PRINT ISSN 1119-8362
Electronic ISSN 2659-1502

Full-text Available Online at
https://www.ajol.info/index.php/jasem
https://www.bioline.org.br/ja

J. Appl. Sci. Environ. Manage.
Vol. 27 (10) 2361-2367 October 2023

Population Status and Age Structure of Baobab (*Adansonia digitata* L.) Tree in Zing Local Government Area of Taraba State, Nigeria

***BARAU, BW; GABUIN, TG; ANGYU, AE**

Department of Biological Sciences, Taraba State University, P. M. B. 1167, Jalingo, Taraba State, Nigeria

**Corresponding authors email: bilyaminubara@yahoo.co.uk; Tel: +2348036580773*
Co-Authors email: tgabuin70@gmail.com; alexangyu@gmail.com

ABSTRACT: The population status and age distribution of Baobab (*Adansonia digitata* L.) trees in Zing Local Government Area of Taraba State, Nigeria, were studied. Six (6) wards cutting across 25 villages were purposely selected, and baobab clusters were randomly sampled. Data on the number of stands, stand density (SD) per cluster, height, CBH, crown cover (CC), number of branches (NB), and number of flowers or fruits (NF) were recorded. A total of 851 baobab stands were recorded in an area covering 751,105.56 m^2. Zing AI, AII, and B recorded 18 clusters (35.25%) and a total stand of 370 (43.46%), while Dingding, Monkin, and Yakoko recorded 33 clusters (54.71%) and a total stand of 481 (56.92%). Baobab clusters were more aggregated in Dingding, Monkin, and Yakoko than in Zing AI, AII, and B. Mean CBH (4.23$\pm$0.26), mean CC (3.78$\pm$0.48), mean NB (5.70$\pm$1.65), mean NF (18.94$\pm$13.94), and area of clusters (416,135.91m^2) were highest in Zing AI, AII, and B, while total stand (481), SD (1.43E-3), and mean baobab height (13.94$\pm$1.63) were highest in Dingding, Monkin, and Yakoko, although not statistically significant ($p>0.05$). The results also revealed very low natural regeneration, as only 66 (7.76%) juveniles and 785 (92.24%) adults were recorded, with no single seedling sighted. We therefore, recommend that extensive research be conducted into unearthing the factors limiting natural regeneration and poor recruitment of young baobab trees.

DOI: https://dx.doi.org/10.4314/jasem.v27i10.30

Cite this paper as: BARAU, B. W; GABUIN, T. G; ANGYU, A. E. (2023). Population Status and Age Structure of Baobab (*Adansonia digitata* L.) Tree in Zing Local Government Area of Taraba State, Nigeria. *J. Appl. Sci. Environ. Manage.* 27 (10) 2361-2367

Received: 27 August 2023; Revised: 25 September 2023; Accepted: 04 October 2023 Published: 30 October 2023

Keywords: Angiosperm, Morphometric, Resources, Stand density, Tropical climate

Baobabs are tropical angiosperms that belong to the genius *Adansonia* and the subfamily Malvaceaea. They are native to the African continent and can grow to enormous sizes, living for up to above 2000 years or more (Parut *et al*., 2007; 2015 and 2020). They are utilized for a wide variety of products that serve for many different purposes ranging from food to fiber and medicine, thus providing an invaluable range of resources to many different people across these regions (Sidibe and Williams, 2002; Wickens and Lowe, 2008; and Venter and Witkowski, 2013). Darr *et al*. (2020) had outlined the potential of *A. digitata* in contributing to food security and households' well-being and recommended it as a species for both domestication and commercialization. However, the inability of this resource to be managed sustainably could endanger the species (Venter and Witkowski, 2013), bearing in mind its usefulness. Recent research has documented that populations of large trees are rapidly declining worldwide (Patrut *et al*., 2020), which could pose serious consequences for species, ecosystem services, and general ecosystem integrity and biodiversity. *A. digitata* is one of the most affected species (Wickens and Lowe, 2008), partly due to the increased pressure of human exploitation and drought conditions aggravated by changing climatic and environmental conditions (Lindenmayer *et al*., 2012). Venter and Witkowski (2013) have reported the poor regeneration or recruitment of wild baobab across the African landscape, and in one of their studies in South

