) and lying on latitudes 5° and 7°75' North and longitudes 6°85'

and 8°46' East (Federal Ministry of Lands, Housing and Urban Development, 2010). The population of this study comprised of rural women farmers who are leafy vegetable farmers in the study area. Primary data which was used for this study was obtained through the use of structured questionnaires administered to the respondents. Multistage sampling technique was adopted for the study. Two agricultural zones were selected from each of the two (2) South-eastern states making it four (4) agricultural zones in a whole. Two (2) blocks were randomly selected from each of the zones already selected. Four (4) cells were also randomly selected from the two blocks; this gave a total of eight (8) cells. In each of the cells, 10 farmers were purposively selected based on their interest in vegetable farming or marketing. This gave a total of 80 farmers for the study.

3.1. Analytical Techniques

Descriptive statistics such as frequencies and percentages were used to analyze the socio-economic features as well as the economic benefits of the TLVs.

3.2. Profitability Analysis of Tropical Leafy Vegetables Farming

The process of analyzing the profitability of tropical leafy vegetables may provide a rational basis for making decision in allocating scarce resources among various options to achieve the goal.

3.3. Benefit-Cost Ratio (BCR)

In order to measure the economic efficiency or performances of tropical leafy vegetables farmers, the capital budgeting tool of BCR was used. More so, for this study, the benefit is taken to be equivalent to income or revenue generated by the farmers in the sale of the vegetables. This implied that BCR=Total Income.

The Benefit-cost ratio was represented by the equation:

$$BCR = TR / (Pr.c. + Mar. c.) \quad (1)$$

Where:

BCR = the benefit-cost-ratio for the joint production and marketing operation.

TR = Total revenue, (i.e. total value of sales; Pr. c = production costs;

Mar. c = costs of executing the marketing operation(s) all in Naira (₦))

This can be compared with the traditional benefit- cost ratio represented by equation (2)

$$BCR = TR/Pr.c. \quad (2)$$

The benefit-cost ratio indicated the relative value of the tropical leafy vegetables cultivated or marketed in terms of the rate of return per naira spent in the enterprise. This signifies that the higher the ratio, the greater the rate of returns.

4. Results and Discussion

4.1. Socio-Economic Features of the Respondents

The socio-economic features of the respondents in the study area include: age, marital status, household size, level of education, occupation and number of years spent in vegetable farming. Majority (92.5%) of the women fell within the active ages of 30 and 60 years, 6.25% fell below the age of 30 years and 1.25% fell above the age of 60 years. On the other hand, the mean age of the respondents is 42years. This implies that leafy vegetable farmers in the study area has an active work force and are relatively young. More so, majority (73.7%) of the women that fell within the ages of 30-49 years were more involved in tropical leafy vegetable farming. This is a good indication for sustainable and active farming in the study area. Schippers (2000) made a similar observation. Findings on marital status show that majority of the respondents are married 60%, widowed 21.25%, single 16.25% and divorced 2.5%. High proportion of the respondents that are married suggested that married people would have additional labour supply for vegetable farming activities from the family. However, more of the income from the sale of vegetables will go into the welfare of the family. Result from household size showed that 12.5% of the respondents had household size of less than 4 persons, 41.3% had within 4-6 persons, 32.5% had between 7-9 persons and 13.7% had above 9 persons. This could imply why leafy vegetable farming enterprise in the study area is relatively a large one. The implication is that the smaller the household size, respondents would need to employ hired labour to supplement family labour, thereby ensuring more

cost. The mean of the household size is 6 persons.

Majority (36.3%) of the respondents had formal education till secondary school level, 27.5% had primary education, and 22.5% had no formal education, while 13.7% had formal education till tertiary level. The mean of the educational level fell within the level of primary education. Hence, this influences the technical and allocative efficiency of farmers in terms of adoption and use of technologies, minimizing cost, modern processing techniques, market prices and loan acquisition from financial institutions (Ezihe *et al.*, 2014).

Majority (52.5%) of the respondents were engaged in business/trading activities, 38.75% were primarily engaged in vegetable farming, while majority (8.75%) of the respondents were of the teaching profession/civil servants. This implied that leafy vegetable farming is a major lucrative occupation for so many women.

