



The Phenomenon of (Yakubu, et al. 2026) DOI: <https://doi.org/10.59479/jiaheri.v2i1.134>

The Phenomenon of Land Degradation and Its Effects on Agricultural Production in Jibia, Kaita and Mashi Local Government Areas of Katsina State

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Abstract

The phenomenon of land degradation has become a major challenge to areas where there is continuous use of the land for crop cultivation particularly in developing countries. The objectives of the study are to assess the occurrence of land degradation and to explain the impacts of the land degradation, and explain the impacts of the land degradation to farmers and the environment. The study employed the use of multiple data gathering methods on the form of field observation administration of questionnaire on farmers, key informant interview with government officials and focus group discussion with relevant stakeholders. Those involved in the questionnaire administration and key informant interviews were purposively sampled to provide the required data for the study. Descriptive statistical analyses were used to analyses the data inform of percentages, tabulations and pictorial evidence. The results show that land degradation is experienced by farmers in the three local government areas namely Jibia, Kaita and Mashi in Northern Katsina State. The indicators of land degradation are many which have been highlighted in the paper. The result further reveals that the impacts of land degradation on agricultural production in the three Local government areas many which include reduce crop yield and poor harvest limited pasture for animals among others. The communities and the government have adopted a number of measures to tackle the land degradation but it still persists. Recommendations were offered towards tackling land degradation in the study areas.

Keywords: Land degradation, effects, agricultural production, Katsina State.

Introduction

Land degradation is the persistent decrease in the productivity of vegetation and soil (Maigari 2002; Stocking 2004). A degraded land is that “which due to natural processes or human activity is no longer able to sustain properly an economic function and/or the original natural ecological function” (Lestrelin and Giordano 2007).

Land degradation is one of the most severe and widespread environmental problems globally but its impact is more severe in dry lands which represent a total of 47.62% of the land surface or 39.7%, excluding true climatic desert (UNEP 1992; Le Houerou 1996; Dregne, 2000). In dry land areas, land degradation processes which have more severe impact on land productivity include, deforestation, water erosion, wind erosion salinization, alkalization and soil compaction (UNEP 1992; Dregne 2000; Olofin 2006). These degradation processes take place in three interlocking stages with one stage leading to another. These are soil physical degradation, chemical degradation, and biological degradation (Maigari 2002).



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Globally, about 200,000 square kilometers of productive land is reduced by desertification every year to the point of yielding nothing. Some 15% of the land surfaces of the earth are subject to various degrees of degradations and 32% of drylands are undergoing processes of land degradation (Abulhussain 2000). Since the first United Nations (UN) Desertification Conference of 1977 in Nairobi, the 1992 UN Conference on Environment and Development which held in Rio de Janeiro and the 1994 Inter governmental Convention to Combat Desertification held in Paris, science has played a leading role in defining land degradation as well as determining its extent and assessing its impact and offered variety of alternatives to remedy the problem (Stringer and Reed 2007).

Ever since mankind started agriculture, land degradation has been the single largest threat to soil and agricultural productivity, and this has remained the major hindrance to meeting food security especially in the marginal ecosystems and has remained so till date (Sullivan, 2004). This is so because removal of the topsoil by any means has many disastrous effects on the productive capacity of the soil as well as on ecological wellbeing. Doran and Parkin (1994), captioned the impact of land degradation on agriculture and in particular nutritional need in their popular maxim that, “the thin layer of soil covering the earth’s surface represents the difference between survival and extinction for most terrestrial life”.

Land degradation has negative connotations that imply the loss of something of value within the environmental economic system (Gretton and Salma, 1997). The lost value may be related to the productivity of the land for agriculture, the environment as a host to naturally occurring species of Flora and Fauna or to the environment as a place for other human activities such as mining, secondary industries, human habitation and waste assimilation.

Land degradation is the loss of potential utility of features or organisms which can’t be replaced. All countries, rich or poor, arid or humid, cool or tropical, are suffered by land degradation. Land degradation is a serious problem in which the value of bio-physical environment is affected by a combination of human made process acting upon the land also environmental degradation is the gradual destruction or reduction of the quality and quantity of human activity, animal or natural means, Example: water cause, soil erosion, wind etc. It is considered to be an important topic of 21th century due to the implications land degradation has up on agronomic productivity, the environment and its effects on food security (Taffa, 2008).

