

THE IMPLICATIONS OF POPULATION GROWTH ON RURAL RESOURCES CONSERVATION

Dr. Leonard Edadi Ukam

Department of Urban and Regional Planning Cross River University of Technology,
Calabar, Nigeria

Abstract

There are obvious and significant indicators that our rural resources are fast becoming depleted. The extent to which rural land and marine yields have taken a down-ward turn poses a serious danger to survival of the rural population. One basic objective of environmental conservation is thus to ensure that man's wanton spirit of exploitation of the resources in the phase of increased population is controlled so as to strike a balance between the needs of the present generation and the chances survival of the future generations. This paper is the products of a survey carried out on the Ibini Erei Community in Biase Local Government Area of Cross River State Nigeria. The focus was to ascertain the extent to which their economic activities (farming and fishing) have been affected by population increase. Questionnaires were used in the collection of such data as farm size, farm output, fish-catch measured in basins (60 [cm]^3) and later converted to metric tons, types of fishing materials used, present and past population sizes as well as certain traditional conservation practices. The data obtained were statistically analyzed using the Pearson Products Moment Correlation, tested at 0.05 level of confidence. The results showed the population has a significant negative effect on the rural resources. It has led to the excessive fragmentation of land, neglect of basic traditions approaches to conservation, poor yields in both land and marine products, poor income and other social vices. Practical recommendations to ease population pressure on rural resources including establishment of cottage industries, development of infrastructural facilities and a stronger government presence through the Family Economic Advancement Programme (FEAP) before and the current Covid-19 Grant as well as other federal and state loan empowerment programs have been suggested in this paper.

Keywords: Ibini, Population, Rural Resources, Conservation, Exploitation.

INTRODUCTION:

There is no doubt that there is a very strong relationship between population and the extent of harvesting of natural resources such as land, water and forest to mention just these few.

The pressure on the natural resource caused an increasing population and their quest for high standards of living in the developing countries are growing at a rate that is increasingly difficult for the natural world to cope with. Thankur in Misera (ed) (2014). Ebong and Aminashaun (1992) have observed that the population constitutes the most dominant element of any ecosystem, being a vital component of resource base in the development of a nation. It is no wonder therefore that economist and other thoughtful men have been keenly interested in population problems in all ages (Hanson, 1972).

Mistra (ed-2014) states that there is a very strong relationship between increasing population and declining resources such as land, water, minerals, forest and energy resources in the backdrop of several theories such as demographic transition, Malthusian, Marxist and carry capacity etc as it relates to population dynamics and resource utilization.

Bhattacharyya and Sarma (2015) postulated that increasing population has brought severe pressure on the environment leading to large scale destruction of forest, wetlands, agricultural land etc. Maiti and Maiti (2017) states that indeed man has plundered nature and depleted to almost towards its threshold point. It has further been observed that the erosion of biodiversity as a result of increase in population has equally affected the culture of the people where the culture is tied to nature as it is the case with Erei people of Biase local Government Area of Cross River State, Nigeria (Ukam, 2018).

Ebong and Aminashaun (1992) observed that population constitutes the most dominant element of any ecosystem, being a vital component of resource base in the development of a nation.

This population has generated three main arguments on the relationship between population and development. There those who perceive population as no problem at all, some believe that population growth stimulates development while the third group maintains that unless checked, population growth can wipe off all economic gains. Ebong and Aminashaun (1992). Based on the assertion above, Mistra (2014) raised very pertinent questions like

- (a) What are the implication of rapid population growth for natural resources?
- (b) What are the resource implications of concentration versus dispersion of population?
- (c) How long can the natural resources of a finite world support growing populations at a rising level of living?