Results of the findings on the experience of the leafy vegetable farming enterprise shows that majority (63.75%) of the respondents had 2-16 years of farming experience of vegetable farming. The rest (15%, 11.25% and 10%) of the respondents had above 21years, below 2years and above 21years, respectively of farming experience. However, the mean years of farming experience possessed by respondents is 9 years.

4.2. Economic Benefits of Tropical Leafy Vegetables

The economic benefits of TLVs is described in line with their nutritional and health/medicinal benefits. However, the percentage responses of the respondents in line with the benefits which TLVs provide are reflected in Table 1.

Table 1. Distribution of Respondents' Responses on Economic Benefits of TLVs

Selected TLVs	Common Name	Native Name	Food & Nutrition (%)	Health & Medicine (%)	Animal Feed (%)
<i>Telfairia occidentalis</i>	Fluted pumpkin	<i>Ugu</i>	100	89	100
<i>Amaranthus cruentus</i>	Green or African Spinach	<i>Inine</i>	100	47	100
<i>Talinum triangulare</i>	<i>Mgborodi</i>	<i>Mgborodi</i>	100	51	100
<i>Vernonia amygdalina</i>	Bitter-leaf	<i>Onugbu</i>	100	89	100
<i>Solanum nigrum</i>	Eggplant or Garden egg leaf	<i>Akwukwo-anara</i>	100	99	0
<i>Ocimum gratissimum</i>	Scent leaf	<i>Nchoanwu or Ahuji</i>	100	97	0
<i>Gnetum africanum</i>	<i>Okazi</i>	<i>Ukazi</i>	67	98	0
<i>Piper guineense</i>	Black pepper	<i>Uziza</i>	94	52	0
<i>Gongronema lagitifolium</i>	Bush buck	<i>Utazi</i>	56	100	91

Source: Field Survey. 2014

Table 2. Economic Benefits of Tropical Leafy Vegetables

TLVs	Economic Benefits	Frequencies
<i>Telfairia occidentalis</i>	Rich in iron and vitamins for treatment of anaemic conditions and increases the blood volume and boosts immune system	293*
<i>Amaranthus cruentus</i>	It prevents convulsion, lowers cholesterol, boosts fertility, prevents liver damage, good for diabetics due to its <i>hypoglycemic</i> (sugar reducing) effect	131*
<i>Talinum triangulare</i>	Tapeworm expellant, relief pulmonary problems, helps in muscle development, haematological indices, serum and liver metabolites	168*
	They are rich in polyphenol antioxidants found naturally in plants and deactivate the effects of diseases. They contain <i>Saponins</i> which has beneficial effects on blood cholesterol levels, diuretic, stomach problem, cancer, bone health and stimulation of the immune system.	

TLVs	Economic Benefits	Frequencies
<i>Vernonia amygdalina</i>	A multi-healer used for stomach ache, diabetes, worm expellers, diarrhea, malaria, fever, stroke, pneumonia, insomnia (sleeplessness), arthritis, intestinal problems, memory loss, prostate cancer; it has anti-parasitic, anti-malaria, anti-tumour, anti-bacterial and anti-inflammatory properties. It is also used for the improvement of contraction during labour, treatment of tooth ache, hypertension, whooping cough, gingivitis and sexually transmitted diseases. It is also used for soap making, ornamental purposes, a substitute for hop which is used in beer-brewing in Nigeria and other African countries.	626*
<i>Solanum nigrum</i>	Used as a sedative, controls vomiting and tetanus after abortion	199*
<i>Ocimum grattissimum</i>	For treatment of anorexia, fever, diarrhea, dysentery, pile, stomach problems, HBP dysentery and stimulation of appetite.	425*
<i>Gnetum africanum</i>	Purifies the bladder; has the ability to control bedwetting in children; used in treating <i>nausea</i> and considered as an antidote to some forms of poison; used in dressing warts and boils to enhance healing, taken by pregnant mothers to reduce pain during childbirth.	239*
<i>Piper guineense</i>	For stomach cleanser for women	136*
<i>Gongronema lagitifolium</i>	For stomach aches and diabetes, and stomach cleanser for women	164*

* Multiple responses
Source: Field Survey, 2014

Table 1 shows that all (100%) of the respondents indicated that *Telfairia*, *Amaranthus*, *Talinum*, *Vernonia*, *Solanum* and *Ocimum* were used as vegetables in preparation of meals especially soups, stews and other native delicacies, whereas a majority (94%, 67% and 56%) of the respondents indicated *Piper*, *Gnetum* and *Gongronema* were consumed as edible vegetables, as the case may be.