Northern Katsina State (i.e. six local government Areas bordering Niger Republic) is an area believed to be threaten seriously by land degradation (Effeh 2000). Thus, studying the extent and features of land degradation in these affected areas and how it affects the overall agricultural production of the local communities living in the area is very timely. Considering to how the problem of malnutrition affects societal functions. Thus, this proposed study could provide new opportunity in cross-disciplinary approach to understanding the dynamics of public health, by studying land degradation and climate change and examine how it affects the agricultural production and the nutritional requirements of the dryland regions of Katsina State.

The findings from this research could help to understand the extent of malnutrition that could be linked to land degradation and how intervention projects could be directed toward solving the problem. The need to understand the linkages between land degradation and agricultural production, and to examine the extent to which land degradation add up to malnutrition or otherwise in the study area, constitute the major problem of this study and what prompted the researcher to conduct the research.



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The findings of this research could be a useful starting point in addressing the nexus between environmental degradation and agricultural production and how it adds up to the malnutrition problem especially in areas identified as prone and or vulnerable to land degradation in northern Katsina State, which is an area increasingly threaten by land degradation. The study will also provide insight on how to approach environmental problems with rural communities as a center of concern. It will also strengthen government commitment toward sustainable development, particularly for sustainable agriculture and community efforts towards enhancing and balancing nutritional requirements.

The main aim of this study is to assess land degradation and its impact on agricultural production in the study area which will be achieved through the following objectives

1. To determine whether farmers in the study area experience land degradation
2. To identify the indicators of land degradation in the study area.
3. To ascertain the impact of land degradation on the agricultural activities in the area.
4. To determine the impact of land degradation on nutrition in the area
5. To examine the strategies adopted by communities to tackle land degradation..

Description of the Study Areas

This study will be conducted in Kaita, Jibia, and Mashi LGAs of Katsina State, Nigeria. The study area covers Jibia and Kaita Local Government Areas. These Local Government Areas are located adjacent to each other. They are located approximately between latitudes 12⁰45N and 13⁰,15N and longitudes 7⁰,00E and 8⁰,30E. The area is located in the extreme north western part of Katsina State as shown in Figure 1.

The climate is seasonally wet and dry. It is dominated by two air masses. These are the rain bearing south-westerly winds and the cold, dry and dusty north-easterly winds, locally known as the “harmattan.” At different times of the year, when one or the other winds prevails, the area experiences either rainfall or dry harmattan depending on the advance or retreat of the other (Nyong and Kanarogou, 1999). The vegetation here is Sudan savannah type. It is composed of trees scattered over an expanse of grassland. The trees are usually characterized by broad canopies e.g the baobab with large trunk. It is taller and larger than the others species or types found here. It also includes various types of acacias (Nilofica, Albida and Seyal). Others are Neem (Azadrita indica) etc and various types of scattered shrubs such as plastima Cassia Sigrana, occasionally forming woodlot. Most of these trees are xylophytic in nature i.e the ability to resist drought conditions; this is through having long roots, leathery leaves and tiny leaves, as well as development of spines to reduce excessive transpiration. The drought resistant plants do not shed their leaves, but other trees shed their leaves during the dry season. The blades of the grasses wither and dry off during the dry season. Their underground stems develop new roots during wet season. Grasses in the area hardly grows up to 1m at maturity. Pasture in the area is very low and grazing fields are diminishing due to intensive cultivation by the growing population and shrubs usually dry off in the dry season leaving the soil bare, man-made plantations forms a significant portion of vegetation in this area. Shelter belts woodlots and wind breaks are all found in the area (Shittu, 1999).

The study area falls within the Chad formation which is made up of sedimentary rocks of Cretaceous origin. The relief of the area is of the lower Chad plains. The relative relief falls within the average of about 15 to 20 meters, the landform in the study area is sandy plains where great

