

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

Umar Sabo Gashua¹, Alhaji Musa² & Rabi'u Sabo³ rabiucaptain@gmail.com

¹Department of Agricultural Education

²Department of Biology

^{1&2}Umar Suleiman College of Education Gashua, Yobe State

³Department of Science Laboratory Technology,
Mai Idris Aloom Polytechnic geidam, Yobe State

Abstract

In every society youth are the backbone of its socio-economic development. Therefore, any effort to make the youth comfortable and law abiding in the society to make up to expectation in discharging their national development duty is a welcome idea. Against this background an empirical survey research was conducted in the study area which derived its respondents by random sampling technique and analyzed the result obtained using frequency and percentage, which revealed among other things that, the best way to fight desertification in developing nations is by afforestation and sustainable forest management, 40.47% percent of the respondents are between the age brackets of 18-38, 96.27% are male, 82% are married, and 65.34% are farmers, 56.80% do not have up to secondary school educational qualification, 47% opined that decision on new issues are taken by the community as a whole, 71% of the youths move to Lake TChad area after harvest for off-farm economic activities, 45.60% of the respondents are of the opinion that reduction in agricultural output in the area is caused by the sin committed by the leaders, the people of the study area showed that there are different government intervention in their areas in order to manage the problem of poverty and hunger. The research work concluded that, there is reduction in crop and livestock production and absent of off-farm economic activities in the area leading to high degree of poverty and hunger. Desertification hinders the economic activities in Lake TChad region adding to the economic hardship on youth of the area making them easy target for recruitment by cash awarding insurgents. There is also masculine dominance in the area and low level of Western education further exacerbated the problem of indolence. Though decision on new issues is unanimously taken by the community minimizes introduction of undesirable idea into the area but absence of off-farm economic activities send the youth outside the study area and return back home with such undesirable ideas into the community. The work also recommends government provision of off-farm economic activities to keep the youth at home and to strengthen the idea of unanimous decision taken, provide knowledgeable extension workers and effective education in the area to keep the youth busy in the area and participate fully in its development. Encourage a forestation to increase soil fertility and check desertification.

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

1.0 INTRODUCTION

This research is conducted in semi-arid zone of Jigawa and Yobe states of northern Nigeria. Semi-arid area is the region which receives average annual rain fall of about 200-500mm (Heathcote,1983). The region comprises of part of Benin, Cameroon, Gambia and Nigeria (Salako, 2016). Desertification threaten agriculture which is the main occupation of the people of the study area, the term desertification is the process by which a geographic region becomes a desert. It can cause major drought that last for several decades during which the vegetation change more drastically and permanently resulting in for example drying off of trees (Sands, 2005)

According to Sands 2005, among the causes of desertification include overgrazing and deforestation. A part from stabilizing area for agric purpose, forest provide wealth of benefits to humanity but in the study area due to poverty, lack of awareness, top down approaches in forests management compelled the people of the study area to subject the forests to heavy pressure and unsustainably modified them to non forest use such as farmland oblivious of that can be derived from the forest resource.

Forest ecosystems refer to an area which beside trees, include soils, water and the multitude of assorted animals, micro organisms and other plants (Mortimore, 2004).

Forest also help to derive the general precipitation pattern and distribute heat to temperate zones (Sands, 2005). They are

highly diverse ecosystems; supporting millions of species and supplying range of resources; lumber, veneer, pulpwood, and firewood in addition to these forests yield large number forage, animals and plants, medicine, non-wood fibres, furs, and skins, essential oils, Gums, waxes, latexes, and resin (IUCN, 1991). Thus forests provide substantial income and employment by providing conducive environment for crop production. The study area is curved out of Jigawa and Yobe because it is prone to desertification due high degree of deforestation of the area's scanty trees and high degree of over utilization of the resource as firewood for cooking and space heating during hamatan period (Yobe State Ministry of Environment, 2002,)

