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Socio-Economic Importance of *Adansonia digitata* (Baobab) in New-Bussa and its Environs, Niger State, Nigeria

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ABSTRACT: The study accessed socio-economic importance of *Adansonia digitata* (Baobab) in New-Bussa and its environs, Niger State Nigeria. Data were collected with the aid of pre-tested questionnaire. Purposive and accidental sampling techniques were used to select the community and the respondents. Data collected was subjected to descriptive analysis. The demographic characteristics of the respondents indicated that male had the highest percentage (65.0%) with 31-35 years recording highest (31.2%). Majority (40.0%) of the respondents are farmers. The finding further revealed that majority of the respondents (41.3%) had secondary education. Majority (53) of the respondent are involves in the collection of *Adansonia digitata* and the people involves in the processing and marketing of *Adansonia digitata* are mostly women. The frequently used parts of the plants are leaves and bark. The socio-economic importance of the plants is to generate income. Perception of respondents towards the status of *Adansonia digitata* showed that the plants are decreasing and the reasons for the changes in the study area are due to human exploitation and infrastructure development. The study concludes that *Adansonia digitata* tree contributed immensely to the economic development of study area through the provision of wild food, medicine and fuelwood.

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Trees are important to humankind not only economically, environmentally and industrially but also spiritually, historically and aesthetically, for they sustain human life through direct and indirect gains by providing a wide range of products for survival and prosperity. Trees as part of vegetation resources play an integral part in human and economic development of any nation, for the simple reason that economic trees are crucial for meeting the majority of rural energy needs, they (trees) provide many basic needs for life such as medicine, food, fodder, timber, environmental protection and sustainability etc, based on *this* therefore, it could be concluded that trees touches almost all aspect of life (Rabi'u and Murtala, 2013). Forest provides habitat for organisms that make up earth biodiversity, many small animals use trees as shelter and protection from predators. The natural forest ecosystems have economic benefits potentials to the nation. Tee and Ageende (2005), listed some of these benefits which include: fuel wood, lumber, food, oil, exudates, fiber and medicinal extracts, etc.

These economic trees are conserved, but most nation are lacking conservation ethics. Baobab (*Adansonia digitata*) tree is one of the typical trees that has been

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given attention by the rural people due to ample benefits derived from it. More than thirty different uses were found from the tree (Von maydell, 1999). The plant has numerous medicinal and non-medicinal applications in Africa; every part of the baobab tree is reported to be useful (Gebauer 2002). Indeed researches indicated that vegetation resources is playing vital role on socio-economic development of the rural area, meaning that it is making a positive impact in rural economic development (Rabi'u 2010). This is because most of the rural economy in the region is agricultural; this has contributed a lot in the discovery of so many potential uses of the trees and their products.

Adansonia digitata called the baobab tree in both English and French belongs to the Malvaceae family (De Caluwé *et al*., 2010). The plant is a very massive tree with a very large trunk (up to 10 m diameter) which can grow up to 25 m in height and may live for hundreds of years. The plant is widespread throughout the hot and drier regions of tropical Africa (FAO, 1998). Baobab tree has multi-purpose uses and every part of the plant is reported to be useful (Gebauer *et al*., 2002). The leaves, for instance, are used in the preparation of soup. Seeds are used as a thickening agent in soups, but they can be fermented and used as a flavouring agent, or roasted and eaten as snacks (Addy and Eteshola, 1998). The pulp is either sucked or made into a drink while the bark is used in making ropes (Igboeli *et al*., 1997). The different parts of the plant provide food, shelter, clothing and medicine as well as material for hunting and fishing (Sidibe and Williams, 2002).

Baobab tree provides income and employment to rural and urban households. For instance, about 92 445 of baobab leaf were produced in Burkina Faso in 1990, corresponding to a value of US$18.1 million. Biochemical analyses revealed that the leaves, the seeds and the pulp from baobab are rich in nutrients (Chadare *et al.,* 2009). *Adansonia digitata* is a large iconic tree indigenous to Africa where it is found in many countries. It is an emblematic, culturally important and physically majestic sub-tropical tree. In the past decade, it has attracted the interest of several pharmaceutical companies and researchers due to its various traditional uses (medicinal, nutritional and cosmetic).

The European Commission authorised the import of baobab fruit pulp as a novel food (Buchmann *et al.*, 2010) and it was approved in 2009 by the Food and Drug Administration as a food ingredient in the United States of America (Addy, 2009). Due to the high demand for commercial baobab products, this tree with its edible fruits needs to be conserved and treasured (Sanchez *et al*., 2010). Baobab products (e.g. fruits, seeds, leaves, bark) contribute to the livelihood of many populations in Africa as it is a source of food, fibre and medicine. Various plant parts (e.g. leaves, bark, fruit pulp), have traditionally been used for immuno-stimulant, anti-inflammatory, analgesic, insect repellent and pesticidal properties, in the treatment of diarrhea and dysentery in many African countries, and have been evaluated as a substitute for imported western drugs (El-Rawy *et al.*, 1997).