These questions and other issues raised will definitely be a guide to the study. The negative implications of high population density in an area becomes glaring and devastating in the face of lack of capital and technology to exploit available land and water to meet the need of teeming population. Over population brings about shortage of amenities like water, electricity, housing and food furthermore, it leads to traffic congestion, environmental degradation, unhygienic conditions, anti-social activities, psychological depression and such other vices. Agabi (1995) has rightly observed that meeting the demands of the increasing world population will require more intensive and extensive exploitation of many natural resources especially agricultural land, forest and water. Bassey (1991) extends this demands further to include better agriculture technology, more agricultural capital and more labour. The role of population in sustainable development is very vital because resources are finite and exhaustible and such there is an overwhelming need to maintain a balance between available resource and the population. Resource have a slow pace of formation in comparison to the rate of population increases rural areas and Ebong and Aminashaun (1992) put it at 2.5% or 3% in Nigeria. National increases is one of the basic ways by which rural population has increased over the years. With no

concomitant increases in rural land and water, it is inevitable that extra pressure will be put on the natural resources. This is the case with Ibini village, in Biase Local Government Area where the population has increased from 168,113 in 2006 to 224,700 in 2016 at an annual population change of 2.9%. In an area of 1,302km² with a population density of 172.6/km². There are obvious and significant indicators that our rural resources are fast becoming depleted. The extent to which rural land and marine yields have taken a down-ward turn poses a serious danger to the survival of the population. Conservation is thus inevitable and must be advocated for the survival of the ecosystem. Ogbeibu (1990) asserts that conservation is the same as sustainable development. He maintains that conservation is a wise management of species and habitats such that changes are controlled and undesirable effect minimized. To the United Nations General Assembly, sustainable and development implies meeting the needs of the present without compromising the chances of the needs of the future generations being met also. Oriafo (1990) considers conservation as simply saving natural resources and using them wisely as possible to avoid wastage and ensure that they are not used up too soon. Conservation embraces preservation, maintenance, suitable utilization, restoration and enhancement of the environment. The need for wise utilization of natural resources and the physical environment as product assets which support economic development and sustain human populations is stressed by Aina and Salawu (1992). Famoriuyo (1979, Ukam 1997 and Ukam 2018) have observed a great degree of negligence of this conservation approach as they report that lands in the rural areas are over fragmented in a bid to support the high population density, while Mabogunje (1995) asserts that the relationship between population and environmental degradation is quite obvious in such matters as agricultural products and consumption of forest resources.

It is a result of the problems posed by human population that Upkong et al (1995) recommend that it is essential to understand population vis-à-vis other variables such as availability of resources, their utilization and eventual conservation

THE STUDY AREA

The study was conducted at Ibini, village Erei Community in Biase Local Government Area of Cross River State. Ibini Village is located on the western bank of the Cross River and it is one of the ten villages that makes up the former Erei Clan, now Erei North and Erei South political wards.

The map of this study area is shown on figure I. Ibini settlement depends on farming and fishing for survival but is more inclined to the later. Most of the inhabitants combine farming and fishing as a means of livelihood. A negligible few are engaged in civil service job, teaching and trading to earn a living. These population also involves themselves in farming and fishing to complement their means of livelihood. Hunting is also practiced by the natives to augment their protein source and to earn income. The population of the settlement has shown a high growth rate. Between 1991 and 2020, considering Biase Local Government Area population of 168,113 in 2006 to 224,700 in 2016. With a population rate of 2.9%. Biase Local Government Area occupies a land area of 11302km² with population density of 172.6/km² in 2016.

In recent years there have been complaints and serious concern expressed by the natives about the poor yield in the farm sector and low catches in the marine resources. It has been obvious that these rural resources have become drastically depleted and being that they are fundamental to the survival of these rural population, a study of this native was inevitable and certainly timely.

AIM AND OBJECTIVES

The aim of the study was to assess the effects of human population pressure on rural resources.

The objective are as follows:

- (i) Identify the possible indicators of rural resource depletion
- (ii) Identify the problems associated with rural resource utilization;
- (iii) Examine the attitude of the people towards traditional conservation methods in the face of increased population and economic depression
- (iv) Suggest alternative ways of earning a living to the population in order to conserve land, forest and marine resources
- (v) Recommend appropriate measures for rural resources conservation to enhance environmental sustainability

MATERIALS/METHOD OF STUDY

A survey inferential research design was adopted for the study. Two hundred questionnaires were administered to indigenes of the study area to elicit information on their impression about the state of resources in the area. Those who constituted the population were randomly selected adult male and female who engage in farming, fishing, hunting or some combination of these.