**Corresponding authors email: bilyaminubara@yahoo.co.uk; Tel: +2348036580773*

Africa in 2010, no baobab seedling was observed. Lack of natural regeneration and the fast decline of aged ones, if left unattended to, could trigger a situation that may result in great loss of the species and imminent extinction.

Leach *et* al. (2011) reported that there is an increased reduction in the population of wild baobab across Africa. But lack of adequate data on the population structure of baobab, despite its numerous importance as reported by Lisao *et al*. (2018), and the recently allowed indiscriminate harvesting of *Pterocarpus erignaceous* (a.k.a. Madrid) in Taraba State could naturally lead to increased pressure on the biomass of other tree species, and *A. digitata*, with its wide range of importance (Darr *et al*., 2020), lack of natural regeneration (Venter and Witkowski, 2013), and the growing decline of large trees globally (Patrut *et al*., 2019), have established a problem worth studying. Furthermore, due to the paucity of information on this subject in the study area, this study was initiated to serve as a baseline for understanding the population distribution and age structure of wild baobabs in Zing LGA of Taraba State, Nigeria.

MATERIALS AND METHODS

Study Area: This study was conducted in Zing Local Government Area of Taraba State. Zing is the smallest LGA in the state in terms of land mass, occupying 867Km^2 of land. It is located between Latitude 8˚ 45′ and 9˚ 10′N, and Longitude 11˚35′ and 11˚50′E (Barau *et al*., 2015). It has a population of 127,362 individuals (NPC, 2006). Zing portrays a tropical climate, characterized by rainy and dry seasons. The dry season spans November – March while rainy season ranges between April – October, with a mean annual temperature of about 28˚C (Yusuf and Ray, 2011). Zing is blessed with vast agricultural land, diverse floral composition and many geographical features that adorn the whole area giving it a unique appearance. Indigenes engage in agricultural and logging activities to earn their living.