Trees as part of vegetation resources play an integral part in human and economic development of any nation, for the simple reason that they (trees) provide many basic needs for life such as medicine, food, fodder, timber, environmental protection and sustainability etc, based on this therefore, it could be concluded that trees touches almost all aspect of life. Trees of northern Nigeria, specifically, the semi-arid regions of the country were of great use especially to rural or peasant farmers whose life solely depends on agricultural productions. Therefore the objective of this paper is to assess socio-economic importance of *Adasonia digitata* (Baobab) in New-Bussa and Its environs, Niger state, Nigeria.

MATERIALS AND METHODS

Study Area: New Bussa is Headquarter of Borgu Local Government Area of Niger state, Nigeria. It is located on latitude $9^0 53^{'}$N and longitude $4^0 31^{'}$E, covering a land mass of about 16, 200km^2. It has a population of about one hundred and two thousand three hundred and seventy (102, 370) people as revealed by 2006 census (Ross, 2010).

Method of Data Collection: Data for the study was collected through pre-tested structured questionnaires. Data were collected from namely; New-bussa, Wawa, Nassarawa, Malale, Rafi, Kabe, Luma and Shagunu.

Study Population and Sample Size: The population for this study comprised of eight (8) communities. The sample of the research study was put at eighty (80) respondents, ten (10) for each community.

Sampling Technique: Eight communities were purposively selected and the questionnaire was administer accidentally to the respondents.

Data Analysis: Data obtained was analyzed using descriptive statistics where results was expressed in tables, frequency and percentage.

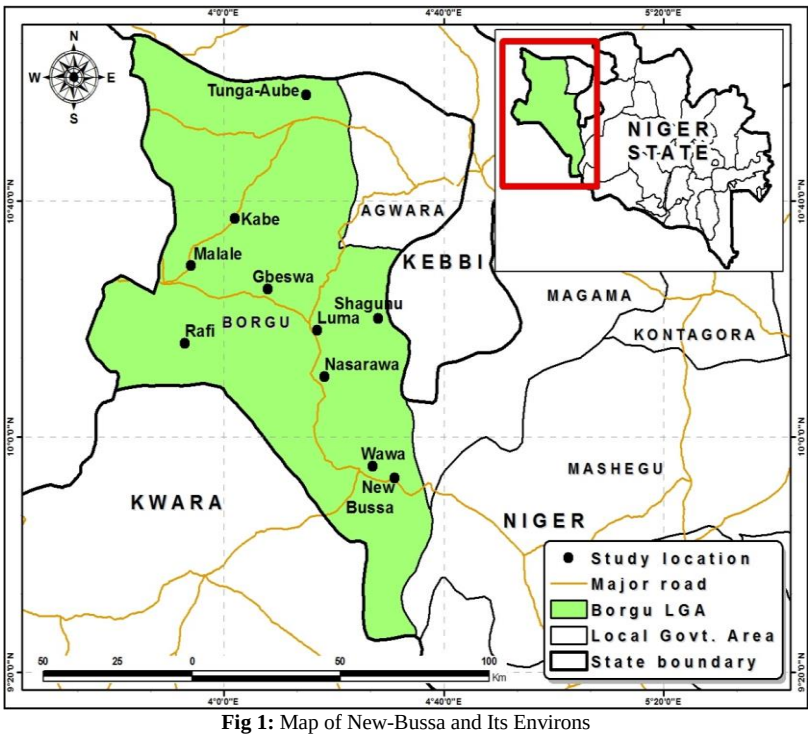

Fig 1: Map of New-Bussa and Its Environs

RESULT AND DISCUSSION

Data presented in Table 1 show the demographic characteristics of the respondents in the study area.

Table 1: Demographic Characteristic of The Respondents

Demographic	Variables	Frequency	Percentage (%)
Sex	Male	52	65.0
	Female	28	35.0
	Total	80	100.0
Age Group	20-25	21	26.3
	26-30	20	25.0
	31-35	25	31.2
	36 and Above	14	17.5
	Total	80	100.0
Major occupation	Farmer	32	40.0
	Craftsman/Business	18	22.5
	Hunter	5	6.3
	Civil servant	14	17.4
	Student	11	13.8
	Total	80	100.0
Marital status	Married	54	67.5
	Single	26	32.5
	Total	80	100.0
Religion	Christianity	33	41.2
	Islam	47	58.8
	Total	80	100.0
Level of education	No formal education	16	20.0
	Primary	27	33.7
	Secondary	33	41.3
	Tertiary	4	5.0
	Total	80	100.0

Source (Field survey, 2024).