According to Hassan 2000, though actual extent and magnitude of desertification in Nigeria is still under investigation however, it is known to be affecting the country's eleven northern states and is regarded most pressing environmental problem in these states. A World Bank report put desertification to account for 73% of the \$5.1 billion Nigeria loses annually to environmental degradation problems (Mohammed, S. 2004)

The research was purposively conducted in the rural part of the study area in order to get the target respondents. Over 65% of the people are peasant farmers and live in rural areas. The consequences of desertification manifested in the study area include drastic loss of agricultural produce, irregular annual rainfall variability, poor soil moisture retention, communal conflict and low soil fertility (Mortimore, 1989). Overdependence

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

on raining season for farming activities by the people of the study area results in serious food insecurity and poverty (Sabo, 2014). These conditions are further exacerbated by lack of opportunity for off-farm income generating activities lack of access to qualified agric extension workers to educate the farmers on suitable farming methods and unfavorable government policies on rural development are the problems that make the youth of the study area desperately looking for alternative source of income and consequently become easy target for recruitment by insurgents (Boone, 2002)

2.0 OBJECTIVES OF THE STUDY

The specific objectives of the study are to:

- i. Identify socio-economic characteristics of the people of the study area;
- ii. Examine the effect of desertification on crop and livestock production and youth recruitment by insurgents in the area;
- iii. Examine the pattern of migration cause by lack of off-farm economic activities in the area;
- iv. Explain the role education can play in reducing the rate of poverty and hunger and recruitments by insurgents;
- v. Examine the causes of Lake TChad dryness;
- vi. Examine the undesirable effects of over exploitation of forests resources and

- vii. Examine the various government effort employed to mitigate desertification and its effects in the area.

3.0 METHODOLOGY

The study was conducted in semi-arid region of Jigawa and Yobe States. Ten local governments area from the two states with population of 1, 266, 615 according to 2006 head count (Wikipedia, 2017) were purposively selected.

The choice of these local government areas was based on the degree of visible environmental degradation caused by desertification on them and their youth than any other part of the two states where the research activity is possible. The local government areas are Bade, Geidam, Yunusari, Nguru, Yusufari, Karsuwa, Machina, Gumel, Maigatari and Kirikasamma. The study area is characterized by low amount of annual rain fall of less than 400mm with about sixty (60) days growing period starting from early July to late September (Mortimore, 1989). The major crop grown in the area are millet and guineacorn generally inter-cropped with cow pea, ground nut and sesame.

Sample and Sampling Technique

Data of the research was derived from the respondents using simple random sampling technique in which every individual from the study area of the 18 years and above is an eligible sample of the research work regardless of educational background, sexs or socio-economic status. Total of 386 questionnaire was administered to the

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

respondents based on Krejcie and Morgan table of sample size determination (Wikipedia, 2017). The entire questionnaire was administered by self-administered method of questionnaire administration by the research. However, only 375 questionnaire is used for data analysis by the study work due to their completeness.

Analytical Technique

The data of the research was analyzed by frequency and percentage. The research estimated livestock enterprises; cattle, sheep, and goat were considered the same and only their increase or decrease were used during the analysis by the research. A ten year period (2011-2021) was considered in the research data study.

Significance of the Study

According to Maslow's hierarchy of organism need in Adesanya, 1989, food occupy position number one on the hierarchy and also Julius Nyerere of Tanzania in FAO, 1978 suggested that only well-fed society is expected to contribute reasonably to the societal development, thus importance of food in the day to day life cannot be over emphasized. Also worth to be put into consideration is the saying that poverty, hunger and diseases are the pressing problems that can push individual to commit a lot of wrongs which are avoidable in their absence (Convery, 2007). More than half of the people of the study area are subsistence farmers and depend entirely on rainfall for their livelihood (Sabo, 2014). Desertification reduces the amount of expected rainfall seriously in the

area. A World Bank report put desertification to account for 73% of the \$5.1 billion Nigeria loses annually to environmental degradation management (Mohammed, S. 2004). Reduction in crop and livestock production in the area due desertification make which the youths who are the families breadwinners in the area become desperately unstable to perform their role of putting food on the family's table as well as other expected responsibilities as such look for alternative means of survival including joining the cash awarding insurgents to get money for survival.

