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Social Factors of Derived Savanna in Northern Edo State, Nigeria

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Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

Climate change has affected the erstwhile northern fringes of the Rain Forest in Nigeria leading to change of the Rain Forest to derived savanna. Edo North is one of such areas referred to as derived savanna in Nigeria. This study was conducted to evaluate the effect of the change in the environment on the social life of the people of Edo North. The objective was the evaluation of the changes in six social factors of derived savanna zone of Edo North in comparison with the more environment-stable Edo Central and South. Secondary data obtained from EDSG [1] were collated and analyzed by percentage incidence. There was evidence of avoidance of skilled personnel such as medical doctors and teachers in Edo North compared to Edo Central and South. Enrollment in primary one class recorded increase of about 5% in Edo North, but about 19% in Edo South. These are indices of adverse social factors of Edo North. Sustainable climate smart agriculture is hereby recommended in Edo North to arrest further degradation of the ecosystem, restore the forest vegetation and empower the natives economically.

Keywords: Climate; social factors; derived savanna; Edo North.

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1. INTRODUCTION

There is evidence of social dislocation due to climate change and this is pronounced in many developing countries in America, Africa, Asian countries [2-4]. In Nigeria, there is a southward shift of the Rain Forest to produce the derived savanna. The translation of the Rain Forest to the derived savanna in Nigeria is well reported [5,6]. In Edo State, Nigeria, the Edo North zone has translated from the erstwhile Rain Forest to derived savannah [6]. The Edo Central and South zones still enjoy luxuriant Rain Forest. The environmental features of this translation include loss of trees, increased population of grasses, loss of forest biodiversity, loss of soil fertility, etc. Climatic factors have also tilted towards aridity such as reduced relative humidity, reduced rainfall, irregular rainfall pattern, increase in mean diurnal and annual temperature, etc.

The changes in the environment and weather factors resulted in reduced agricultural productivity, which is the mainstay of the communities in Edo North. In this part of the world, agriculture is weather dependent. The consequence is that any prolonged deviation from the usual weather pattern distorts the life pattern of these rural communities.

In Nigeria, the incidence of derived savannah was reported more than half a century ago [7] and the effect is manifesting in loss of agricultural productivity and hence loss of revenue. The natural consequence of economic deprivation is migration especially of the economically viable population. This will have negative social impact which could portend some danger for the immediate communities, the entire Edo State and the country at large. The cumulative effect of increased aridity, loss of trees and emergence of derived savanna includes reduced economic status of the natives, antisocial behavior among the youth and reduced social services [8]. The objective of this paper therefore was to evaluate six social factors of the threatened Edo North in comparison with Edo Central and Edo South.

2. MATERIALS AND METHODS

Edo State occupies latitudes 5°44'N and 7°37'N and longitudes 5°44'E and 6°43'E [1]. The Edo North in this study is marked by southern limit of latitude 6° 52'N [9]. Data were obtained from the Edo State Statistical Year Book [1]. Six social factors of the Edo North, Central and South were extracted. The factors were number of medical doctors in the government hospitals, number of primary school teachers, number of teachers in junior secondary class one and senior secondary class one, enrolment in primary one class and enrolment in junior secondary school class one. Data utilized were from 2003 to 2012, as available. The mean figures were converted to percentage, and evaluated by simple comparison.

3. RESULTS AND DISCUSSION

The concept of the derived savanna has assumed a global dimension especially in the transition zones of the Rain Forest and grassland of the tropics. In this regard, derived savanna has been reported in America, West Africa, Asia and Australia [3,4]. This is with attendant socio-economic impact on the natives such as reduced contribution to gross domestic product, migration, human trafficking, prostitution, drug cultivation/peddling/abuse, kidnapping, etc.