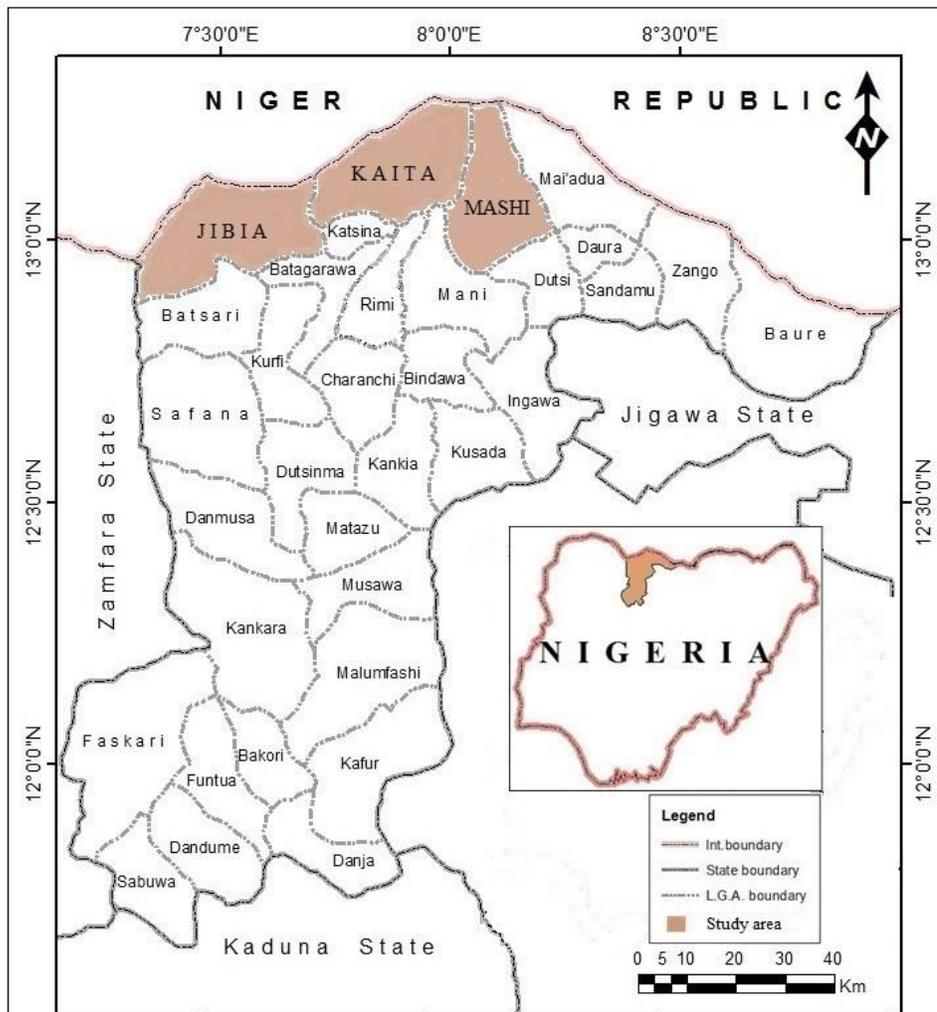


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sand sheets occupy most of the area. However, it is not uncommon to find deposits of sand dunes of varying degrees especially when you move towards Daddara Kusa, Kaga villages in Jibia local government Area and Dankama, Duma, Jiki Gisgerewa villages in Kaita Local government area northwards. The dunes are formed from the deposition of eroded materials carried along by strong winds from across the Sahara Desert, especially during the dry season, (Shittu, 1999).

The soil consists of mostly unconsolidated sediments which are predominantly sandy, silt to sandy loam, it is brown or reddish brown in nature. This type of soil is formed from the deposition of eroded materials over sedimentary formation. They are less acidic and well drained, with fairly low clay content. Jibia Local Government area has a population of 167,435 people, while Kaita Local Government Area has a population of 182,405 (National Population Commission 2006). The people of Jibia and Kaita Local Government Areas are predominantly Hausa and Fulani living together, Majority of the inhabitants of the areas are farmers, (Subsistence). They also keep animals; almost every family keeps grazing animals like cattle, Goats, and sheep. These are usually moved by herders from one place to the other in search of pastures especially during the dry season. Some owners of these animals move then to areas south of Katsina state especially the middle belt region of the country during the dry season in search of past.

Mashi is a Local Government Area in Katsina State, Nigeria, sharing a border with the Republic of Niger. Its headquarters are in the town of Mashi in the southwest of the area at 12°59'00"N 7°57'00"E. It has an area of 905 km² and a population of 173,134 at the 2006 census.





