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POTENTIAL OF *SENECIO BIAFRAE* (SIERRA LEONE BOLOGNI) TO CONTRIBUTE TO IMPROVED LIVELIHOOD IN EKITI STATE



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ABSTRACT

This study examined the economic value of market margins of *Senecio biafrae* and the capability of the market margin to contribute significantly to improved livelihoods in Ekiti State. Primary data needed for the study were obtained through administration of questionnaires on 600 randomly selected respondents, drawn from four purposively selected local government areas (LGAs), in Ekiti State. Data obtained were analyzed using descriptive statistics as well as economic rate of returns on investment to ascertain the potential of *Senecio biafrae* to notably contribute to improved livelihood. Results of the study showed that all the harvesters and 90% of the marketers are females and that none of the harvesters was involved in the cultivation of the vegetable. All the respondents disclosed that the vegetable mainly grows in cocoa plantations during the rainy season and near streams and rivers during the dry season. All the respondents identified bundle of an average weight of 0.5kg as the only unit of sale of *Senecio biafrae* and an average of 135kg being sold in each market day in the study Area. Majority of the respondents (81.5%) disclosed that the rate of sales of *Senecio biafrae* is high. The rate of returns on investment (RORI) is 49.91%. The results of the study showed that production and marketing of *Senecio biafrae* has potential to improve livelihood in the study area. Achieving this potential will require educating the farmers on the economic potential of this vegetable as well as providing useful agronomic information and advice on its cultivation. It will also be necessary to explore the agroforestry potential of the crop so as to investigate the possible conditions for its growth under different plantations.

Keywords: *Senecio biafrae*, livelihood, market margins, Ekiti state,

INTRODUCTION

Green leafy vegetables (GLVs) are one of the sources of nutrients for growth in man and animals. They constitute an indispensable part of human diets generally in most parts of West Africa. Adebooye *et al.*, 2003 compiled a list of twenty-four (24) indigenous leaf vegetables (ILVs) that are eaten in Southwest Nigeria alone, while Fafunso and Bassir, 1977; and Oguntona *et al.*, 1989 revealed a progressive per capital daily consumption of vegetables in Nigeria from 65g in 1977 to 360g in 1989. The abundance of GLVs in Nigeria markets can be a pointer to their importance as valuable sources of food, traditional medicine and income. The trade in GLVs constitute source of income to the rural dwellers and the urban poor. *Senecio biafrae* commonly called "Sierra Leone bologni" or "Rorowo" in

Yoruba language is a prominent indigenous leafy vegetable that grows in large quantity as undercover in cocoa plantations. It has a special taste and high nutritional quality which make it popular among the Ekiti indigenes in particular and the Yoruba people in general. It is one of the major indigenous leafy vegetables traded in markets across the length and breadth of Ekiti State.

The studies conducted by Tindall (1983), Schippers (2000), and Dairo and Adanlawo (2007), revealed that *Senecio biafrae* is a good source of protein in the nutrition of both human beings and animals. It is used in human diets as purgative and as an agent that aid digestion process because some of its minerals in their divalent state function as cofactors to enzymes in

most of the nutrient metabolic processes for healthy living. It is also used in the treatment of heart problem, rheumatism and as blood tonic while juice extracted from it is useful for wound dressing and for treatment of cough.

World Bank (2001) reported that by 1999 more than 70% of Nigerians were living in poverty. Consequently, Ekiti State being largely an agrarian economy in a developing country is expected to have more than 70% of its people living in poverty. Since harvesting and trading in *Senecio biafrae* bring income to the harvesters and marketers, the promotion of its production in large quantity can serve as one of the community based rural strategies to improve livelihoods in the study area.

Achieving this will require the knowledge of the market margins obtainable from the sales of the vegetable as well as how such can be improved substantially to be able to significantly contribute to improved livelihoods. The objective of the study therefore is to determine the economic value of the market margins of *Senecio biafrae* and assess the capability of the market margin to contribute significantly to improved livelihoods in the study area.