This research is hoped to inform the stakeholders in agriculture and public policy personnel sector of the economy in the area the sustainable way to properly manage desertification cause of environmental degradation problems, reduce over dependence on rain for food production by the farmers in the area, provide off-farm economic activities and acquire rescanable education for day to day life processes to the people of the area.

4.0 RESULT AND DISCUSSION

The study revealed that 67.47% of the respondents are at their productive age bracket of 18 to 38 (Fielder, 2006) this indicates that the society is in its active and productive age, adequately structured with able youth who are the backbone of the society's socio-economic development (Wilkins, 1970). Youth are also good recipient of every positive economic and social change in the environment (Sue, G. 1991). The practice of acquiring farmland

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

by inheritances retards the process of continuity in the farming process because as the time goes by the land inherited by individuals cannot sustain and support them in farming profession farm land per. Thus any intervention to provide for alternative means of livelihood is expected to be welcomed idea in the study area (Schole,

2003). The study also identified other means of economic survival to constitute about 34.66% only. One of the farming problems in Africa is acquisition of farmland through inheritance due the number of children lined to inherit land from the single polygamous parent (Wilkins, 1970) Etc.

Table 1: Socio-Economic Characteristic of the Respondent

Parameter	Frequency	Percentage
Age		
18-28	102	27.20
29-38	151	40.27
39-48	67	17.87
49-58	44	11.73
59 and above	11	2.93
Total	375	100
Sex		
Male	361	96.27
Female	14	3.93
Total	375	100
Marital status		
Married	327	87.27
Single	48	12.80
Total	375	100

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

Occupation

Farming	245	65.34
Trading	12	3.25
Civil servant	59	15.73
Artisan	59	15.73

Total	375	100
--------------	------------	------------

Sources: Field Survey 2021

Educational Qualification

Below secondary school	213	58.90
Secondary	121	32.27
Above secondary	41	10.93

Total	375	100
--------------	------------	------------

Farmland Acquisition

Inheritance	296	79
Purchasing	23	06
Government Allocation	52	14
Other means	04	01

Total	375	100
--------------	------------	------------

Sources: Field Survey 2021

Table 2: Reduction in agricultural product (2011-2021)

Product

Crop	Responses	Frequency	Percentage
	Yes	312	83.20
	No	63	16.80
	I don't know	0	
	Total	375	100

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

Livestock	Responses	Frequency	Percentage
	Yes	286	76.37
	No	87	23.73
	I don't know	0	0
	Total	375	100

Sources: Field Survey 2021

Table 2 indicates the reduction in crop and livestock production in the area from 2011 to 2021, crop is the major food item in the study area. The table further shows that 83.20% of the respondents say there is reduction in crop production in recent years in the area and 76.27% say there is reduction in livestock number in the study area. Crop is categorized into food and cash crop. The food crop is for the family daily food requirement while the cash crop is for revenue generation to covers the food crop

deficit or any other day to day cash requiring activities.

Due absence of the revenue generating off-farm economic activities or any other means of supporting livelihood in the study area it is customary for the able youth to go to places where there are off-farm economic activities after harvest to be able to generate cash to Prepare for next farming season actively and other money requiring activities.

Table 3: Youths Movement After Harvest

Description of movement	Frequency	Percentage
Lake Tchad	267	71.20
Other Cities	108	28.80
Total	375	100

Sources: Field Survey 2021

Table 3 indicates the able youth movement out of the study area in dry season after harvest in search of cash to support live. The table further showed that 71.20% of the respondents have notice movement of youth to Lake TChad area and 28.80% have seen the youth movement to other cities generally

in southern part of the country for additional revenue to support farm work and other money requiring domestic issues. Despite the large number of youth migrating to Lake TChad region, one of the problems they encountered in lake area TChad is that water body for economic activities is narrowed by

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

the day due desertification, causing high and violent competition on the resource between

the indigenous people and the immigrants.

