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### EVALUATING WOMEN'S PARTICIPATION IN LAND ADMINISTRATION SERVICE DELIVERY IN GOMBE METROPOLIS, GOMBE STATE, NIGERIA

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### **Abstract**

Land management and administration service delivery are crucial aspects of a country's economic and social development. The study evaluates women's participation in land administration service delivery in the Gombe Metropolis. A questionnaire was used to obtain data from the target population of 190 as the sample size. Out of which (59%) were beneficiaries, (16%) service providers and (25%) professionals in the study area. Descriptive statistics was used to summarized and describe the data obtained. The research findings reveal a low level of women's participation in land administration service delivery, with a mean of 3.0 on a five-point Likert scale. Women have and own landed properties ' with a mean of 3.70, followed by 'involvement of women in buying and selling of landed properties have greatly empowered their social and economic life with a multiplier effect on the society ' with a mean of 3.66, and lastly 'women have free access to all services in the processes of land registration and estimated cost to register a property title. Gender inequality has the highest average with the percentage of 32.63%, this is because women are considered less or are given fewer opportunities when it comes to engaging in land-related issues. The findings further revealed; gender inequality 32.63%, social norms and attitudes 28.4%, lack of training of women 15.78%, inadequate of representation and voice for women and religious factor 9.47% respectively. The findings also, indicated that the key challenges faced by women; are gender imbalance at 43.15%, and the least social problem at 6.3%. The research concluded that there is generally low participation of women in land administration service delivery and therefore, the need to give women more opportunities to favorably participate in land administration service delivery. The research recommends the promotion of gender equality in land administration service delivery and more educational campaigns for women's involvement in studying land-related courses.

### Keywords: Land professionals, Service providers, Gombe metropolis, Gender inequality

### 1. Introduction

Land management and administration are crucial aspects of a country's economic and social development, as they play a vital role in resource allocation, property rights, and environmentally sustainability. In Nigeria, land management and administration have traditionally been dominated by men, with limited participation from women. This gender imbalance has often resulted in the exclusion of women from decision-making

processes and the unequal distribution of land rights and resources.

The study of women's participation in land management and administration in Gombe Metropolis, Nigeria is essential for understanding the challenges opportunities faced by women in this crucial sector. Gombe Metropolis is the capital city of Gombe state, located in the northeastern region of Nigeria, and is representative of the brooder issues faced by women in land management and administration across the





country. Numerous studies have explored the role of women in land management and administration in Nigeria. Akanji and Olutayo (2018) examined the participation of women in Oyo state. Nigeria and found that cultural norms barriers and patriarchal structures were significant barriers to women's involvement.

Oladakun and Adekunle (2020) investigated the challenges faced by women in accessing and controlling land resources in Osun State, Nigeria, and reported the need for legal and reforms policy to address gender inequalities. Also, Onwuka et al., (2021) conducted a study in Enugu state, Nigeria, the findings revealed that women's limited participation in land management and administration was related to their low levels of education, financial resources, and social status. Conversely, Idrisa et al., (2019) pointed out that in some parts of northern Nigeria, including Gombe state, women have relatively higher levels of land ownership and decision-making power

### 2. Study Area

Gombe State is located between the latitudes 9° 30 and 11° 15'N, and longitudes 10° 30 and 11° 15'E in the northern part of the country. It is bordered by Yobe State to the north, Bauchi State to the west, Taraba State to the south, Borno and Adamawa states to the southeast. The state has a land area of

compared to other regions. These studies underscore the complex and diverse nature of women's involvement in land management and administration across different regions of Nigeria, highlighting the need for context-specific studies and interventions to address the challenges and promote gender equity in this critical sector.

It is against this background that the present study seeks to evaluate the participation of women in land administration service delivery in Gombe Metropolis, Gombe state, Nigeria. The aim of the study was achieved through the following specific objectives, which are to: examine the level of women participation in land administration service delivery in the study area, evaluate the factors influencing women participation in land administration service delivery in metropolis, and identify challenges faced by women engaged in land administration service delivery in Gombe metropolis.

16,760 km² and estimated farming families of 145,983. It is located within the Sudan Savannah zone. There are eleven (11) local Government areas namely: Akko, Balanga, Billiri, Dukku, Funakaye, Gombe, Kwami, Kaltungo, Nafada, Shongom and Yamaltu Deba.