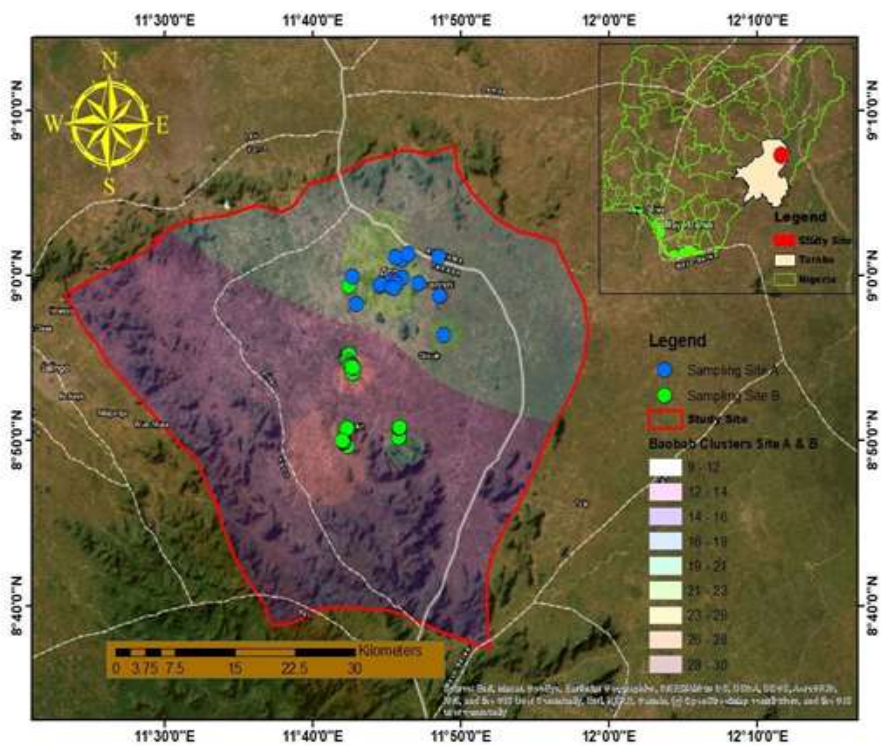

Fig. 1: Map of Study Area Showing Cluster Points of Baobabs

Sampling Procedures and Method of Data Collection: Areas with enormous Baobab plantation were purposely selected for this study using ground trothing to identify baobab clusters in six (6) out of the ten (10) wards of Zing LGA. Baobab clusters were randomly selected. Total count method was employed to enumerate individual baobab trees encountered and their GPS positioning were taken using the Garmin handheld eTrax 10 version 2.2 device. Morphometric parameters such as; stand density (SD), height (H), circumference at breast height (CBH), canopy cover (CC), number of branches (NB) and number of flowers/fruits (NF) were determined using tape and other related equipment.

The methods of Musyoki *et al*. (2022) for life stage classification was adopted for this studies, where tress with diameter at breast height (DBH) <1 meter height were considered as juveniles and tress with $\geq$ 1 meter DBH were considered adults.

Average baobab tree density was determined using the formula of Lisao *et al*. (2018) as:

$$\boldsymbol{BSD = \frac{number\ of\ indivdual\ trees}{Area\ of\ plot}}$$

Here BSD = Baobab Stem Diversity

The area of the cluster was determined using the equation;

$$\boldsymbol{A = \pi r^2}$$

Where $\boldsymbol{r}$ is the distance between the center of the cluster to the farthest tree in the same cluster

Percentage frequency class (% PC) was calculated using the formula;

$$\%\boldsymbol{PC} = \frac{\boldsymbol{No. of\ Cluster\ where\ life - form\ occurs}}{\boldsymbol{Total\ number\ of\ clusters\ studied}}\ \boldsymbol{x\ 100}$$

And the following scoring was adopted (Raunkier, 1934 and Braun-Blanquet, 1927); A = 0% – 20% (Rare); B = 21% – 40% (Seldom Present); C = 41% – 60% (Often Present); D = 61% – 80% (Mostly Present) and E = 81% - 100% (Constantly Present).

Statistical Analysis: Data generated for this study was normalized using the Kolmogorov-Smirnov test before ANOVA analysis.

RESULTS AND DISCUSSION

Population Abundance, Distribution and Conservation Status: This study surveyed a total of 51 baobab clusters, with a total stand population of 851 covering an area of 751,105.56 km^2.

Table 1: Populations and Conservation Status of Baobab life-forms in Zing LGA

LF	F	PF (%)	FC	CS
Juveniles	66	7.76	A	R
Adults	785	92.24	E	CP
Total	**851**	**100.00**		

LF = Life-form; F = Frequency; PF = Percentage Frequency, FC = Frequency Class CS = Conservation Status; A = 0 – 20% (Rare); B = 21 – 40% (Seldom Present); C= 41 = 60% (Often Present); D = 61 – 80% (Mostly Present); E = 81 – 100% (Constantly Present)

The population showed that there were more adult baobab 785 (92.24%) than juvenile baobab 66 (7.76%), and no seedling of baobab was recorded for this study. Study site A recorded 370 while study site B recorded 581 trees.