METHODOLOGY

Background Information on the Study Area

The study was carried out in Ekiti State, Nigeria. The state came into existence in October 1996 when it was carved out of the North Western Part of the former Ondo State. Ekiti state is made up of sixteen local government areas (LGAs), with a population of 2,340,000 (NPC 2006). The State is a mono-ethnic community which covers a land mass area of approximately 7,500km². It is situated in the rain forest zone of the south western part of the country, between longitudes 4° 5' and 5° 45' East of the Greenwich Meridian and latitudes 7° 15' and 8° 5' north of the equator. It shares boundaries with Kwara state in the northern part, Osun state in the western part, Kogi State in the eastern part and Ondo State in the south-eastern part. Its mean annual temperature ranges from 22.5°C to 28°C while mean annual rainfall ranges between 1,500mm to 2,000mm. The state's vegetation consists of tropical forest in the south, while guinea savannah predominates

in the northern peripheries (Uni-que Solutions 2006). Agriculture and forest based activities are major contributors to the economic development of the state since farming is the predominant occupation of the indigenes.

Data Collection and Analysis

Primary data for the study were obtained through administration of questionnaires on respondents. A total of 600 respondents were randomly sampled from four (4) Local Government Areas (LGAs) of the state. The Local Government Areas (LGAs) are: Ado-Ekiti, Ikole-Ekiti, Ikere-Ekiti and Ekiti-West Local Government Areas. These Local Government Areas (LGAs) were purposively selected because of their relative high level of urbanization. Fifty questionnaires were administered on harvesters in each of the four LGAs, while 100 questionnaires were administered on marketers in each of the four LGAs. This makes a total of 200 questionnaires administered on the harvesters and 400 questionnaires administered on the marketers in the study area, making a sum total of 600 questionnaires for the study.

Sampled marketers of *Senecio biafrae* were selected from one major market in each of the headquarters of the selected Local Government Areas (LGAs). Since the headquarters of the selected LGAs are themselves largely farming communities, harvesters of the vegetable were also contacted through the selected marketers and were eventually interviewed.

Data obtained were analyzed using descriptive statistics as well as economic rate of returns on investment to ascertain the profitability of the enterprise.

The rate of returns on investment (RORI) is given by:

$$RORI = \left(\frac{TR - TC}{TC} \right) 100$$

Where RORI = Rate of Returns on Investment

= Total Revenue

= Total Cost.

RESULTS AND DISCUSSIONS

Gender Analysis of Harvesters and Marketers of *Senecio Biafrae*

Gender analysis has to do with the simple comparison of the number, or proportion of male and female within a unit of population in a project, event, village, office, community, as well as with more complex process of examining the relations between those counted, defining who has the right and access to, or control of which resources. Gender analysis as an instrument in development studies enhances deeper understanding of the activities of interest and importance to each unit of the gender component of the society, and the opportunities and challenges that each of them face in doing those activities (Aiyeloja and Ajewole 2005). Gender as a social variable is

examined in this study so as to know who is involved in what. This will help in making recommendations that are not only gender sensitive, but also gender balance.

Investigations revealed that 100% of the harvesters of *Senecio biafrae* were females. It is the farmers' wives who are usually involved in the harvesting of the vegetable. Similar trend can be observed in Table 1, where 90% of the marketers were also females. This trend is not unexpected because more females relative to males are often involved in selling farm produce especially those that are not cash crops or considered to have much economic value. As a matter of fact, the 10% of the marketers who are males are young people who are assisting their parents in marketing the vegetable.