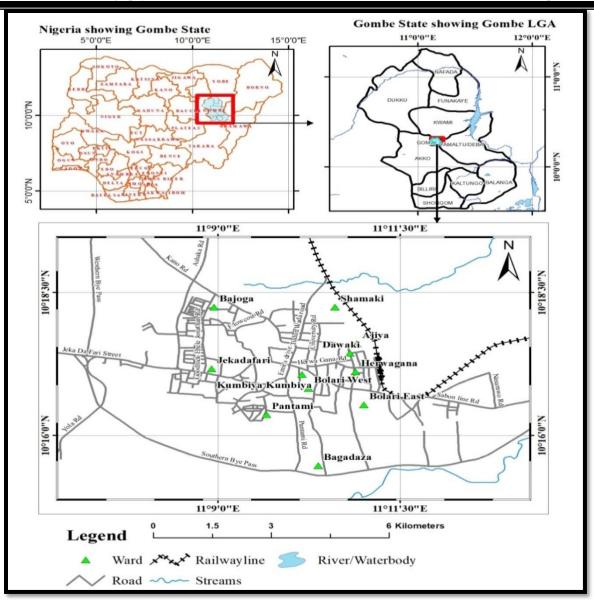


Figure 1: Study Area Gombe Metropolis Source; Ministry of Lands Gombe State, (2023)

The climate of Gombe metropolis is part of the Tropical Continental Climate characterized by distinctive rainy and dry seasons. The wet season start around April to October with an average of annual rainfall of 650 – 1000 mm, while dry season commences around November to April with the coldest months in January and February. Relative humidity 94% in August and drops to less than 10% during the harmattan period (Gombe State Diary, 2018). Gombe

metropolis has a tropical continental type of climate (Aw) based on Koppen's classification scheme. It is characterized by strong rainfall seasonality with distinct wet and dry season Oladipo (1995) cited in Abashiya (2014). Rainfall is concentrated between the month of July and September with a single maximum in August and mean annual of 850 mm. The length of the rainy season is decreasing due to the late onset and early cessation of rainfall in the





ecological zone (Wanah and Mbaya, 2011). The mean maximum monthly temperature is about 35°C and has a minimum monthly temperature of about 18°C with relative humidity of about 95% in August.

The study area forms part of the sedimentary Upper Benue trough which is structurally controlled by pre-existing Basement Complex rock consisting of granitic rocks overlain by the sequence of folded Cretaceous sedimentary rocks. These basement complex rocks are mainly finecoarse grained porphyriotic older granites, gnesis, migmatite, gabbros, and diorite (Obaje, 2009). The bedrock mainly consists of Gombe sandstone of Cretaceous age, covered by tertiary and quaternary deposits (Gumnior, 2008). The geology of Gombe metropolis is largely at the foot of Akko escarpment in the west of the town. The highest part of the build-up areas of the town is located at the western about 1850ft (610.5m) above sea level and lowest parts at the BCGA areas, of about 1250ft (412.5m) above sea level. The low grounds areas are the BCGA, Yelan-Gurza area, and higher grounds located in Tumfure and Liji Hills, (Kalthoet al. 2013). Many Rivers truncate

### 3. Materials and Methods

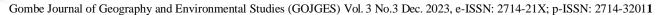
### 3.1 Sampling Size and Sampling Techniques

Primary data were collected using a structured questionnaire administered to women land professionals, service providers and beneficiaries in the Gombe metropolis. The secondary data were obtained from; related journals, published and unpublished articles. A snowball method of sampling was adopted in the study, also known as chain referral sampling which is considered a type of purposive sampling. In this method, participants or informants with who contact has already been made use their social networks to refer the researcher to other people who could potentially

the older part of the town with all flowing eastward from their source at the Akko Escarpment. The rivers and streams, some of which are tributaries with active gully heads, have truncated the town, particularly at the Northeast and southeast parts, creating east striations on the landscape, (Kaltho et al., 2013). Gully erosion situation in Gombe metropolis is receiving attention from Agro-Climatic Resilience in Landscapes ACReSAL through which drainages have been constructed at the G.S.U-Malam Inna-kagarawal areas have been fully controlled, while those of F.C.E-London-Maidoruwa-Arawa-Malam Inna, the drainage construction work are ongoing other areas in the metropolis have been surveyed for the control of the gullies within the Gombe metropolis. The soils of Gombe metropolis are tropical ferruginous type and generally low to medium in most of the fertility parameters (Mbaya, Ibrahim and Yusuf, 2019). The vegetation of Gombe metropolis is within Sudan/Guinea savannah type; this is characterized by shrubs, scattered trees and different species of grasses (Abashiya et al., 2017).

participate in or contribute to the study. Snowball is often used to find and recruit a "hidden population", that is, groups not easily accessible to researchers through other sampling strategies.