From the results obtained, it can be seen that in the first study site, there were no juvenile baobabs (Fig. 2a), but 370 (100.00%) adult baobabs were observed and recorded. In the second study site, 66 (13.72%) juvenile baobabs were recorded, compared to 415 (86.28%) adult baobabs (Fig. 1b). Overall, the number of juvenile baobabs recorded in Zing for this study was 66 (7.76%), while 785 (92.24%) adults were recorded, placing them in the Raunkiers' frequency classes of A (0–20%) and E (81–100%) for juvenile and adults respectively. Braun-Blanquet presence revealed that juveniles are rare (R), and adults are constantly present (CP), signaling lack of regeneration of baobab, which could be attributed to anthropogenic disturbances of the baobab populations that include harvesting of baobab pods with all their contents (pulp, fiber, and seeds), thereby preventing seed availability for inoculation in the soil medium that could germinate and develop into juvenile baobabs.

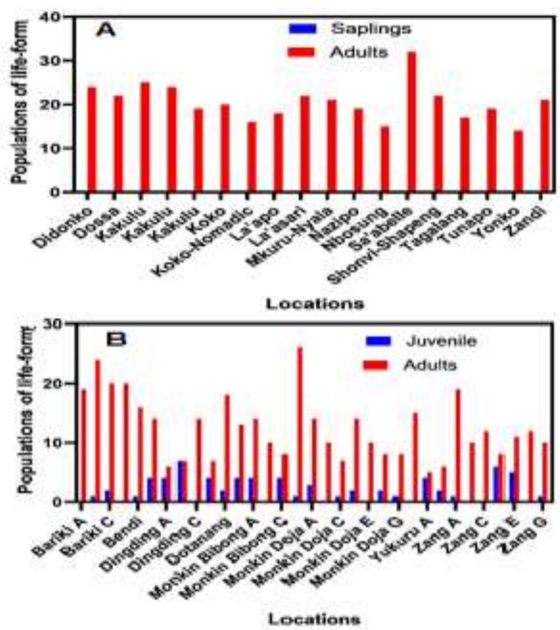

Fig. 2: A bar chart of life-forms occurrence in the study area

This goes to show that most of the baobab recorded are adults, and if no conservative action is taken, they could gradually die out and one day become locally extinct in the study area. Uneven densities of baobab abundance and lack of younger generation in the populations was reported in South Africa (Venter and Witkowski, 2010), Malawi (Sanchez, 2011), Namibia (Lisao *et* al., 2018) and Munyevbu *et al*., 2018), Benin (Marriette *et al*., 2019), Kenya (Fischer *et al*., 2020 and Musyoki *et al*., 2022), and Tanzania (Msalilwa *et al*., 2020).

Comparison between Morphometric Characteristics: From the results (Table 2), it can be deduced that the baobab clusters studied had a total mean stand density (SD) of 1.13E-3, a mean height of 12.53 ± 1.64m, a mean circumference at breast height (CBH) of 3.46 ± 0.81m, a canopy cover (CC) of 2.95 ± 1.37m, a mean branch number (NB) of 5.25 ± 1.37 per stand, and an average flower number (NF) of 18.21 ± 19.30 per stand. In site A (Zing AI, AII, and B), the results showed a total of 370 baobab stands (43.48%), spread across 18 (35.29%) clusters that are sparsely distributed, covering an area of approximately 416,135.91 m^2 (55.40%). It has a mean SD of 8.79E-4, a mean height of 11.40 ± 0.92 m, a mean CBH of 4.23 ± 0.26 m, a mean CC of 3.78 ± 0.48 m, a mean NB of 5.70 ± 1.65 m per stand, and a mean NF of 18.94 ± 13.94 m per stand. In site B (Dingding, Monkin, and Yakoko), the study recorded a total of 481 (56.52%) spread across 33 (54.71) clusters, covering an approximate area of 334,969.65 m^2 (44.60%). The results showed a mean SD of 1.43E-3, a mean height of 13.15 ± 1.63m, a mean CBH of 3.04 ± 0.68m, a mean CC of 2.50 ± 0.63m, a mean NB of 5.01 ± 1.14 per stand, and a mean NF of 17.81 ± 21.95 per stand