Table 1: Gender Distribution of Harvesters and Marketers of *Senecio Biafrae* in Ekiti State

Gender	Local Government Areas									
	Ado-Ekiti		Ikole-Ekiti		Ikere-Ekiti		Ekiti-West		Total	
	Counts	%	Counts	%	Counts	%	Counts	%	Counts	%
Harvesters										
Female	50	100	50	100	50	100	50	100	200	100
Male	-	-	-	-	-	-	-	-	-	-
Total	50	100	50	100	50	100	50	100	200	100
Marketers										
Female	91	91	96	96	86	86	87	87	360	90
Male	9	9	4	4	14	14	13	13	40	10
Total	100	100	100	100	100	100	100	100	400	100
Total	150	100	150	100	150	100	150	100	600	100

(Respondents)

Cultivation, Habitat and Seasonal

Availability of *Senecio Biafrae*

The results in Table 2 showed that none of the harvesters was involved in the cultivation of *Senecio biafrae*, although they claimed to be involved in the cultivation of some other vegetables such as *Amaranthus viridis*, *Amaranthus hybridus* and *Celosia argentea*. They have been harvesting the ones that are found in and around their farms. The respondents revealed that the vegetable do bear seeds which can germinate, but iterated that the major regeneration method is the re-growth of the old stock whenever the environment is conducive.

All the respondents also disclosed as can be observed from Table 2, that the vegetable grows

mainly in cocoa plantations. Similarly, all the respondents revealed that *Senecio biafrae* is readily available during the rainy season alone. The harvesters revealed that the vegetable sprouts with the commencement of the rain in March, and makes use of the rain to grow to maturity. Thus the vegetable is not available in the dry season. However, the harvesters further revealed that the vegetable can be found in cocoa plantations near streams or rivers during the dry season.

Table 2: Respondents' Opinion on Cultivation, Habitat and Seasonal Availability of *Senecio Biafrae* in Ekiti State

Cultivation (Harvesters)	Local Government Areas								Total	
	Ado-Ekiti		Ikole-Ekiti		Ikere-Ekiti		Ekiti-West			
	Counts	%	Counts	%	Counts	%	Counts	%	Counts	%
Yes	-	-	-	-	-	-	-	-	-	-
No	50	100	50	100	50	100	50	100	200	100
Total	50	100	50	100	50	100	50	100	200	100
Habitat (Harvesters)										
Cocoa Plantation	50	100	50	100	50	100	50	100	200	100
Forest Plantation	-	-	-	-	-	-	-	-	-	-
Fallow land	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-
Total	50	100	50	100	50	100	50	100	200	100
Seasonal Availability (All Respondents)										
Rainy season	150	100	150	100	150	100	150	100	600	100
Dry season	-	-	-	-	-	-	-	-	-	-
All seasons	-	-	-	-	-	-	-	-	-	-
Total	150	100	150	100	150	100	150	100	600	100

Units and Rate of Sales of *Senecio biafrae* in the Study Area

Results in Table 3 revealed that all the respondents identified bundle as the only unit of sale of *Senecio biafrae* in the Study Area. Each bundle of the vegetable is about 0.5 kg in weight. Further investigations revealed that an average of 135kg of the vegetable is sold in each market day in the study area; comprising 177.5 kg in Ado-Ekiti LGA, 112.5 kg in Ikole-Ekiti LGA, 150 kg in Ikere-Ekiti LGA and 100 kg in Ekiti west LGA. It can also be observed from the table that 81.5% of the respondents disclosed that the rate of sales of the vegetable is high, 18.5% said that it is

moderate while none said that the rate of sale is low. High rate of sale implies that most of the vegetable brought to the market is sold; moderate implies that few of the vegetable brought to the market is returned unsold, while low implies that most of the vegetable brought to the market is returned unsold. From the foregoing, it can be inferred that the average quantity of 135 kg of the vegetable sold in each market day in the study area is limited more by supply than demand, bearing in mind that most of the respondents iterated that the rate of sales is high.