The survey was designed to target the estimated population sample size of 200 participants however, 10 copies of the questionnaire were lost. Out of which 120 (59%) questionnaires were administered to the beneficiaries, 48 (25%) were administered to Land professionals and 30 (16%) to service providers in the study area at the time of the survey see Table 1. The questionnaire was designed to consist of four (4) sections, namely: sections A:



demographic characteristics of the respondents, section B: level of women's participation in land administration service delivery, section C: factors influencing

women participation, and section D: the challenges faced by women in land administration service delivery respectively.

Table 1: Questionnaire administered and returned based on categories in the study area

Respondents	Questionnaire administered	Questionnaire Returned	Percentage (%)
Professionals	50	48	25
Service providers	30	30	16
Beneficiaries	120	112	59
Total	200	190	100

Source: Field Survey, (2023).

### 4. Results and Discussion

The categories and socio-demographic characteristics of respondent women in the Gombe metropolis are presented in Tables 2

and 3 respectively. This includes land professionals, speculators and the public, years of experience in land management and administration and years of stay in the study area.

Table 2: Women categories, years of experience and residence in Gombe metropolis (n=190)

Variables	Categories	Frequency	Percentage (%)
Categories of respondents	Land Professional	48	25.0
	Service providers	30	16.0
	Beneficiaries	112	59.0
Experiences in land administration	Below 5	12	6.3
	6 - 10	70	36.8
	11 - 14	60	31.5
	15 - 20	44	23.1
	21 +	4	2.1
Years of stay in Gombe Metropolis	Less than 5	16	8.4
	6 - 10	24	12.6
	11 - 14	18	9.4
	15 - 20	22	11.5
	21 - 24	36	18.9
	25 - 30	34	17.8
	30+	40	21.0

Source: Authors' Field Survey, (2023).





Table 2, presents the women respondents' categories in the study area. The analysis of the result shows that the public has the highest percentage of 112 (59%), women land professionals 48 (25%) and women land speculators 30 (16%) respectively. The higher number respondents in the public implies or indicates that there is a limited number of that are engaged management and administration i.e. women land professionals and speculators in the Gombe metropolis. Hence, a lot more need done encourage be to women participation in land related issue.

Women's years of experience in land management and administration in the study area is presented in Table 2, for both the professionals, land speculators and the public were considered with a view to ascertaining the level of understanding of the current development in land management and policies in the study area. The result indicates that between 6-10 years 70 (36.8%), 11-14 years 60 (31.5%), 15-20

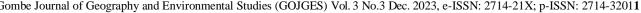
years (23.1%), and the least 21+ years 4 (2.1%) years of experience respectively. This implies that the respondents have been involved in land administration management in the study area for not less than six years and a maximum period of 20 years in the Gombe metropolis which is enough to understand and be familiar with history of trends and the women participation and development about land management and administration in Gombe metropolis.

Also. Table 3 shows that most of the women who participated in this study have been staying in the Gombe metropolis for a period of between 11–30+ years, with those 30+ having (21%) as the highest. These implies that good numbers of respondents have been in the study area for a long period, good enough to understand, be knowledgeable, and familiar with the history of the development in land management and administration and can have a say on the participation of women in land management and administration in Gombe metropolis.

Table 3: Socio-demographic characteristics of women respondents in the study area (n=190)

Variables	Categories	Frequency	Percentage (%)
Age	18 - 24	10	5.2
	25 - 34	40	21.2
	35 – 44	82	43.1
	45 +	58	30.5
Marital status	Married	56	29.5
	Single	90	47.4
	Divorced	18	9.5
	Widow/widower	26	13.7
Educational status	Arabic/Islamic	10	5.3





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	Adult education	4	2.1
	Primary education	22	11.6
	Secondary education	54	28.4
	Tertiary education	100	52.6
Main occupation	Civil servant	84	44.2
	Farmer	22	11.6
	Business/trader	40	21.1
	Carpentry	0	0
	Black Smith	0	0
	Student	16	8.4
	Others	28	14.7
Income status	Very low	12	6.3
	Low	28	16.7
	Medium	110	57.9
	High	34	17.9
	Very high	6	3.1

Source: Field Survey (2023).