Table 2: Baobab Cluster Characteristics in of Zing LGA of Taraba State

Location	GPS	NS	SD	Av. Height (m)	Av. CBH (m)	Av. CC (m)	Av. NB	Av. NF	Area of Cluster (m^2)
Site A (Zing AI, AII and B)									
Didonko	N8°59'35.814" E11°45'13.332"	24.00	1.19E-3	12.14 ± 0.82	4.54 ± 0.69	3.95 ± 0.58	5.79 ± 1.53	50.38 ± 24.57	20,108.80
Dossa	N8°59'43.314" E11°45'18.756"	22.00	8.30E-4	12.55 ± 1.53	4.39 ± 0.78	3.92 ± 0.81	6.00 ± 1.96	36.59 ± 14.99	26,593.89
Kakulu Bariki	N8°59'22.951" E11°44'29.967"	25.00	1.00E-3	10.49 ± 1.99	3.94 ± 1.46	3.87 ± 1.85	8.44 ± 5.35	34.68 ± 52.86	24,887.78
Kakulu C	N8°59'30.981" E11°44'37.523"	24.00	1.13E-3	10.42 ± 1.91	4.30 ± 1.19	4.89 ± 1.86	8.33 ± 3.53	20.45 ± 17.33	21,126.81
Kakulu Taraba	N8°59'20.795" E11°45'19.295"	19.00	4.99E-4	10.31 ± 2.03	4.24 ± 0.92	4.11 ± 2.01	8.53 ± 5.12	13.84 ± 16.13	38,018.20
Koko	N8°58'20.312" E11°42'59.246"	20.00	1.34E-3	10.97 ± 1.42	4.45 ± 1.15	4.05 ± 1.23	4.35 ± 1.66	12.20 ± 11.39	14,959.06
Koko – Nomadic	N9°1'00.825" E11°45'58.214"	16.00	7.96E-4	10.69 ± 2.26	3.51 ± 0.93	2.67 ± 0.85	3.19 ± 1.17	1.56 ± 1.86	20,108.80
La'apo	N8°59'32.934" E11°47'7.626"	18.00	9.42E-4	11.44 ± 1.14	4.50 ± 0.80	3.24 ± 1.20	4.00 ± 1.68	12.89 ± 11.56	19,115.93
La'asari	N8°56'24.721" E11°48'51.626"	22.00	1.27E-3	11.50 ± 1.45	4.10 ± 0.75	3.59 ± 0.57	3.64 ± 1.00	3.18 ± 3.20	17,205.59
Mkuru-Nyala	N8°59'55.360" E11°45'62.411"	21.00	5.84E-4	10.80 ± 0.99	4.39 ± 0.75	4.39 ± 1.31	6.67 ± 2.59	11.24 ± 8.66	35,972.76
Nazipo	N8°65'20.823" E11°48'31.215"	19.00	7.30E-4	11.34 ± 1.07	4.61 ± 0.70	3.88 ± 0.73	6.00 ± 2.16	26.42 ± 14.99	26,018.90
Nbosung	N8°58'51.108" E11°48'34.962"	15.00	4.67E-4	11.47 ± 1.12	4.30 ± 0.57	3.45 ± 1.15	4.13 ± 1.30	19.07 ± 19.93	32,051.54
Sa'belle	N8°59'40.568" E11°45'36.276"	32.00	1.11E-3	11.46 ± 1.96	3.95 ± 1.08	3.76 ± 0.85	7.00 ± 2.94	11.41 ± 8.38	28,956.67
Shonvi-Shapeng	N9°1'10.764" E11°45'35.652"	22.00	1.35E-3	14.21 ± 1.92	4.28 ± 1.02	3.68 ± 0.79	5.36 ± 1.92	11.09 ± 10.58	16,288.13
Tagalang	N9°1'20.542" E11°46'27.412"	17.00	1.77E-3	10.94 ± 1.43	4.04 ± 1.06	3.67 ± 1.10	5.82 ± 1.67	9.59 ± 11.95	9,504.55
Tunapo	N8°59'29.646" E11°45'40.056"	19.00	1.30E-3	11.67 ± 1.13	4.18 ±0.75	3.82 ± 0.76	5.63 ± 1.54	41.82 ± 21.32	14,528.61
Yonko	N8°59'18.791" E11°45'29.733"	14.00	6.63E-4	11.09 ± 1.35	4.09 ± 1.09	3.15 ± 0.69	3.79 ± 1.31	7.57 ± 7.48	21,126.81
Zandi Gida	N8°59'56.542" E11°42'41.167"	21.00	7.10E-4	11.70 ± 1.54	4.30 ± 1.15	3.91 ± 1.31	5.81 ± 3.78	17.00 ± 42.31	29,563.08
		370.0	8.79E-4	11.40 ± 0.92	4.23 ± 0.26	3.78 ± 0.48	5.70 ± 1.65	18.94 ± 13.69	416,135.91
Site B (Dingding, Monkin and Yakoko)									
Bariki A	N8°50'20.898" E11°45'50.820"	19.00	6.67E-3	15.94 ± 2.72	3.93 ± 1.62	3.73 ± 2.19	6.11 ± 3.60	2.63 ± 5.80	2,846.68
Bariki B	N8°50'18.09" E11°45'50.928"	25.00	1.25E-2	15.00 ± 2.47	3.04 ± 1.01	3.33 ± 1.57	5.60 ± 2.22	1.24 ± 4.10	2,007.98
Bariki C	N8°50'15.576" E11°45'50.484"	22.00	1.51E-3	14.32 ± 2.28	3.19 ± 1.37	2.91 ± 1.77	3.86 ± 1.88	0.46 ± 2.19	14,528.61
Bariki D	N8°50'12.312" E11°45'50.952"	20.00	1.29E-2	15.05 ± 2.19	3.17 ± 0.68	3.46 ± 1.50	5.30 ± 1.89	0.10 ± 0.45	1,548.50