Egbule (2012) made a similar observation. For the health, medicinal and therapeutic benefits, about majority (100%, 99%, 98%, 89% and 89%) of the respondents opined that *Gongronema*, *Solanum*, *Gnetum*, *Ocimum*, *Telfairia* and *Vernonia* possessed therapeutic and medicinal benefits. Moreover, it was indicated that all (100%) the respondents indicated that livestock can be fed *Telfairia*, *Amaranthus*, *Talinum* and *Vernonia*, while 91% of the respondents implied that *Gongronema* can be fed to livestock.

4.3. Health and Medicinal Benefits of Tropical Leafy Vegetables

This section gives a careful analysis of the health and medicinal benefits of TLVs regarding their therapeutics properties and constituents which are established. Table 2 shows the health and medicinal benefits of TLVs.

4.3.1. Telfairia Occidentalis

Table 2 showed that the respondents reported that *Telfairia* enriches the blood volumes and is used in treating anaemia thereby building up the immune system (80). Kayode and Kayode (2010) made a similar observation. The respondents however, noted that the leaves of the vegetables could prevent convulsion (12), lowers cholesterol level (45), boosts fertility in women (67), prevents liver damage (30), good for diabetics (59) due to its *hypoglycemic* (sugar reducing) effect.

4.3.2. Amaranthus Cruentus

The respondents indicated that the vegetable is used for expelling tapeworm from the body (34), gives relief to the pulmonary arteries (1), helps in the development of the muscles (5), helps in building up the blood volumes i.e. haematological indices (80), serum and liver metabolites (11).

4.3.3. Talinum Triangulare

The respondents indicated that the vegetable is rich in polyphenol antioxidants which are naturally found in plants and also deactivates the effect of diseases (40). In order to build up healthy bones and stimulation of the immune systems, the *Saponins* contained in them has beneficial effects of reducing the blood cholesterol levels in the blood (87) and also prevents growth of cancerous cells (12), diuretic and stomach problems (29).

4.3.4. Vernonia Amygdalina

The respondents indicated that it is a multi-healer used for stomach ache (35), diabetes (35), expulsion of worms, control of other diseases such as diarrhea (45), malaria (59), fever (71), stroke (10), pneumonia (27), insomnia or sleeplessness (68), arthritis (11), intestinal problems (70), memory loss (2), prostate cancer (7); and has anti-parasitic, anti-malaria, anti-tumor, anti-bacterial and anti-inflammatory properties. It is also used for the improvement of contraction during labour (4), treatment of tooth ache (33), hypertension (21), whooping cough (22), gingivitis (3) and sexually transmitted diseases (8). In addition to that, it is also used for soap making (66), ornamental purposes (45), a substitute for hop which is used in beer-brewing (64) in Nigeria and other sub-Saharan African countries. Agbogidi and Akpomorine (2013) made a similar observation.

4.3.5. Solanum Nigrum

Out of the entire respondents, *Solanum* was referred to as a sedative (6), has healing properties (80) and controls vomiting (76) and prevents tetanus (37) after abortion for women.

4.3.6. Ocimum Grattissimum

The respondents attributed *Ocimum* as having the ability of treating *Anorexia nervosa* (29), fever (69), diarrhea (79), dysentery (74), pile (48), stomach problems (77) and high blood pressure HBP (49)

4.3.7. Gnetum Africanum

The respondents indicated that *Gnetum* purifies (19) the

bladder; has the ability to control bedwetting in children (30), treating *nausea* (53) and considered as an antidote to some forms of poison (2); used in dressing warts and boils to enhance healing (62), taken by pregnant mothers to reduce pain during childbirth (73).

4.3.8. Piper Guineense

From Table 2, the respondents agreed that *Piper* serves as a cleansing agent (65) for women's stomach who have tumours, fibroid or having conception problems (71)

4.3.9. Gongronema Lagitifolium

The vegetable serves as a medicine to cure stomach aches (38), diabetes (49) and cleanses the stomach (77) for women with fibroid cases. Mensah *et al.* (2008) made a similar inference.