From Table 3, it shows theagegroup status distribution of respondents.35 - 44 (years) 82(43.1%) being the highest percentage,25-34 (years) 40 (21.2%) being the next highest, and 45+ (years) 58 (30.1%) i.e.180 (94.4%) of the respondents were between the ages group of 25 - 45 + and only 10 (5.6%) were below the age group of 24 years. This indicate that active age group were involved which suggest their tendency and maturity to provide the needed information about the woman participation in land administration and management in the study area.

The marital status of the Respondents is presented in Table 3. The result reveals that most of the respondents are married (47%). This implies that most of the women who own land or participate in land management and administration in Gombe metropolis are married women who are also responsible parents.

The educational status of the respondents are presented in Table 3, the result shows that the majority of the respondents have attended and obtained tertiary education certificates with (52%) from both the women land Professional and women land speculators, and the general public





respectively. The educational status of the respondents in the study area reflects the characteristics of urban dwellers where a lot of opportunities are available for the girl-child to be educated hence, the attainment of higher levels of education by the women folks and with their level of education reliable data and information could be obtained.

Table 3shows the occupation of the respondents where the result indicates that civil servants 44 (42%), business/traders 40 (21.05)), and farmers 22 (11.58%)

### 4.1 Women's Participation in Land Administration Service Delivery in Gombe Metropolis

A total of nine (9) statements were used to gauge the respondents on women's participation in land management and

respectively. Civil servants dominant followed by business and traders then the women farmers. This implies that a good percentage of the women involved in the study were well educated, had trade/ business and were farmers meaning they were productive. The high percentage of civil servants in this study reflects their interest and desire given out their views on participation women of administration and management, an indication of experienced women that are knowledgeable on the current governmental policies and development in the study area. administration in the Gombe metropolis. Out of which women disagreed with 6 (67 %) and agreed with only statements 3 (33%) in Table 4. This implies that there is low participation of women land in administration service delivery in the metropolis

. Table 4: Level of Women Participation in Land Administration Services Delivery (n=190)

S/N	Perceptions	$\bar{\mathbf{X}}$	S. D	Decision:
1	High level of Women participation in land management and administration	2.78	1.66	Disagree
2	Good number of Women have and own landed properties	3.70	1.92	Agree
3	Most women have sound knowledge of land management and administration	2.48	1.57	Disagree
4	Women have free access to all services in the processes of land registration and estimated cost to register a property title	3.58	1.89	Agree
5	Good numbers of women are involved in committees related to land management and administration this has help in checking and resolving conflict between the land owners.	2.58	1.60	Disagree
6	Women are actively involved in land transactions	2.93	1.71	Disagree
7	Women are given key positions in land management and administration in Gombe metropolis	2.42	1.55	Disagree
8	Women facilitate the functioning of land allocation advisory committee in each local government area	2.72	1.64	Disagree
9	The involvement of women in the buying and selling of landed properties have greatly empowered their social and economic life with a multiplier effect on society.	3.66	1.91	Agree

**Source: Field survey, (2023).**( $\overline{X} = 3.0$  and above agree and below 3.0 = disagree)





Table 4presents the general level of participation of the respondents. The result shows that there is a generally high level of agreement in women's participation in land management and administration, with an average mean of 3.0 meaning agreed. It is clear from the analysis that the highest agreement is derived from the 'Good number of women have and owned landed properties ' with a mean of 3.70, followed by 'involvement of women in buying and selling of landed properties have greatly empowered their social and economic life with multiplier effect on the society ' with a mean of 3.66, and lastly 'women have free access to all services in the processes of land registration and estimated cost to register a property title 'with a mean of 3.58. While the lowest level of women's disagreement on the participation of women in land management and administration is fact that they strongly disagree with the statement 'women are given key positions in land

## 4.2 Factors Influencing Women's Participation in Land Administration Service Delivery in Gombe Metropolis

The study identified five factors that are influencing women's participation in land management and administration in the study management and administration in Gombe metropolis.

This implies that though there's a high level of disagreement on the level of participation of women in land management and administration in the Gombe metropolis, there is a low level of women's participation in land management and administration in the Gombe metropolis by the General public respectively. Hence, more needs to be done to enable women to participate actively in land management and administration. This agrees with the findings of Oshikoya et al., (2022) who conducted research on women's land ownership and decision-making in Oyo southwest, Nigeria. The findings indicated a low level of women's participation in land management and administration in the study area. Women are the most disadvantaged due to several issues of inequalities which are enshrined in discriminating laws, customs and practices.

area, which includes; gender inequality, adequate training, inadequate representation and voice for women, social norms and attitude and religious factor respectively, (Adegoke, Adegoke, and Oyedele., 2016).