Bendi	N8˚55’14.064” E11˚42’25.416”	17.00	2.99E-3	14.06 ± 3.27	3.35 ± 1.16	2.42 ± 1.47	4.18 ± 1.88	0.18 ± 0.49	5,675.24
Bendokin	N8˚54’53.892” E11˚42’22.404”	18.00	5.32E-3	12.90 ± 3.04	3.31 ± 1.48	1.94 ± 0.94	5.78 ± 2.69	5.28 ± 11.25	3,382.35
Dingding A	N8˚50’44.772” E11˚45’50.496”	10.00	1.86E-2	13.89 ± 2.89	2.04 ± 0.61	2.52 ± 1.70	4.11 ± 1.27	0.00	483.11
Dingding B	N8˚50’47.856” E11˚45’49.602”	14.00	9,21E-3	12.79 ± 3.17	1.89 ± 1.04	2.03 ± 1.12	3.79 ± 2.01	8.29 ± 20.65	1,520.73
Dingding C	N8˚50’48.144” E11˚45’51.582”	14.00	6.39E-3	14.14 ± 2.07	3.05 ± 0.86	3.19 ± 1.59	5.43 ± 2.24	18.92 ± 35.86	2,189.85
Dingding D	N8˚50’48.36” E11˚45’53.72”	11.00	1.93E-3	13.09 ± 2.66	2.01 ± 0.87	2.82 ± 1.47	4.64 ± 2.11	9.45 ± 15.55	5,701.98
Dotanang	N8˚54’43.296” E11˚42’31.44”	20.00	4.91E-3	14.00 ± 3.04	3.64 ± 1.52	3.96 ± 2.24	5.15 ± 2.30	21.85 ± 24.11	4,072.03
Kopah	N8˚54’34.344” E11˚42’29.592”	17.00	4.42E-3	13.24 ± 3.46	2.99 ± 1.61	2.21 ± 1.26	6.82 ± 3.84	39.71 ± 67.97	3,848.95
Monkin Bibon A	N8˚50’38.598” E11˚42’11.196”	18.00	4.76E-3	15.35 ± 2.76	2.93 ± 1.60	2.19 ± 1.01	5.89 ± 2.87	42.56 ± 91.78	3,783.25
Monkin Bibon B	N8˚50’36.084” E11˚42’14.52”	10.00	2.75E-3	14.70 ± 3.20	2.88 ± 0.83	2.54 ± 0.91	5.70 ± 3.53	49.30 ± 81.39	3,632.15
Monkin Bibon C	N8˚50’41.526” E11˚42’16.758”	12.00	8.77E-4	9.97 ± 1.35	3.11 ± 1.89	3.49 ± 1.92	4.75 ± 2.38	52.00 ± 91.29	13,686.55
Monkin Bibon D	N8˚50’44.49” E11˚42’20.094”	27.00	1.37E-3	14.74 ± 2.55	4.41 ± 1.57	3.40 ± 1.73	7.41 ± 4.49	16.70 ± 34.22	19,609.22
Monkin Doja A	N8˚49’51.348” E11˚42’10.02”	17.00	1.04E-3	14.29 ± 2.85	2.99 ± 1.10	2.25 ± 1.22	4.12 ± 1.22	0.24 ± 0.75	16,288.13
Monkin Doja B	N8˚49’42.066” E11˚42’18.804”	10.00	4.85E-4	14.02 ± 2.60	2.80 ± 0.86	2.19 ± 0.97	3.17 ± 1.57	0.30 ± 0.67	20,614.66
Monkin Doja C	N8˚49’54.456” E11˚42’6.834”	8.00	1.38E-3	13.49 ± 3.30	2.11 ± 0.81	1.87 ± 0.65	4.00 ± 1.31	0.13 ± 0.35	5,809.56