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Methodology

The study will employ multiple data gathering methods (Field observation, questionnaire and interview and focus group discussion among others) This could be used to adequately addressed all the 5 main objectives of the study. and adequately explain the issues under investigation. The multiple-method was considered in this study to reduce the possibility of personal biases by not depending on a single method of data collection which went a long way to improve accuracy and validity of our data. Primary data here involves those collected from classified document in government ministries or organizations, interviews, questionnaire and personal observation which were not yet processed or analyzed. Meanwhile, the Secondary sources of data were those that will be collected from different relevant studies in books, journals and newspapers but which were also found useful as they focused on theoretical and empirical policy implementation issues and were effectively used in the literature in order to substantiate issues for analysis of policies and their implementation in this work.

The justification and advantage of the use of secondary data for this study is the opportunity they offered us to hear other people's views, comments and opinions on matters relating to the assessment of land degradation and its impact on the nutritional need in semi-arid northern Katsina State, in particular. The various perspectives of scholars on issues relating to these studies were therefore helpful in triangulating the different sources of data for this research.

In order to carry out this research work, the survey method of research design will be adopted. A survey describes a method as a process of gathering information or data from a population for intensive study and analysis. This method was adopted by researchers because it is simple, saves time and it gives room for better description of the data and the respondents.

The population of the study is made up of all the farmers and the local people of the Semi-Arid Northern Katsina State comprising of Daura, Zango and Mai'adua local government areas. The emphasis here will be to examine major agricultural system, nature of land degradation and its various features, as well as to delineate areas identified with extreme land degradation scenario. Maps will be produced, where the whole study areas will be categories as severe, moderate or mild land degradation depending on the scale of degradation used.

In addition, interview and focus group discussion will be conducted with respondents in the selected study villages to assess their nutritional status and to examine the extent of land degradation impacts on them. In each village, the number of the interview to be conducted will be relative to the size of the population of each location. In which case, systematic random sampling will be used to select the respondents.

As mentioned earlier, questionnaires/interview/FGD where the case may be, will be used by the researcher and his field assistants to collect data for the study. The number of the samples



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to be collected will be proportional to the size of each village to be selected. Prior to the main survey, pilot study will be conducted so that adjustment will be made on the survey tools where necessary.

To analyze the data so to be collected, the researcher will used simple percentage scores, inferential statistics and frequency distribution. The content of each questionnaire/Interview and or FGD will be summarized in tabular form and each LGAs data will be summarized separately and later combined together and run multiple correlations to examine the relationship among the respondents' response to nutritional adjustments in the mist of land degradation stress.

Results

The democratic characteristics of the respondents can be seen on the table below :

Table 4.1: The demographic characteristic of the respondents can be seen on the table 1 below:

S/No	Characteristics	Frequency	Percentage
1.	Gender		
	Male	250	83.33%
	Female	50	16.66%
2.	Age range		
	20-29 years	40	13.33%
	30 – 39 years	100	33.33%
	40 – 49 years	80	26.66%
	50 – 59 years	60	20.00%
	60 years and above	20	06.66%
3.	Marital Status		
	Married	270	90.00%
	Divorced	30	18.00%
4.	Number of Wives		
	One	80	27.33%
	Two	150	50.00%
	Three	30	16.66%
	Four	20	06.66%
5.	Number of Children		
	1-4	80	27.33%
	5-9	120	40.00%
	10-14	70	23.33%
	15-19	30	10.00%
6.	Educational Status		
	Quranic education	80	27.33%
	Primary school education	90	30.00%
	Secondary school education	100	33.33%
	Tertiary education	30	10.00%
7.	Occupational Status		



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	Rainy season farming	120	40.00%
	Dry season farming	60	20.00%
	Both rainy and dry season farming	70	23.33%
	Cattle rearing	50	16.66%
8.	Other occupations:		
	Civil service	80	27.33%
	Business and trading	60	20.00%
	Artisans and craftsmen	60	20.00%
	Politics	40	13.33%
	Fishing activities	20	13.33%
	None	60	06.66%
9.	Local Government Area:		
	Jibia	100	33.33%
	Kaita	100	33.33%
	Mashi	100	33.33%

Source: Data analysis (2025).