Table5: Factors Influencing women's participation in Land Administration Service Delivery (n=190)

S/N	Factors	Frequency	Percentage (%)	Ranking
1.	Gender inequality	62	32.6	1 <sup>st</sup>
2.	Social Norms and Attitude	54	28.4	$2^{\rm nd}$
3.	Lack of training of women in land management and administration	30	15.8	3 <sup>rd</sup>
.4	Lack of representation and voice for women	26	13.7	4 <sup>th</sup>
5.	Religious factors	18	9.5	5 <sup>th</sup>

**Source: Field Survey (2023)** 





The analysis of the result in Table 5, shows that gender inequality has the highest with the percentage of 62(32.6%) which ranked 1<sup>st</sup>, this is because women are not considered or are given inadequate opportunities when compared to their men folks when it comes to engaging women in appointments and committee related land management and administration issues. Followed by social norms and attitude54 (28.4%) ranked 2<sup>nd</sup>, in some cultures it is taboo for women to be engaged in land-related issues due to their beliefs. Another factor is inadequate training of women in land management and

### **4.3** Challenges Faced by Women in Land Administration Service Delivery

The study identified five main challenges being faced by women to land management

administration 30 (15.8%) was ranked 3<sup>rd</sup>, and inadequate representation and voice for women and religious factors26 (13.7) the least as 4<sup>th</sup>.these factors have played key roles in the inadequate participation of in land management women administration in the study area. Factors contributing to gender inequality in land access and land tenure security in sub-Saharan Africa arethat in Africa, western promoted modernity an ontological inequality between women and men in landrelated issues.

and administration in the study area which include; lack of awareness, cultural barriers, and gender imbalance, lack of loans and credits and social problems.

Table 6: Perceived challenges faced by women in land management and administration (n=190)

S/N	Challenges	Frequency	Percentage (%)	Ranking of challenges
1	Gender imbalance	82	43.15	1 <sup>st</sup>
2	Lack of awareness	38	20	$2^{\rm nd}$
3	Cultural Barriers	30	15.78	$3^{ m rd}$
4	Lack of loans and credits	28	14.73	4 <sup>th</sup>
5	Social problems	12	6.31	5 <sup>th</sup>

Source: Field Work (2023)

From Table 6 it is evident that women are faced with challenges in land management and administration. The result indicates that most of the challenges women faced included Gender imbalance with percentage of 43.15%, this is because men are known for their dominant nature and making women feel less and not giving them opportunities this has become a challenge for women to participate in the land. The next is lack of awareness with an average of 20%, this is because women are not aware and are exposed to land-related issues. And, cultural Barriers (15.78%), lack of loans and credits to women (14.73%), and social problems (6.31%).

This analysis shows that the highest in percentage of women's Disruption is; lack of awareness with percentage of (36.8%) this is because you cannot Excel in an area you don't know much about. Only a few numbers of women have access and are aware of land-related issues, and due to this it has disrupted the effectiveness of women's participation. The next is Gender inequality (30.52%), this implies women are not regarded most a times in land related issues. We also have, a lack of financial resources (16.84%), Family background (9.47 %), some families don't regard women as people that should own land properties of their own, Legal rights (9.47%), some rights don't





favour women to allow them to have free

### 5. Conclusion

The study has identified several factors affecting women's land access, some general, some context dependent, Organizational, economic and socio-cultural barriers. It became apparent that, while it is important to pursue gender equality in the land legal and regulatory framework, there is also a need to understand the context in which gender inequality exists and the **6.0 Recommendations** 

Based on the study, the following recommendations emerged:

- i. The state government should increase women's representation in state and local government structures and committee.
- ii. Government and NGOs should provide training supportfor women to participate in land related issues and administration service delivery.
- iii. Government and NGOs should promote gender equality;"Promoting gender equality" in land management administration and means working to ensure that both men and women have equal access to and decision-making power over land and resources. This can be achieved through a variety of strategies, such as ensuring equal representation of women in decision-making bodies.

access and participate.

different needs and the challenges women face with regards to land administration service delivery. These aspects are important to be considered when land reforms are implemented, at all levels of land management and administration. This study is not exhaustive, but it presented current perspectives relevant for illustrating the main constraints women face when dealing with land administration service delivery.