Table 4: Respondents Perception of the cause of Reduction in Agric Product

Perception	Frequency	Percentage
End of The World	61	18.27
Sin Committed by the Leader	171	45.60
Sin Committed by the Society	131	43.97
Change of Weather	12	34.2
Total	375	100

Sources: Field Survey 2021

Only 34.20% of the respondents associated the cause to the change of weather according to table 4. Looking at the low level of the respondents western education background (table 1), it become imperative for the authorities in the study area to give adequate

environmental education to the young ones in the area to learn to master the art of sustainable use of the environment and its resources while the adults are to be effectively mobilized on environmental issues. (NEAZDP, 2002).

Table 5: Decision on new issue in the area

Decision Makers	Frequency	Percentage
Authorizes	98	26
Elders only	60	16
Community	176	47
Elites	41	11
Total	375	100

Table 5 reveals who decide to accept or reject to be included new issue into the community. The table further revealed that 47% of the respondents opined that decision to accept or to reject introduction of any new issue in the community is decided by the community as a whole including rulers,

elders, youths and elites. The importance of such unanimous decision taken procedure to the community is that before anything is introduced into the community it must have the blessing of the general members of the community. This could be the reason why despite the high poverty level and the urge

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

to get money by the youths of the area, insurgents cannot not recruit them at home; they have to wait until they to go to Lake

TChad area before recruiting the youth of the study area into their group.

Table 6: Youth Returning to the area for next agricultural activities

Sex	Frequency	Percentage
Male	361	96.27
Female	14	3.93
Total	375	100

Sources: Field Survey 2021

Table 6 showed the percentage of the respondents who are of the opinion that some youth are not returning to the area after leaving for off-farm economic activities during the dry season. The table further shows that 96.27% are of the opinion that

they have seen male youths who do not return to the area during the raining season and 3.73% have seen female youths who do not return to the area for next growing season. This may means that some youth do leave the area for greener posture or join insurgents.

Table 7: Ownership of the forest

Owner of forest	Frequency	Percentage
Government	301	80.00
Endearment	46	12.27
Community	29	7.73
Total	375	100

Sources: Field Survey 2021

Table 7 shows that 80% of the respondents are of the opinion that forests are government property. This problem is further compounded by the fact pointed out

that; People with little or no education are very difficult to govern (Wilkins, 1970). The best way to manage forest in a community with low income and education such as the

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

study area is by participatory approach

forest management (Sands, 2005)

Table 8: firewood use for cooking in my house

Responses	Frequency	Percentage
Yes	346	92.3
no	27	7.2
I don't know	2	0.5
Total	375	100

Sources: Field Survey 2021

In the above table 8 shows that 92.3% of the people of the study area are using firewood for domestic cooking and space heating. This is a clear indication of unsustainable over use of forest. Over collection of wood for use as firewood is enough cause deforestation in sub-Saharan Africa (Sands,

2005). Generally the nature of family in sub-Saharan Africa is dependent and extended type in which large number of individuals feed from one pot (Adesanya, 1989) Therefore choice of source of energy for cooking must be considered both in term of economy and availability (Sabo, 2014)

Table 9: some small and medium scale industries that are using firewood in my area

Responses	Frequency	Percentage
Yes	374	99.7
No	0	00
I don't know	01	0.3
Total	375	100

Sources: Field Survey 2021

In the study area as seen by 99.7% of the respondents, small and medium scale industries such as bakeries, beans cake sellers, pizza, roasted; charcoal broiled fried

and cook meat seller set care using firewood for their business. This indicates high use of firewood as source of energy

Table 10: Government establishments that are using firewood

Responses	Frequency	Percentage
Yes	301	80.27
No	12	3.2
I don't know	62	15.53
Total	375	100

Sources: Field Survey 2021

Table 10 indicates that in addition to over use of firewood by homes for cooking and space heating and small and medium scale industries that are over using forests resource for energy in the study area, table 10 also show that, 80.27% of the respondents have seen some government

establishments such as prison, schools, hospitals etc that, are using firewood for their energy requirement these together increase up the over utilization of this forests resources which cause deforestation especially in the area like the study area

Table 11: Tracks are seen loaded with log

Responses	Frequency	Percentage
Yes	368	98.14
No	02	0.53
I don't know	5	1.33
Total	375	100

Table 11 shows that 98.14% of the respondents use to see tracks loaded with log of woods transported to towns for use as firewood. This will cause problem to the forests in the area.