Monkin Doja D	N8˚49’55.92” E11˚42’5.586”	16.00	1.10E-3	10.87 ± 1.91	2.64 ± 0.97	1.65 ± 0.75	3.56 ± 1.46	0.44 ± 1.50	14,528.61
Monkin Doja E	N8˚49’58.53” E11˚42’4.938”	10.00	8.84E-4	14.20 ± 2.66	2.46 ± 0.52	1.75 ± 0.74	4.10 ± 1.66	2.20 ± 6.96	11,311.20
Monkin Doja F	N8˚49’59.718” E11˚42’3.72”	10.00	4.97E-4	11.70 ± 2.71	2.95 ± 1.41	2.07 ± 0.91	4.50 ± 1.72	1.60 ± 2.55	20,108.80
Monkin Doja G	N8˚50’1.014” E11˚42’0.93”	9.00	1.27E-3	12.67 ± 1.66	2.64 ± 0.96	2.06 ± 1.21	3.78 ± 1.56	0.67 ± 1.66	7,089.14
Yogan Medika	N8˚5’56.37” E11˚42’27.396”	15.00	5.31E-3	14.59 ± 2.27	3.69 ± 1.30	2.71 ± 1.46	5.40 ± 1.68	33.40 ± 63.50	2,827.30
Yukuru A	N8˚54’34.66” E11˚42’33.12”	9.00	5.41E-3	12.33 ± 2.29	3.10 ± 2.81	2.56 ± 1.80	6.22 ± 5.38	34.89 ± 99.86	1,662.12
Yukuru B	N8˚54’33.552” E11˚42’40.092”	8.00	1.11E-3	12.88 ± 2.75	2.20 ± 0.78	1.73 ± 0.65	5.25 ± 1.83	0.13 ± 0.35	7,239.17
Zang A	N8˚54’30.3” E11˚42’40.6”	20.00	1.19E-3	14.14 ± 2.36	3.60 ± 1.35	1.82 ± 0.89	8.40 ± 5.29	11.90 ± 15.44	16,743.72
Zang B	N8˚54’26.868” E11˚42’40.104”	10.00	5.37E-4	11.92 ± 2.89	3.67 ± 0.98	1.93 ± 0.86	4.60 ± 1.90	28.20 ± 22.47	18,628.92
Zang C	N8˚54’24.936” E11˚42’35.712”	12.00	6.12E-4	10.89 ± 2.65	3.77 ± 1.71	2.22 ± 0.94	4.83 ± 1.75	11.25 ± 29.32	19,609.22
Zang D	N8˚54’18.948” E11˚42’37.746”	14.00	1.16E-3	10.68 ± 2.67	1.52 ± 0.47	2.64 ± 1.18	5.00 ± 2.83	15.29 ± 23.95	12,077.85
Zang E	N8˚54’7.046” E11˚42’43.068”	16.00	8.37E-4	10.80 ± 2.03	3.05 ± 1.87	1.96 ± 1.01	4.94 ± 3.43	87.25 ± 126.91	19,115.93
Zang F	N8˚54’25.482” E11˚42’46.218”	12.00	3.67E-4	11.12 ± 2.11	4.11 ± 1.02	2.71 ± 1.05	4.75 ± 1.60	63.50 ± 53.11	32,689.34
Zang G	N8˚54’28.662” E11˚42’41.634”	11.00	5.47E-4	10.19 ± 1.24	3.98 ± 1.42	2.37 ± 1.77	4.18 ± 1.78	27.82 ± 30.32	20,108.80
		481	1.43E-3	13.15 ± 1.63	3.04 ± 0.68	2.50 ± 0.63	5.01 ± 1.14	17.81 ± 21.95	334,969.65
	Total	851	1.13E-3	12.53± 1.64	3.46 ± 0.81	2.95 ± 0.84	5.25 ± 1.37	18.21 ± 19.30	751,105.56