- providing women with equal access to land and resources, and considering the specific needs and interests of women when making decisions.
- iv. Government and NGOs should more in encouraging educational campaigns for more women to be involved in land management and administration and courses as this will increase women's knowledge understanding of their rights and opportunities. They may cover a wide range of topics, including land tenure systems, laws and related policies to land management and administration, women's access to land and resources, and how to participate in decision-making processes.
- v. NGOs should encourage and support women's campaigns to empower women to advocate for their rights and needs about land and to participate actively in the decisions that affect them.





### **REFERENCES**

Abashiya, M. (2014). Assessment of flood risk in Gombe metropolis, Gombe state, Nigeria. A PhD thesis submitted to the Department of Geography and management

Environmental Management, faculty of Physical Science, Ahmadu Bello University, Zaria, Kaduna state, Nigeria.

Abashiya, M., Abaje, I.B., Igusi, E.O., Bello, A.L., Sawa, B.A., Amos, B.B., & Musa, I. (2017).Rainfall Characteristics and Occurrence of flood in Gombe Metropolis, Nigeria. Ethiopian Journal of Environmental Studies & Management 10 (1)44-54, 2017. ISSN: 1998-0507 doi.http//dx.doi.org/104314/ejesm.v1 0i1.5. January 20,2017.

Adebola, A.M. (2011) Gender issues in land: implications for development housing in Nigeria In: Laryea, S., Leiringer, R. and Hughes, W. (Eds) Procs West Africa Built Environment Research (WABER) Conference, 19-21 July 2011, Accra, Ghana, 509-516.

Adegoke, B.F., Adegoke, O.J. and Oyedele, J.B. (2016).Factors influencing women participation in home ownership in Nigeria. Property Management, 34(1), 6778:

<a href="http://dx.doi.org/10.1108/PM">http://dx.doi.org/10.1108/PM</a>
-12-2014-0053.

Akanja, B.D., &Olutayo, A.O. (2018). Women's participation in

land administration in Oyo State, Nigeria.Geoforum, 88, 119-123.http//doi.org/10.1016/j.ge oforum, 201711.018.

Kaltho, J.B., Umar, Y.A., Adam, M. and Abbas, A.A. (2013).Gombe Master Plan, 2030.By Savannah Landev Konsult Nigeria Limited, Gombe State. In: *Journal of Social Sciences and Public Policy*. Volume 10, Number 3. Pp. 1 – 32.

Mbaya, L.A., Abu, G.O., Makadi, Y.C., & Umar, D.M. (2019). Effect of Urbanization on Land Use Cover in Gombe Land Metropolis, Global Journal of Human Social Science (B) Geography, Geosciences. Environmental Science & Disaster Management. Volume 19 Issue 2, Version 1.0, 2019. Pp 58-63.

Yahaya, I. and Umar, Y. A. (2019). An Overview of Climate Change in Gombe State. In Mbaya L.A., Wanah, B.B., Dan, Y., Ahmad, B.Y. (eds). Gombe: People, Environment and Development. Nonimood Ventures Jimet-Yola, Adamawa state, Nigeria. ISBN978-976-413-6.

Idrisa, Y.L., Ogunbameru, B.O., Ibrahim, A.A., & Bawa, D.B. (2019). Factor influencing land ownership and management among women in Gombe state, Nigeria. Journal of Agricultural Extension, 23 (1), 154-164.







- http://dx.doi.org/10.4314/joe.v 231.15.
- Obaje, N, G. (2009). Geology and Mineral Resources of Nigeria. Springer Publisher, Dordrecht Heidelberg.
- Oladuku. T.O., & Adekunle, B.O. (2020).Challenges of women's access to and control of land resources in Osun state, Nigeria. Land Use Policy, 99,104833. http://doi.org/10.1016/j.landu sepol.2020.104833.
- Onwuka, I.O., Okonkwo, O.C., Onwuka, S.U. (2021).**Factors** influencing women's participation land in management and administration Enugu in State, Nigeria. Land Use Policy, 105. 105421. https://doi.org/10.1016/j.land usepol.2021.105421
- Wanah, B.B. and Mbaya, A.L. (2011). Adoption to Climate change: Vulnerability Assessment for Gombe State In Iliya, M.A, Abdulrahim, M.A, Dankani, I.M, and Opponkumi, A. (Eds.), Department Geography, Usman Danfodiyo Universty, Sokoto, Sokoto State, Nigeria. Funsho printing works, Sokoto.