Table 12: Large amount of wood is seen in the area for sale

Intervention	Frequency	Percentage
Yes	372	99.2
No	03	08
I don't know	0	00
Total	375	100

Sources: Field Survey 2021

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

Also table 12 shows 99.2% of the respondents have seen large quantity of wood unsustainably collected from the forests and display for sale to building and construction workers and firewood users.

Poor environmental knowledge kills because individual receives little to the detriment of their community future including parent, and family unknowingly (Sue, G. 1991).

Table 13: Benefits that community derives from forest and their resources

Responses	Frequency	Percentage
Yes	294	78.40
No	46	12.27
I don't know	35	9.33
Total	375	100

Sources: Field Survey 2021

Table 13 shows that over 78% of the respondents are of the opinion that wealth of benefits can be derived from forests and their resources by people, plants and animals Tree planting and reforestation as well as sustainable forest management is the most

affordable ways of fighting desertification in places like the study area (Sands, 205). With this results it only take little enlightenment education to incorporate the people to sustainable forest establishment.

Table 14: Government intervention to manage the environment degradation problems in the area

intervention	Frequency	Percentage
Three planting	29	7.73
Support irrigation farming	103	27.47
Agric loan	82	21.87
Poverty alleviation programme	70	18.66
Enlightenment	91	24.27
Total	375	100

Sources: Field Survey 2021

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

Table 14 revealed that government is aware of the environmental degradation problem in the area caused by desertification as such come out with number of interventions to manage this menace said the respondents. One of the interventions identified by 27.47% of the respondents is supported irrigation farming known as 'kadada' in the study area, the government provide support and train farmers in this type of rice irrigation farming . Also in support of this programme government establishes bodies like rice farmer association who assist farmers in rice production and marketing it in the area. Such programme keep the youth in the area at home and prevent them from leaving the area and improve their revenue generation 7.73% of the respondents have seen intervention in form of tree planting to fertilize the soil and stabilize the environment to fight desertification (Nwanna, 2000) Provision of sustainable mean of economic support to livelihood reduces pressure on forests (Sands, 2005)

CONCLUSION

The research work concluded that there is alarming reduction in crop and livestock production in the study area which brings about hunger and poverty. The research have noticed that the respondents are of the opinion that reduction in the agric output is caused by sin committed by the leaders and people of the area Poverty. The hunger and poverty level in the area compelled the youths to migrate to Lake TChad area in search of off farm economic activities where some of them get lured by the insurgent and join them. Also the work discovered that lack of proper education contributes to the

deterioration of life in the study area and believed that reforestation and sustainable forests management are the best and affordable methods of fighting desertification in the study area. Forest and its resources in the area are believed to be owned by government, this encourage abuse of forests and their resources Another problem discovered by the research is acquisition of farmland by inheritance, this practice easily put youth of the study area out of farming business due reduction in farmland size inherited by the individual. People

of the area have notice government's positive workable intervention to tackle the environmental degradation problems and decision on new issues are unanimously taken by the community as this will go a long way in minimizing hunger, unrest and poverty and subsequent in evolvment in insurgency by youth.