It indicated that male had the highest percentage with 65.0% while female had the least percentage with 35.0%. It was also observed in the same table that age category of 31-35 had the highest percentage with 31.2% followed by age category of 20-25 with 26.3% while age category of 36 and above had the least with 17.5%. Majority (40.0%) of the respondents are farmers followed by 22.4% which are Craftsman/Business while the least was student with 13.8%.

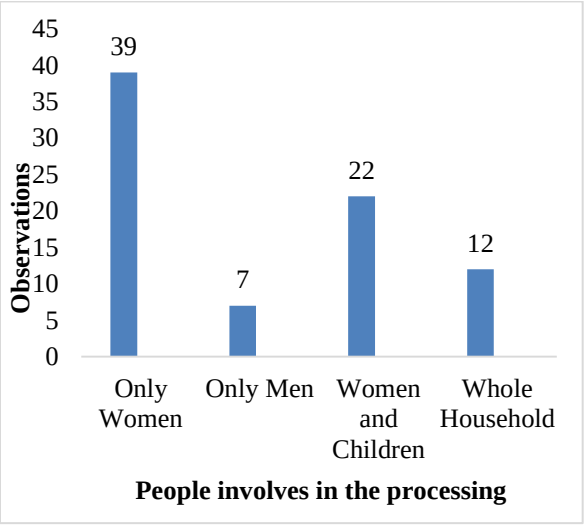

Fig 1: Those Involves in Processing

In the marital status it was observed that married had the highest percentage with 67.5% followed by single with 32.5%. 58.80% of the respondents are Islam while 41.2% are Christian. The table further revealed that 41.3% had secondary education, 33.7% of the respondents are primary school certificate followed by 20.0% who had no formal education while the least was tertiary with 5.0%.

People involves in the processing of *Adansonia digitata* are revealed in fig 1, it was observe that women scores the highest observation of 39, follows by women and children with 22 observation while men recorded the least with 7 observation.

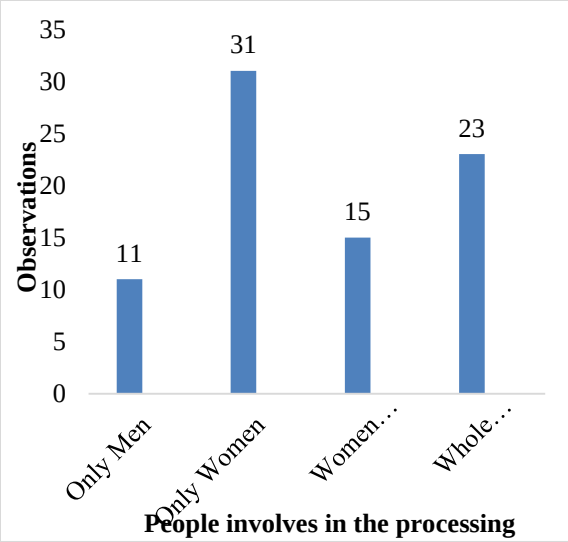

Fig 2: Marketing of *Adansonia digitata* in the Study Area

Table 2: Uses of *Adansonia digitata* in the Study Area

Kuka Part Used	USES	Mode of Preparation
Seed	Food	Eating raw
	Medicinal	Decoction
	Animal Feed	Raw seed
Leaves	Medicinal	Decoction, soaking in water or alcohol (Gin)
	Soup making	Grinding into powder form
Tree Bark	Medicinal	Decoction
Tree	Shade cover	Branches
	Timber making	Cutting into logs
Root	Medicinal	Decoction
Wood	Fuel wood	Cutting into logs
	Timber production	Cutting into logs

Source (Field survey, 2024).

Marketing of *Adansonia digitata* in the study area is revealed in fig 2, in which women and the whole household recorded the highest observation of 31 and 23 each, follows by women and children with 15 observation while men scores the least observation of 11. The frequently used part of the plants are revealed in table 3, leaves is the most frequent used parts with 72.5%, follows by bark with 12.5% while tree and wood are the least with 2.5% each.

Table 3: Frequently Used Part of *Adansonia digitata*

Parts	Frequency	Percentage (%)
Leaves	58	72.5
Root	8	10.0
Bark	10	12.5
Tree	2	2.5
Wood	2	2.5
Total	80	100.0

Source (Field survey, 2024).