Other information obtained included farm size, farm output, fish catch (measured in basins of size 60cm³), fishing materials as well as past and present population figures of the study area from the National Population Commission in Calabar.

Two hypothesis were tested using Pearson Product Moment Correlation Coefficient at 0.05 level of significance. In testing the hypothesis on marine resources the total population of the area in different years used for the study since they all constituted the pressure either as dependents or as workers.

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS**TABLE 1: AGE DISTRIBUTION OF THE SAMPLE POPULATION**

AGE	NUMBER OF RESPONDENTS	PERCENTAGE
0-9	35	23.33
10-20	30	20.00
21-30	25	16.67
31-40	25	16.67
41-50	20	13.33
51-60	10	6.67
61 and above	05	3.33
	150	100.00

Source: Researchers Field Survey 2021

From table 1, it is clear that the ratio of dependents to the working class is quite high considering the age brackets 0-20 years and 61 and above. These two groups form 46.66% (70 respondents) of total sampled population. Also, considering the fact traditions of the area recognize maturity from the age of 24 years after celebrating the chronological age naming ceremony (Ukam, 1987). This situation indicates pressure on the working class (rural work force) with a resultant effect on the rate of exploitation of the rural resources to meet the need of the people.

The recognition of maturity from the age of twenty four (24) when such individuals will be allowed access to parcels of land for agriculture as well as engage in fishing and hunting activities means that every year there will be additional group of people who will begin to make direct demands on the environment since people will be attaining this age every year. The consequences is further depletion of the resources.

TABLE 2: POPULATION ACCORDING TO AGE GROUPS IN BIASE LOCAL GOVERNMENT AREA

Age group (in years)	Population	Percentage
0-14	65,160	0.29
15-64	97,703	0.44
65-above	5,176	0.02

Source: 2006 projected population 2016 (National Population Commission Cross River State)

Table 2B: AGE DISTRIBUTION IN BIASE LOCAL GOVERNMENT AREA

Age Distribution (in years)	Population
0-9	44,572
10-19	40,024
20-29	30,019
30-39	20,554
40-49	15,338
50-59	8,787
60-69	5,185
70-79	2,185
80-above	1,450

Source: 2006 projected population 2016 (National Population Commission Cross River State)

Table 2A and 2B shows the respective population of age groups and age distribution of population in Biase Local Government Area where Ibini is one of the villages. The implication of this population distribution on land, water and forest resources can better be imagined.

TABLE 3: NATIVES IN OTHER PROFESSIONS WHO ALSO ENGAGE IN AGRICULTURE

Professions	No. of Respondents	Percentage
Traders	15	10.0
Blacksmiths	9	6.0
Tappers	20	13.33
Tailors/Seamstresses	8	5.33
Civil Servants in service	7	4.67
Food Vendors	6	4.00
Retired Civil Servants	5	3.33
Teachers	10	6.67
Farmers	60	40.00
Total	150	100.00

Source: Researchers Field Work

Table 3 explains the fact that apart from farmers, people from other walks of life engage in subsistent agriculture in order to have food and to make ends meet. Apart from this people who actually get themselves involved in agriculture, many others depend on farmers for food and on agricultural products as raw materials for industries. As could be seen from the table 3, farmers form only 40% of those who engage in agriculture while the remaining 60% is made up of those from other walks of life who are also involved in agricultural activities.

This goes to confirm the fact that there is further pressure on the available rural land, forest and marine resources. This situation calls for further fragmentation of land to accommodate these extra population while in the fishing sector only small mesh nets can even make a reasonable catch because of the extent to which the lakes and streams have been over exploited. There is a general decline in catch per unit efforts as indicated by the drastic reduction in the number of basins of fishes caught. Increase in fishing efforts no longer result in proportionate increase in the catch.