The demographic characteristics of the respondents on table 4.1 show that majority of the respondents (83.33%) are males while a minority (16.66%) are females. This arises as results of the culture of the people of the study area were males are bread-winners who are engaging more in agricultural activities than the females. The age range of the respondents show that majority of the respondents (33.33%) are within the age range of 40-49 years of age. This age bracket through middle age is still a productive segment of the population within the study areas that are engaging in agricultural production. In terms of marital status, majority of the respondents (90.00%) are married while minority (10.00%) that comprise females are divorced. The number wives of the respondents showed that majority (50.00%) are married to two wives which is showing an element of additional responsibility in feeding the wives. The number of children of the respondents showed that majority (40.00%) had 5-9 children who depend on them for their food needs. In terms of educational status, majority of the respondents (30.00%) had only secondary school education. This is typical with most of the LGAs of Katsina State especially as those who were the target population reside in rural areas.

The occupational status of the respondents showed that majority of the respondents (40.00%) is engaging in both rainy season farming activities. This means that they are more concerned about the problem of land degradation since they are engaging in farming activities. It is important to mention here that many people are presently engaging into farming activities in the study areas in view of the high cost of foodstuffs that started following the removal of fuel subsidy by President Bola Tinubu in May, 2023. The respondents engage in other economic activities in other to augment their income in view of the economic difficulties arising from the fuel subsidy removal and this regard 27.33% are engaged in civil service.

In terms of residential status of respondents a total of one hundred (100) respondents each are sampled from the three LGAs. This means that the three LGAs are equally considered and represented in the study. The difference is only in the location of the settlements (towns and villages), where the respondents are living. In Jibia LGA, the villages are Daddar, Kadobe and



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Kukar Babangida. In Kaita LGA, the villages are Kaita, Yandaki and Yanhoho. In Mashi LGA, the areas include Doguru, Birnin Kuka and Mashi town.

Experience of Land Degradation

All the respondents to the questionnaire (100%) have indicated that land degradation is experienced in their LGA. This is especially in view of the extreme northern location of the LGAs close to neighboring country of Niger Republic. According to Alo et al (1998) for a long time since 1998, the northern-most LGAs are the driest with a mean annual rainfall of 635-762mm for Jibia, Kaita and Mashi LGAs.

In addition, the interview conducted with Katsina State Ministry of Environment, Director of Climate Change, KTARDA Officials and those of the State Ministry of Agriculture have also acknowledge the existence of the problem of land degradation in the LGAs sampled for the study.

A recent study by Usman (2018) and Ladan, Badaru & Matawalle (2024) has confirmed the challenges of land degradation in the northern Nigeria and indeed Katsina State. Besides this, several studies have shown the existence of knowledge of land degradation among the farmers in the seven LGAs. One of these studies is the study by Abdulrahid (2018) showed that farmers are aware and experiencing of soil degradation in semi-arid areas of Katsina State such as Jibia Kaita and Mashi LGAs.

Indicators of Land Degradation in Semi-Arid Northern Katsina State

The indicators of land degradation are the signs and symptoms that are seen and experienced by the farmers that confirm the problem of land degradation in the semi-arid northern part of Katsina.

Table 4.2 indicates that the major factors which are obtained from the questionnaires administered for the study and the descriptive analysis of the data collected.

Table 4.2: Major indicators of land degradation in semi-arid northern Katsina State

S/No	Indicators of Land Degradation	Frequency	Percentage
1.	Declining soil fertility	80	26.66%
2.	Depletion of vegetation cover	68	22.66%
3.	Soil erosion by wind and water	62	20.66%
4.	Encroachment into farmlands and communal grazing land	50	16.66%
5.	Desertification of the land/soil	40	13.33%
	TOTAL	300	100.00%

Source: Data Analysis (2025).

Impacts of Land Degradation on Agricultural Production in Semi-Arid Northern Katsina State

Land degradation has serious negative impacts on agricultural production in the semi-arid northern Katsina State. This occurs as agricultural production activities are based on the land and its degradation impacts farming/crop cultivation and animal grazing as the animals depend on pasture grass as their source of food. The impacts can be seen on the table 4.3.

Table 4.3: Impacts of Land Degradation in Semi-Arid Northern Katsina State

S/No	Impacts of Land Degradation	Frequency	Percentage
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1	Reduced crop yield and poor harvest	91	26.00%
2	Limited pastures for animals	80	22.85%
3	Loss of arable land	68	19.42%
4	Communal clashes	63	18.00%
5	Dryness of land and water bodies	48	13.71%

Source: Data Analysis (2025).



Plate 1: An area of land depleted of its vegetation cover at the outskirts of Daddara Village, Jibia LGA.

Source: Field Work 2024.