The socio-economic importance of the plants is revealed in table 4, in which 53.8% of the respondents are selling the plants, also the estimated income shows that 53.8% makes ₦5000 and above from the sell and 97.5% sell them in processed form.

Table 4: Socio-economic Importance of *Adansonia Digitata*

Socio-economic	Variables	Frequency	(%)
Do you sell Kuka	Yes	43	53.8
	No	37	46.3
Estimated Income	₦100-1000	4	5.0
Reasons for the changes	₦1100-2000	11	13.8
	₦2100-5000	22	27.5
	₦5000 and Above	43	53.8
Mode of selling	Raw form	2	2.5
	Processed Form	78	97.5
Who fix Price of Kuka In the market	Trader	80	100.0
	Government	-	-
		80	100.0

Table 5: Perception of Respondents towards the Forest Area of their Communities

Perceptions	Variables	Frequency	(%)
Status of *Adansonia* in the Study Area	Decreasing	43	53.8
	Remain the same	24	30.0
	Increasing	13	16.3
Reasons for the changes	Human exploitation	42	52.5
	Infrastructure development	28	35.0
	Uncontrolled bush burning	10	12.5
	Total	80	100

Perception of respondents towards the status of Kuka are showed in table 5, in which 53.8% respondents agreed that kuka are decreasing and 30.0% indicated

that Kuka plants remains the same. The table also revealed the reasons for the changes in the study area, in which human exploitation recorded the highest (52.5%), followed by infrastructure development with 35.0% and the least was uncontrolled bush burning with 12.5%.

Most of the respondents had secondary education; this is expected of a rural setting. However there are more than to be done on the path of the park management and the government to support and create an enabling environment for education of the rural populace because the more the people are enlightened especially on conservation education, the more the cooperation and support expected from such individuals. Majority of the respondents are farmers which is the occupation associated with those living in the rural communities. Adelusi *et al.,* (2002) equally reported that farming is the cultural of people living around Kainji Lake National Park. *Adansonia digitata* tree has been recognized as one of the most important tree in the Savanna Adelusi *et al.,* (2002). Various parts (leaves, seeds, roots, bark etc) were of great use. This made the tree be used multi-purposely by the inhabitant of study area. Use as source of food is the major among all uses identified with the tree, for example one major well known use is the leaves of the tree is generally used for the preparation of soup used for eating locally made food of maize, corn and millet. This is in agreement with Tukur and Murtala, (2013) they reported that Wild food use is one of the most significant sources of food in the Dutsinma, Katsina state,because they are blessed with abundant verities of wild food such as *Leptadanialanci folia, Cassia hirtusa, Moringa oleifera* etc. As indicated in the table above usage as food is the major and most important of the tree. All the people interviewed indicated that three major parts of the tree (leaves, root and bark) are often used for various purposes. The leaves and the seeds are use in the preparation of soup and stew respectively. Tukur, (2010) reported that the fruit pulp is use in the preparation of gruel, soft drinks and local brewing. Because of its high economic values, baobab tree has not been used as animal feed unless on occasions, where a tree is identified with low quality and taste on its leaves or fruit pulp, then the leaves will be used to feed livestock. Medicinally, the tree has been identified with so many uses. This was testified by the respondents, for example the back is used in the treatment of fever, infections, toothache while the leaves is used in the treatment of diarrhea, cough, guinea worm sores etc. Fuelwood use is also identified with the tree but in low demand because of its low quality, it is only use when there is shortage of fuelwood. The tree has been recognized as one of the sources of fuel wood and mostly small branches are used (Mohammed, 2000).

Adansonia digitata has been reported to have high economic value in the area because most of the respondents sell them and realize 5000 and above from the selling due to that the trees has been receiving intensive management practices by the owners of the tree, couple with its high resistance to drought made it possible for the tree to live long for hundreds of years. The economic values attached to the tree attributes to its access on private basis, this is when the tree is found on residential areas (individual houses) or farmlands. At the same time the tree is owned communally when it is found on grazing lands and cattle tracks. Baobab tree is found on farmlands, settlements and inside National Park.

Conclusion: Adansonia digitata tree contributed immensely to the economic development of the study area through the provision of wild food, medicine and fuelwood. Wild food and medicinal were the major uses identified with baobab tree in the area. The economic importance attached to the tree has paved way for intensive care and management for the tree in the area. Tree resources, particularly the native (indigenous) were of great importance/value on the economic development of the savanna region of northern Nigeria. Therefore, they need to be given special attention so as to maintain their diversity and productivity.

Declaration of Conflict of Interest: The authors declare no conflict of interest

Data Availability: Data are available upon request from the corresponding author or any of the other authors.

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