Table 3: Respondents' Opinion on the Units and Rate of Sales of *Senecio biafrae* in the Study Area

Sales Units (All Respondents)	Local Government Areas								Total	
	Ado-Ekiti		Ikole-Ekiti		Ikere-Ekiti		Ekiti-West			
	Counts	%	Counts	%	Counts	%	Counts	%	Counts	%
Basket	-	-	-	-	-	-	-	-	-	-
Sack	-	-	-	-	-	-	-	-	-	-
Bundle	150	100	150	100	150	100	150	100	200	100
Others	-	-	-	-	-	-	-	-	-	-
Total	150	100	150	100	150	100	150	100	200	100
Rate of Sales (All Respondents)										
High	145	96.7	107	71.3	143	95.3	94	62.7	489	81.5
Moderate	5	3.3	43	28.7	7	4.7	56	37.3	111	18.5
Total	150	100	150	100	150	100	150	100	600	100

Market Margin of *Senecio biafrae*

Market margin refers to the net sales less the cost of the goods and attendant services required to make the goods available in the market. It implicitly consists of cost and profit components and has a positive correlation with market efficiency. Investigations in the study revealed that an average bundle (0.5kg) of *Senecio biafrae* comes out of the farm gate at the rate of ₦10 per bundle in Ado-Ekiti and Ikere-Ekiti LGAs, ₦5 per bundle in Ikole-Ekiti and

Ekiti West LGAs respectively. The other cost component, which is the cost of transportation, amounted to ₦145 in Ado-Ekiti LGAs, ₦72 in Ikole-Ekiti LGAs, ₦124 in Ikere-Ekiti LGAs and ₦95 in Ekiti West LGAs respectively. In order to assess the profitability of this enterprise and its potential to contribute to improved livelihood, an extrapolation of the rate of returns on investment (RORI) on 100kg of the produce (*Senecio biafrae*) was carried out and presented in Table 4

Table 4: Marketing Cost and Margin of *Senecio biafrae* in Ekiti-State

LGAs	Farm gate price; (₦)/100kg	Average cost of transportation (₦)/100kg	Delivery price at the market (₦)/100kg	Sales price; (₦)/100kg	Market margin (₦)/100kg	% Returns
Ado-Ekiti	2000	598	2598	4000	1402	53.96
Ikole-Ekiti	1000	365	1365	2000	635	46.52
Ikere-Ekiti	2000	642	2642	4000	1358	51.40
Ekiti-west	1000	400	1400	2000	600	42.86
Mean	1,500	501.25	2001.25	3000	998.75	49.91
Standard deviation	577.35	139.03	714.84	1154.7	440.83	4.96

Observations from Table 4 above show that the average returns from the sales of 100kg of *Senecio biafrae* in the study area is ₦998.75, while the average rate of returns which is a measure of the economic value of the returns and the potential of the enterprise to contribute to improved livelihood, ranges between 42.86% to 53.96% with the average being 49.91%. If this is compared with the maximum lending rate of 18.59 percent for commercial bank (CBN 2006), marketing of *Senecio biafrae* can be said to be profitable with a good potential for improved livelihood, since the rate of returns on investment for the enterprise (49.91%) is much higher than the maximum lending rate. It shows that if a bank loan is taken to invest on the enterprise, the returns on the investment will off-set the loan and still leave considerable margin behind.

CONCLUSION

The results of this study have apparently shown that production and marketing of *Senecio biafrae* has potential to improve livelihood in the study

area by enhancing economic empowerment. However, this can not be achieved without educating the farmers on the economic potential of this vegetable as well as providing useful agronomic information and advice on its cultivation. This is a challenge to the Ekiti State Ministry of Agriculture and Agriculture Development Project to encourage agronomic studies of the vegetable; organize educative programmes for the farmers as well as liaise with public agricultural micro financial institutions to provide loans for the cultivation of the vegetable. This will no doubt encourage the farmers to engage in extensive cultivation of the vegetable and consequently improve their economic status. There is also the need to explore the agroforestry potential of the crop so as to investigate the possible conditions for its growth under different plantations.

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