Other indicators of decline in catches as observed by Ita (1991) is decline of catches in longer mesh nets and consistent high catches in small mesh nets. Also there is low productivity of the littoral zones due to intensive exploitations of these areas with small mesh-nets. Though the cost of catching a unit weight of fish is rising, there is no relative increase in fish catch.

From the table 4, it was observed that one of the greatest hindrance to rural resource recuperation after use is the fact traditions of the people have become almost completely discarded. 30 respondents representing 20% agree with the view while 10 respondents, representing 6.67% attribute the problem to modern method of fishing with the use of foreign materials which are alien to the tradition of the people. These materials are designed for mass killing which is different from the local nets such as “egbele” and “eghat”, 20 respondents (13.33%) are in agreement with this.

TABLE 4: POSSIBLE REASONS FOR DECLINE IN BOTH AGRICULTURAL AND MARINE RESOURCES

Items	No. of respondents	Percentage
Traditions are no longer obeyed	30	20.00
Lawlessness on the parts of youth	10	6.67
Modern methods of fishing is harsh	20	13.33
Christian religious belief against tradition	10	6.67
Western Education		
Traditional land tenure system	05	3.33
Lack of modern method of agriculture	20	13.33
Lack of alternative occupation to agriculture	15	10.00
Over population	10	6.67
Total	30	20.00
	150	100.00

Source Researcher's field survey

It was asserted that Christian religious belief against the tradition of the people also gives some people a very daring impetus to penetrate those areas that were forbidden by tradition. 10 respondents, representing 6.67%, agree with this. The above findings confirm the fact that some

traditional and customary practices in the rural areas are environmental friendly and therefore essential for environmental resource management.

It is no wonder therefore that many authors agree with the fact that conservation is an old man. Ogbeibu (1990) asserts that many basic conservation ideas were put into practice long before the dawn of written history. He observed that ancient man often viewed the earth and its life as gods who had to be worshipped and cared for. For instance early hunters do not kill animals for pleasure. Prehistoric farmers realized that it was better for the land to fallow or uncultivated from time to time as a way of restoring the soil to its natural fertility. The research agrees with those views equally show that even the materials and methods used in the exploitation of resources can hasten the rate of depletion especially those of marine. The use of poisonous leaves, nylon nets of various mesh sizes, Gamaline 20 and explosives that kill fishes at a swoop no matter where they are hiding, more destructive than the native nets. Of course 13.33% (20 respondents) agree with this, as they attribute the decline in fish catch to modern method and materials used for fishing in our time. Another fact is the increased demand for fish since other settlement now depends on Ibini for the protein intake through fish. This has made men and women fishers to do this occupation on a more commercial basis and they now do it throughout the year and every time of the day and night. This, therefore leaves the fishes with no time to recuperate. Some die in their hideouts because of the chemicals used for fishing, while others have no hideout because of fishers that combed all the nook and corners of the lake and streams. This is not the practice in the past when women did their fishing in the dry season with very mild methods (as simple as the bare hands) while men did their fishing during the raining season with the native nets. During this period, women embark on the fishing expedition after every two days taking one lake at a time, commencing from 2 pm to about 7 pm. This therefore means that fishes have time to rest since most of the natural tunnels for fishes and crocodiles as well as other marine thick bushes were avoided. Rural resources are equally taxed or depleted because of population increase. Prior to the advent of western education, any person who is less than 24 to 26 years was not allowed access to land for agriculture. Such people do not fish in certain lakes and streams in the study area. This helped to maintain a limited number of fishermen on the streams as well as the farmland. With this practices, fragmentation of land was minimal and the seven years fallow system was rigidly followed. However with the coming of the western education and the level of unemployment, nay, overpopulation, this rules are no longer obeyed. The unemployed school leavers could do nothing but jump into agriculture, fishing and hunting to make a living until such a time when they could gain employment with the public or private sector. From the field survey carried out by the researcher, 5 respondents (3.33%) attributed the depletion of rural resources to western education; 10 respondents (6.67%) said it is lack of alternative means of livelihood agriculture. This is not unconnected with those who after acquiring western education, look down on the customs and traditions of the people which could effectively boost environmental sustainability, just because they must make ends meet.