The Phenomenon of (Yakubu, et al. 2026) DOI: <https://doi.org/10.59479/jiaheri.v2i1.134>

Plate 2: Indicator of desertification as desert like sand covers an irrigated farmland at Yanhoho, Kaita LGA.

Source: Field Work 2024

Measures Adopted by the Communities to Tackle Land Degradation

Communities in the study area have adopted a number of measures aimed at tackling the threat posed by land degradation and also augment their nutritional needs. The measures are adopted and or invented in the face of inadequate support from the land degradation.

The measures outlined and highlighted below are based on the questionnaire administration on the farmers in the study area. The farmers response to the question: ‘What measures are adopted in your community towards tackling land degradation?’ are highlighted below:

- i. In Daddara village of Jibia LGA, the farmers and other people have to grow to replace the vegetation that is depleted. In addition, the trees planted are expected to provide pasture for domestic animals while the fruit trees such as Mango and cashew will improve the nutritional situation in the area.
- ii. The people of Yanhoho village in Kaita LGA have been sinking boreholes in Fadama or flood plain area to supply water for irrigation that they use to cultivate vegetables and other food crops such as wheat, maize and rice.
- iii. The farmers of Kaita LGA in general have been adopting a number of indigenous techniques of land degradation management with a view to tackling the issue. The indigenous techniques include application of synthetic fertilizer, locally made manure application and land husbandry where by degraded lands are protected from further degradation and nurtured back to productive use (Barda, 2019 and Ladan, 2004).
- iv. Irrigation farmers in Mashi LGA at the Abu Alawa dam have been engaging themselves and their children into various economic activities such as commercial motorcycling, cross border trading to generate money that they can use to buy petrol to power their water pumping machines. This is in order to ensure proper watering of the crops that are planted on the farms.
- v. Raining season farmers in Mashi Local Government have sought for divine intervention by engaging in prayers for rainfall in view of the late and erratic rainfall experienced during the 2025 raining season. This situation was also the case in neighboring Kaita local government where farmers in the Northern part experience the same situation.

Existing Strategies to Tackle Land Degradation by the Government

The Government at the State and Federal levels has been carrying out a number of strategies towards tackling land degradation in the study areas. The measures are:

- i. Katsina State Government has recruited and trained Katsina State Community Security Watch Corps (KSCSWC) to tackle the insecurity prevalent in Jibia LGA. This will allow the people to rear their cattle and ruminants that generate farmyard manure towards tackle land degradation.
- ii. Katsina State Government under the Ministry of Environment has been maintaining a number of shelterbelts that serve as wind breakers preventing soil erosion by wind example include shelterbelts found near Jibia town in Jibia LGA and Dokawa Village in Mashi Local Government Area, at the outskirts of Mashi town.



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- iii. The Federal Government of Nigeria of Nigeria through the National Agency for Great Green Wall (GGW) project has been establishing and maintaining tree plantations as a means of halting desertification in Jibia, Kaita and Mashi LGA. One of the on-ongoing projects of the GGW is the road side planting from Dankama in Kaita LGA to Birnin Kuka in Mashi LGA of Katsina State.
- iv. Katsina State Government has launched goat-rearing initiative program distributing 40,000 goats with focus on Jibia, Kaia and Mashi Local Government Areas. The Program aims to boost livestock production and empower women economically with each of the 361 wards in the State receiving goats. It is further expectant that the goats will generate manure for farmland while reducing the reliance of rural women on forests and forest reserves.
- v. Katsina State Government in conjunction with Agro-Climatic Resilience in Semi-Arid Landscapes (ACRESAL) has planted 3,000 tree seedlings in order to reforest areas of forest lands that were degraded by human activities in the study areas.
- vi. The Federal Government under the Border Communities Development Agency have been engaging in the construction of tube wells equipped with pumping machines and accessories for irrigation. The construction is aimed at providing water for irrigation while tackling the aridity problem of the land. One of the sites where this construction is the Abu Alawa Dam at the outskirts of Mashi town, in Mashi LGA.
- vii. Katsina State Ministry of Environment has allocated land for farming to the people in the study areas tree seedlings that are planted on the farmland. This move is aimed at promoting agro-forestry practices to tackle land degradation.
- viii. The Federal and State Government agencies have been engaging in advocacy education and sensitization of farmers on the best farming practices and how to engage in environmentally-friendly activities that do not encourage land degradation.
- ix. Katsina State Government in partnership with International Fund for Agricultural Development (IFAD) Katsina State office has established earth dams and boreholes for irrigation purposes. They were established at Ba'awa and Yanhoho Kaita LGA.
- x. Katsina State Government and IFAD officials have taught farmers how to plant vertices grass at the edge of farmlands to prevent soil erosion. The farmers were also encouraged to plant grasses that grazing cattle can feed on thereby preventing encroachment into farmlands and farmers-herders clashes.
- xi. KTARDA has set up tree seedling nursery along Dandagoro road in Katsina metropolitan in order to boost the practice of planting of trees on farmlands by farmers and the creation of tree plantations for fuel wood, extraction thereby preventing desertification.
- xii. KTARDA Staff have educated farmers on contour farming whereby ridges were created to block the flow of rain water thereby preventing soil wash. This is usually shown in form of film shows so that the farmers can see it vividly to learn about the technique of contour farming.
- xiii. IFAD in conjunction with KTARDA officials have been introducing to farmers in Jibia, Kaita and Mashi LGAs, the half- moon technique of water for the planting of crops that can survive period when there is no rain or drought.