5.0 RECOMMENDATION

The research work recommended the following to serve as the management strategies to curb down the pressing problems of poverty, hunger and unrest in the area. These recommendations are:

- i. Provision of able extension workers to study the situation and recommend the appropriate farming method and crop that can thrive in the area
- ii. Plant trees and manage them sustainably to improve the soil condition and allow the crop to thrive

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States

iii. Give the children appropriate education with emphasis on environmental education and effective mass mobilization for the adult to learn the art of sustainable use of environment and its resources;

iv. Provision of means of off-farm economic activities to give the youths chance to stay at home in peace and help in developing their area;

v. Educate the people of the area on the importance of forest and its resources and mobilize them to learn its management by participatory forest management approach in which everyone is involved in the for estrangement;

vi. Government should develop and allocate farmland to the people of the area especially the youth to enable them acquire farmland and continue with the farming profession in a way other than inheritance and

vii. Forest should to be sustainably protected and utilize to benefit farmers and rearers because both of them like to be in forested area or a place close to forest, simply because reduction in forests size cause both parties to compete for available limited spaces and this may also force some of the rearers to migrate to places where there are forests and

complete with their indigenous farmers and lead to conflicts and

viii. Encourage the provision of off farm means of generating income.

REFERENCES:

Adesanya, O. O. (1989) Agricultural Science for Nigerian Nigerian School Certificate. Ibadan; KFC pub.

Boone and Kurtz (2002) Contemporary Business (10thedn)Harcourt College Pup. USA

Convery, I. (2007) Community Forest Management: A panacea to African Forests Development Part IV. Workshop organize for African Forest Managers by National School of Forestry Newton Rigg; UK.

Elizabeth Wilkins (1970) Introduction to Sociology (5thedn) London; Longman Pub.

FAO (1998))Inter Regional Symposium on Integrated Development, Report on the Conference held on 19th-23rd Sept. 1972 Vol.II pp6-7 at Benin Republic

Fielder,S ;Smith, B; and Smith D.(2006) Student Associate Scheme Course Detail UCLAN pub. Preston; UK

Hassan, B. (2000) Degradation and Rehabilitation of DryLands. The Nigerian Experience in Proceedings of international seminar on converting Desertification Freshwater Resources and Rehabilitation of Degraded Areas in the DrylandsD'jammena Chad

Heathcote, R.I. 1983) The Arid Land. Their Uses and Abuses. London; Longmg. Pp16

IUCN/UNEP/WWF (1999) Caring for the Earth: A Strategy for Sustainable Living .SwitzlandSIDA

McNeely, J. A (2004) Economics and Biological Diversity: Developing and Using Economics Incentives to Conserve Biological Resources. New Delhi; Prentice Hall

Mohammed, S.T (2004) Economics of Integrated OasisFarmjng in Manga Grass Land, Yobe State, Nigeria Unpublished M.Sc. Dissertation, Department of Agricultural Economics and Extension. University Of Maiduguri, Nigeria.

Mortimore, M. (1989) Adapting to Drought, Famine, and Desertification in West Africa University pres. Cambridge; pp157-159 UK.

NEAZDP (2002) Annual Report NEAZDP Pub.Garin Alkali via Gashua; Yobe State Nigeria.

Nwanna, et at; (2000) NCE/DLS Course Book on Integrated Science Cycle 1 NTI, Kaduna; Nigeria

Salako, G.N.K. (2016) Role of Traditional Rulers in Forest Resource Management Unpublished Paper Presented at annual Symposium. Department of Environmental Resources Management university of Ilorin

Schole, J and Johnson , T.L.(2003) Contemorary Business Strategy .London; Prince Hall; London.

Sabo, U.G. (2014) Factors Militating Against Girl Child Education in Mange Grassland. Journal of Education USCOEGA

Sabo, U.G (2007) Firewood Collection Induced Desertification in Sub-Saharan Africa: A case of Northern Yobe State of Nigeria, Unpublished M.Sc. thesis Newton Rigg School of Forestry University of Central Lancashire, UK

Sue, G., Grahams, P., and David, S. (1991)Earth Right London; Koran Page WWF, UNEP (1990) Environmental Perspectives to Year 2000 and Beyond.Nairobi; UN Environmental Program Kenya

Wikipedia (2017) krejie and Morgan Table of Sample Size Determination. USA WWF International (1989) Tropical Forests Conservation Position Paper III Glasg: WWF International

Yobe State Ministry of Environment (2002) Annual Report 2000.

An Investigation into Some Negative Socio-Economic Effects of Desertification On Youth of the Ten Desertification Prone Local Government Areas of Jigawa and Yobe States