TRADITIONAL CONSERVATION PRACTICES IN THE STUDY AREA

As earlier stated, conservation is not a new phenomenon. It is as old as man himself. Ogbeibu (1990) believes that what brought about conservation rather to the limelight in recent years is the galloping tempo of mankind's development, wanton exploitation of natural resources, the costly attempt to tame nature and the now apparent corollaries.

Conservation is defined by International Union for the Conservation of Natural Resources (I.U.C.N) in (Ibid) is the management of human use of the biosphere so that it may yield the greatest sustainable benefit to the present generations while maintaining its potentials to meet the needs and aspirations of future generations. To them, conservation embraces preservation, maintenance, sustainable utilization, restoration and enhancement of the natural environment.

The conservation methods traditionally adopted by the people of the study area geared towards the realism of sustainable benefits such methods included:

Custom: The custom of the people demanded that all agricultural activities in any farming season must be done in a designated zone. Also nobody was expected to plant before the priest of the goddess of yam and fertility had chance to plant. It was also an abomination to harvest and eat new yam until the rituals had been performed. A defaulter was to make very costly sacrifices to appease the goddess of yam and fertility.

Bush fallowing: This land restoration method was adopted in the study area to ensure that agricultural lands were not used up too soon.

- (i) Some lands were also set aside for religious worship "Abu forest" and some other, for burial of the wicked people or those who-offended the gods this was called the evil-forest.
- (ii) To also reduce the pressure on land, access to land was based on maturity, the attainment of 24 years and above.

Religious practice/Superstition: Culturally, to ensure that fishes were in constant supply, certain areas were not meant for fishing. They were said to be the abode of the goddess of water. To enforce this, customary laws were made to prohibit people from fishing there. Another method used to enforce this practice was superstitious belief that if a particular person or group of persons carried out fishing activities in such prohibited places, they could be affected directly or indirectly (their children or relative) or they would come in contact with the goddess of water "Amoo-Ogbak" who could only be appeased through certain rituals by the priest. These rituals, certainly cost a lot of money, so that if the victim could not afford to pay, they or their children or relative would die or have mental problems.

Another superstitious way of conversion was to make people believe that fishes caught from these prohibited areas could never get done no matter how long they were cooked.

Furthermore, it also assumed that fishes brought from such 'no go' areas possess certain features that made them look quite different from other fishes caught from the free fishing zones, and as such, those fishes completely owned by the water spirits (god of water monster) and therefore defaulters would die. Another aspect had it that if a fisherman or woman caught so many of a

particular species of fish in his or her net, the fishes should be let go to the water because it was a bad omen or sign of evil things to come. When this unusual happened, the service of a native doctor or soothsayer should be employed to inquire from the water goddess, what that affected person had done to offend the gods.

Other superstitious beliefs which went to strengthen conservation included:

- (i) Where a fisherman's net was filled with fishes, if he took home some, he must let others go to avoid annoying the goddess of water.
- (ii) Certain fishing practices like the use of some poisonous leaves or Gamaline 20 were prohibited
- (iii) The use of explosives for fishing was regarded as an abomination as well as the use of hooks.
- (iv) Some sections of the streams and lakes were regarded as scared (scenic areas) and such were never tampered with or cleared. It is as a result of this that the researcher's father once told him that the essences of this section is to act as breeding grounds for fishes, that why fishing in such areas must be avoided not because fishes caught and eaten from such areas will cause death as the tradition of the ancient people's beliefs speculates.
- (v) It was also an abomination to allow faeces or cassava into certain lake and streams. A defaulter was expected to report to the priest of the goddess of water and he required to perform certain sacrifices to the goddess of water, otherwise the water goddess would in annoyance, lock up fishes inside some natural tunnels (caves) thereby reducing supply.

Totemic Practices: Crocodiles in some sections of the streams and land were regarded as scared and so should not be killed. So also were pythons and some other species of reptiles.