4.4. Profitability Analysis

The benefits cost ratio of the TLVs indicates their relative values terms of rate of returns per naira spent on purchase or sales. This implies that the higher the ratio, the greater the rate of returns. Pertaining to this work, the BCR for *Telfairia*, *Amaranthus*, *Talinum*, *Vernonia*, *Solanum*, *Ocimum*, *Gnetum*, *Piper* and *Gongronema* were 2.61:1, 2.11:1, 3.55:1, 2.56:1, 2.20:1, 3.98:1, 2.07:1, 3.5:1 and 4.5:1, respectively. This result implied that one naira spent in their cultivation or sales of *Telfairia*, *Amaranthus*, *Talinum*, *Vernonia*, *Solanum*, *Ocimum*, *Gnetum*, *Piper* and *Gongronema*, yielded ₦1.61 kobo, ₦1.11kobo, ₦2.55kobo, ₦1.56kobo, ₦1.2kobo, ₦2.98kobo, ₦1.07kobo, ₦2.5kobo and ₦3.5, respectively. (Note that \$1 USD = ₦179.20). The reason which can be deduced for this profitability especially for vegetables like *Gongronema*, *Ocimum*, *Talinum*, and *Piper* could be the low production costs or near complete absence of it as these crops are generally grown as boundary crops or growing naturally in the farms. This therefore, implies that if increased efforts are concentrated towards the cultivation of these vegetables, the likelihood to improve the economic situation of the rural women and will subsequently lead to poverty alleviation and create more employment opportunities.

The findings on high profitability are in line with Agbugba (2014) that Vegetables such as *Telfairia occidentalis* and *Abelmoschus eschulentus* during the dry season in Nigeria increases the marketers' income. Also, in Thompson and Agbugba (2013) showed that Tropical vegetables offer a significant avenue for people to earn a living. This is because TLVs production can be done with little capital investment. This however implies that cultivation of vegetables possesses the potentials to provide people with employment especially those residing either in the rural or peri-urban areas.

From the findings, there is evidence that TLVs are a major source of income among respondents who engage in its exploitation. There is therefore need to encourage the production of these vegetables as majority of these vegetables have proven to possess economic potentials. This in turn will encourage research activities thereby leading to increased cultivation, consumption and conservation of these

TLVs especially those facing the threat of extinction.

It is equally important to note that though majority of the TLVs were available and could be sold for income generation purposes, they are mainly consumed by the farmers for their nourishment. This is due to low market and the commonality of these vegetables in the study area. In addition, the TLVs that contributed to income generation in the study area are those that have been domesticated and not growing in the wild.

Table 3. Benefit-Cost-Ratio of Tropical Leafy Vegetables Farming

Selected TLVs	Income (₦)	Cost (₦)	BCR
<i>Telfairia occidentalis</i>	38,108.23	14,565.44	2.61
<i>Amaranthus cruentus</i>	12,663.59	5,996.50	2.11
<i>Talinum triangulare</i>	1,066.80	300.50	3.55
<i>Vernonia amygdalina</i>	2,564.05	1,000.00	2.56
<i>Solanum nigrum</i>	853.50	388.01	2.20
<i>Ocimum gratissimum</i>	1,600.90	402.20	3.98
<i>Gnetum africanum</i>	23,234.00	11,234.42	2.07
<i>Piper guineense</i>	525.00	150.00	3.50
<i>Gongronema lagitifolium</i>	450.00	100.00	4.50

Source: Field Survey Data Computed, 2014

5. Conclusion

TLVs are significant in the agricultural development of a state and country as the case may be. TLVs are a major source of income among respondents who engage in its farming. There is therefore, need to encourage the production of these vegetables as majority of these vegetables have proven to possess economic potentials. The nutritional and health/medicinal benefits of TLVs assist in combating malnutrition, prevention of many diseases as well as contributing to the food security system of rural areas. TLVs farmers deserve priority attention not only because they greatly contribute to agricultural development, but because they constitute the most affordable and cheapest source of food. Public enlightenment programmes that will improve the knowledge and education of women should be encouraged and embarked upon as the nutritional, health and medicinal benefits of TLVs should be enhanced.

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