NS = Number of Stand; SD = Stand Density; CBH = Circumference at Breast Height; CC = Canopy Cover; NB = Number of Branches; NF = Number of Flowers/Fruits

Morphometric characters studied showed that site A (Zing AI, AII, and B) had higher values of mean CBH (4.23 ± 0.26), mean CC (3.78 ± 0.48), mean NB (5.70 ± 1.65), mean NF (18.94 ± 13.94), and area of clusters (416,135.91m), while site B (Dingding, Monkin, and Yakoko) recorded higher values in population (481), SD (1.43E-3), and mean height (13.15 ± 1.63). Although there was no significant difference in the values of the morphometric characteristics across the two (2) study sites (P >0.05), The differences observed might not be unrelated to soil properties, topography, or anthropogenic disturbances, which could have favored one morphometric character over the other.

Mashapa *et al*. (2014) reported that there was no significant difference in morphometric characteristics of baobab in Gonarezhou National Park in Zimbabwe. Lisao *et al*. (2018) also reported that there was no significant difference in the morphometric characteristics of baobab populations in Namibia. Musyoki *et al*. (2022) had reported that babobab populations in Kenya showed significant difference in some morphometric characteristics of density and fruit production but not in height, DBH, and crown cover.

Conclusion: This study assessed population and age structure of baobab in Zing. Widely spread baobabs were found in the study area, with scattered clusters around Site A but more aggregated around Site B. Morphometric characteristics of clusters showed no significant differences, but natural regeneration was observed as only few juvenile baobabs were recorded; seedlings were absent, and majority of the population are adult trees. There is need for more comprehensive research into the factors responsible for lack of regeneration and poor recruitment of new and younger stands.

Acknowledgement: This research was sponsored by the Tertiary Education Fund (TETFUND) through the Institutional Based Researches (IBR) Grant. Our deepest appreciation goes to the Kpanti Zing for not only acknowledging the importance of the study, but allowing us access to his lands, and helping to create publicity to his village heads. We also wish to acknowledge our research and field assistants for their doggedness in helping us collect quality data during the study. To all other persons that contributed in one way or the other, thank you.

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