Totemic practices as a traditional method of conservation was observed in places like Emeabian Community in Owerri, Imo State, Obodoukwu in Ideato Imeri, Imeri Community in Ngor Okpalla, Imo State to mention a few (Agabi, 1995) and Idemilli in Imo State.

In Ibini Erei, Biase Local Government Area of Cross River State, avoidance of the killing of these reptiles was to forestall attracting a curse from the water goddess on the defaulter and his family. Though this tradition and customs of the people may look primitive and unchristian, yet this was relevant and important in management of rural resources. However, with increase in population, most of these customs and traditions are no longer rigidly followed.

This led the researchers to test some hypothesis to see whether there was any relationship between population growth and depletion of resources

Hypothesis 1:

There is no significant relationship between population and marine resource depletion.

Apply formula:

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{n \sum x^2 - \sum x^2} \sqrt{n \sum y^2 - \sum y^2}} \quad r = -0.77$$

This shows a strong negative correlation between population and resources. However this does not mean that there is no relationship between these two variables.

TABLE 5: POPULATION AND ESTIMATED ANNUAL FISH CATCH (60CM³) BASINS

YEARS	POPULATION SIZE (X)	ESTIMATED ANNUAL FISH CATCH (60CM ²) BASIN (Y)	X ²	Y ²	XY
1963	395	400	156025	160000	158000
1980	599	500	358801	250000	299500
1981	614	300	376996	90000	184200
1982	630	400	396900	160000	252000
1983	645	200	416025	40000	129000
1991	1753	200	3073009	40000	350600
1996	2023	100	4092529	10000	202300
TOTAL	Σx =6659	ΣY= 2100	ΣX ² =8870285	ΣY ² =750000	ΣXY=1575600

To test for the degree of association apply the formula:

$$t_c = \frac{r \sqrt{n-2}}{1 - r^2} \quad t_c = -4.22$$

When tested at 0.05 level of significance and at 5 degrees of freedom, using students 't' distribution table $t_t = 2.577$

Statistical Decision: The null hypothesis is rejected showing that there is a significant relationship between population and resource

Conclusion: The rapid rate of population increases is responsible for the wanton exploitation of rural resources.

Hypothesis 2:

There is no significant relationship between farm size and farm output. To find the relationship between farm size and output:

$$r = \frac{\sum (X-x)(Y-y)}{\sum \hat{o}_x \hat{o}_y} = 0.82$$

This shows that there is a significant positive relationship between farm size and farm output in Erei.

To test for the degree of association, apply the formula

$$t_c = r \sqrt{\frac{n-2}{1-r^2}} \quad t_c = 16.83$$

TABLE 6: FARM SIZE AND AVERAGE ANNUAL OUTPUT

No. of respondents	Av. Farm Size (X)	Annual Av. Output (Y)	X-x	Y-y	$(x-x)^2$	$(y-y)^2$	(x-x)(y-y)
18	0.52	2.0	0.48	1.7	0.23	2.89	0.82
6	0.52	1.5	0.48	1.2	0.23	1.44	0.58
12	0.52	3.0	0.48	2.7	0.23	7.29	1.30
9	0.52	4.0	0.48	3.7	0.23	13.69	1.78
6	0.52	5.0	0.48	4.7	0.23	22.09	2.26
3	0.52	6.0	0.48	5.7	0.23	32.49	2.74
6	0.24	0.5	0.20	0.2	0.04	0.04	0.04
12	0.24	1.0	0.20	0.7	0.04	0.49	0.14
21	0.24	1.5	0.20	1.2	0.04	1.44	0.24
18	0.24	2.0	0.20	1.7	0.04	2.89	0.34
6	0.24	3.0	0.20	2.7	0.04	7.29	0.54
3	0.24	5.0	0.20	4.7	0.04	22.09	0.94
6	0.24	6.0	0.20	5.7	0.04	32.49	1.14
9	0.08	0.5	0.04	0.2	0.00	0.04	0.01
6	0.08	2.0	0.04	1.7	0.00	2.89	0.07
141	$\sum x=4.96$ X=0.04	$\sum y=43.0$ Y=0.3			$\sum(x-x)^2$ Sx =0.11	$\sum(y-y)^2$ =4.915 Sy =1.03	$\sum(x-x)(y-y)= 12.94$

Source: Ukam (1987)

When tested at 0.05 level of significance and 14 degrees of freedom, using student's 't' distribution table.

i.e tabulated t = 1.76

Statistical Decision: Since tabulated 't' is greater than calculated 't' the null hypothesis is rejected while the alternative hypothesis is accepted that there is a significant positive relationship between farm size and farm output.