Recommendations



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The following recommendations are offered towards tackling the challenges posed by land degradation to the people of the study area who are mostly farmers and derived livelihood sources directly from the land:

- i. Katsina State Government in conjunction with the Federal Ministry of Water Resources rehabilitates the Daddara Earth Dam in Jibia LGA and revive the irrigation component of other dam projects in Kaita LGA. These are important in promoting irrigation farming in the areas while preventing dryness of the land thereby checking land degradation. This can be done through budgetary allocation by Katsina State government to rehabilitate Daddara earth dam while the Federal Government through the Federal Ministry of Water resources should allocate funds to revive the irrigation component of the Sabke dam.
- ii. Katsina State Government should assist both rainy season and dry season farmers with fertilizer at a subsidize rate on time before the commencement of the rainy season by allocating funds to purchase the fertilizer in large quantities as done in other states of the Federation. This is important for the farmers to improve the fertility of their farms while improving their crop production.
- iii. The Katsina State Government should assist the irrigation farmers to construct boreholes to access underground water for irrigation purposes at the Yanhoho, Dan Abdallawa irrigation sites of Kaita LGA. This can be done through the Katsina State Irrigation Authority created the present State Government.
- iv. The National Agency for Great Green Wall project should be very active in the conduct of their duties of improving the vegetation cover in the study area. The programs of the Agency such as creation of orchard and road plantation have not been effective in tackling land degradation as observed during field visits.
- v. Katsina State Agricultural and Rural Development Authority (KTARDA) should be deploying extensions workers to the LGAs to educate farmers on the methods and strategies of tackling land degradation. The Agency should conduct a census of farmers that should be provided with inputs during the farming season such as drought resisting seeds.
- vi. The Katsina State Government should continue with the goat rearing loan scheme that was launched recently at Dannakola village of Daura LGA. Efforts should be made towards caring for the goats to avoid death as was the case in the first scheme. This is important in enabling the people to generate farm yard manure from the goats.
- vii. Farmers in the study area should form cooperatives and associations with a view to sharing ideas and educating themselves on how to tackle the challenges of land degradation and how to seek for support from the local, state, federal governments including internal organizations.

Conclusion

Land degradation is a major a global environmental challenge in the semi-arid regions of the world. It affects agricultural production in this region especially in areas located at the fringes of the Sahara Desert in the continent of Africa. In Nigeria the Northern States especially those sharing boundary with Niger Republic are facing the challenges of land degradation. One of the states in Katsina State located in the extreme Northern Nigeria and even in the state, the local government areas sharing boundary with Niger Republic such as Jibia, Kaita and Mashi are among the most affected.



The Phenomenon of (Yakubu, et al. 2026) DOI: <https://doi.org/10.59479/jiaheri.v2i1.134>

This study found out that the three local government areas are experiencing land degradation. Several evidences have indicated the prevalence of land degradation in the three local government areas. The impacts of land degradation are severe on agricultural production leading to low crop producing, hunger and malnutrition. Governments at local, state and federal levels have adopted a number of measures to tackle land degradation but the challenge still persists. There is therefore the urgent need y all the relevant stakeholders towards tackling land degradation in the study area and Katsina state in general.

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