The implication of this result is that small farm size, all things being equal, do not produce large quantities of yams. Few barns of 4,500 seeds of various sizes of yams were realized. The small farm sizes were results of over fragmentation due to increase in population

SUMMARY FINDINGS:

1. The customs/tradition of the people which enhanced the conservation are no longer obeyed as a result of increase in population and claim to western education said to be superior to the traditions.
2. There is high dependency ratio in the rural areas. The consequences of this is the verocious exploitations of resources to meet the needs of these dependents and attendant depletion of the resource
3. The increase in the population of those who engaged in agriculture in the rural area is not only by natural increase but also as a result of people from other walks of life, particularly civil servants (absentee landlords) who seek to augment their meagre salaries with agricultural activities
4. The modern methods of fishing (Gamaline 20; Explosive, Nylon nets of different mesh size) have brought about mass killing (catch) of even the immature species and fingerlings
5. Lack of employment in the public sector has reduced graduates from, secondary schools, colleges of education and technology, polytechnics and universities to meare farmers thereby increasing pressure on land and other rural resources.
6. Increase in population also means increase in demand for shelter and medicine which is only made available to the rural dwellers through the use of local building materials (Bamboos, Sticks, Raffia palms, Ropes etc) and herbs, roots barks and leaves of trees for medicine.

RECOMMENDATION

1. Environment friendly custom/traditions of the rural people should be considered as part of environment conservation laws. Where necessary, there should be fine-tuned properly coded.
2. There should be an enlightenment campaign on the values of customs and traditions of the people that are environment friendly. This campaign should be explained to some of the educated people who see such customs and traditions as primitive.
3. There should be an alternative way of survival for the rural people in order to reduce the pressure on land and water. This should include the establishment of industries (Agro-based for the manufacturing of agricultural tools and not necessarily for the processing of raw materials.
4. There should also be established in the area fish farm that will supply fishes to the inhabitants of the areas to meet their protein needs. However, those who do fishing for economic reasons should be allowed at certain periods of the year to embark on fishing activities while embargo should be placed on fishing activities at other times of the year. During such times they should depends on the fish farms for supply. The fish farm projects should be supported by Government Covid-19 grants and other empowerment

programs. Other individuals and co-operatives who are interested in such projects should be encouraged by other grants from Non-governmental organization (NGOs). Other Government agricultural grant and loan schemes should also support this.

5. A law or an edict should be enacted to determine the size of fish to be caught and taken out of the river. Any size smaller than the stipulated should be dropped in the river to develop to the acceptable.
6. Prices of zinc, cement, and other building materials should be made affordable to the rural dwellers by the government in form of loans and building materials gifts. This will ease the demand for local building materials such as raffia palms, sticks, ropes etc that are exploited from the forest.
7. Animal husbandry, in form of poultry, goater, piggery, rabbitry, and snail breeding should be embarked upon in the rural area to provide additional sources of protein and to discourage hunting for games in the forest.
8. More jobs should be created in the public sector (civil service) in order to absorb the unemployed schools leavers from the rural areas. In the alternative, the National Directorate of Employment (NDE) should reactivate her training programs in the non-farm sectors for the school leavers. This will help to reduce the extra pressure from these persons on land.
9. Finally, the Federal Government of Nigeria should come up with good packages in the area of minimum wage, rent subsidy and free education from primary school to secondary school and a tuition free tertiary education to reduce financial burden on the civil servants who see agriculture as a way of augmenting their meagre salaries to meet the needs of their families.

It is my belief that if all these recommendations are implemented the pressure on our rural resources will be minimized and the needs of the present generation will be met while conserving sufficient resources for future generations.

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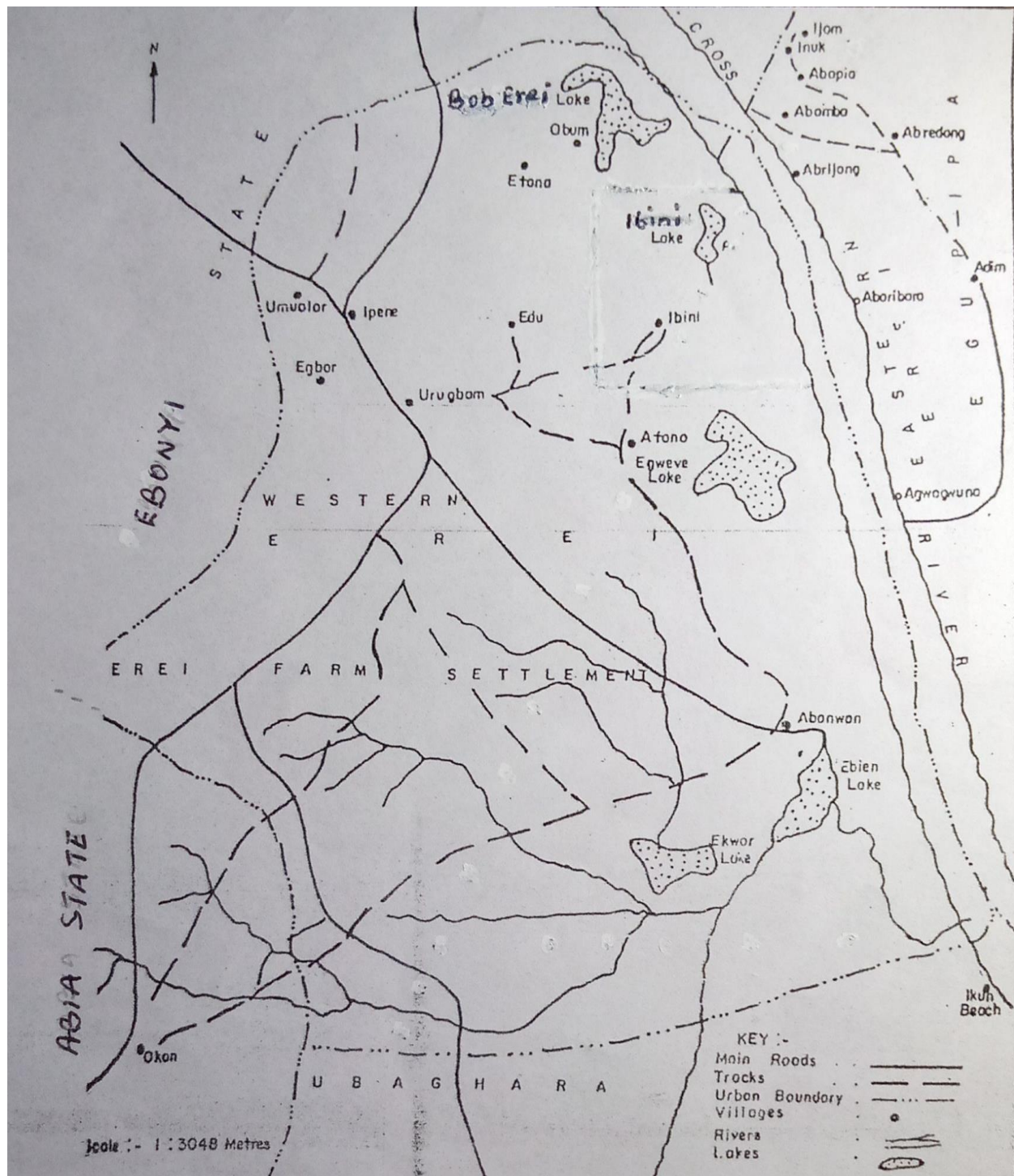


Fig 1 Map of Erei showing the study area