3.1 Medical Doctors and Primary School Teachers

The least increase in population of medical doctors in Edo State was obtained in Edo North at 82% from 2003 to 2012 compared with 150% and 99% in Edo Central and Edo South respectively (Table 1). This will impact negatively on health care delivery in Edo North. The place of medical personnel is vital to overall fitness of the population to contribute meaningfully to socio-economic development and for maternal and child health as contained in the Sustainable Development Goals of the UN [10,11]. In the case of primary school teachers, the range was narrow with increase of 29.74% in Edo North to 29.86% in Edo Central (Table 1). Notwithstanding, the least increase was obtained in Edo North. In Nigeria, basic education starts from primary school education and the disadvantaged position of Edo North will adversely affect the quality of primary education in Edo North. The importance of teachers in primary education cannot be overemphasized as it has been a vital component of intervention schemes for the school system in Nigeria [12]. The least figures obtained in Edo North suggest avoidance of Edo North by skilled medical and teaching staff.

3.2 Secondary School Teachers

There was overall decrease in population of secondary school teachers in Edo State with

34% decrease in junior secondary school and 12% decrease for senior secondary school. Despite the overall decrease in Edo State, the decrease was drastic for Edo North at 55% and 12% decrease for junior secondary and senior secondary schools respectively (Table 2). Secondary education is important as it prepares children for higher education. It provides semi-skilled labour force required in civil service and the private sector [13]. Reduction in number of teachers in secondary schools in Edo North will reduce the potential/ability of the children in Edo North for tertiary education. The relative stability of primary school teachers compared to secondary school is evidence of the relative efficiency of the coordinating agencies. The primary school teachers are coordinated by state universal basic education board (SUBEB) while secondary school teachers are controlled by post primary schools board. The SUPEB however has advantage over post primary schools board, as SUBEB has input of both federal and state governments, while the post primary schools board is essentially a state agency [14,15]. The double interest in SUBEB through state and federal governments may have accounted for more stable distribution of primary school teachers, inspite of the degradation caused by climate change in Edo North, Nigeria.

3.3 School Enrolment

The lowest increase in primary one enrolment was obtained in Edo North at 4.98% compared to 6.8% and 18.67% in Edo Central and Edo South respectively (Table 3). Increase in student enrolment in junior secondary school was the least in Edo North followed by Edo South and Central at 235%, 239% and 378% respectively. This may be evidence of migration of parents to the more stable farming conditions in Edo Central and South. Normally, children will relocate along with their parents. It may also suggest that parents can no longer pay fees for their children due to loss of farm land creating a future pool of illiterates. Challenges of illiteracy include social exclusion, poor hygiene and health, poor nutrition and low productivity [16]. This is the possible outcome of the climate change induced illiteracy in northern Edo State.

Table 1. Number of doctors in government hospitals in Edo State from 2003 to 2012 and primary school teachers from 2005 to 2012

Doctors in government hospitals				Primary school teachers			
Section	Year		Increase	Section	Academic session		Increase
	2003	2012			2005/2006	2011/2012	
Edo North	11 (9%)	20 (9%)	82%	Edo North	2229 (28%)	2892 (28%)	29.74%
Edo Central	08 (7%)	19 (8%)	150%	Edo Central	1564 (20%)	2031 (20%)	29.86%
Edo South	97 (84%)	193 (83%)	99%	Edo South	4105 (52%)	5327 (52%)	29.77%
Total	116	232	100%	Total	7898	10250	29.78%

Table 2. Population of secondary school teachers in Edo State from 2003 to 2012

Junior secondary school 1				Senior secondary school 1			
Section	2003	2012	Increase	Section	2003	2012	Increase
Edo North	207 (21.4%)	93 (14.7%)	- 55%	Edo North	229 (21.0%)	202 (21.2%)	- 12%
Edo Central	166 (17.2%)	86 (13.6%)	- 48%	Edo Central	169 (15.5%)	168 (17.6%)	- 0.59%
Edo South	593 (61.4%)	452 (71.6%)	- 24%	Edo South	691 (63.5%)	584 (61.2%)	- 16%
Total	966	631	- 34%	Total	1089	954	- 12%

Table 3. School enrolment in primary one and junior secondary school one in Edo State from 2003 to 2009/2010

Enrolment in primary 1				Enrolment in junior secondary school 1			
Section	2003	2009	Increase	Section	2003	2010	Increase
Edo North	18380	19296	4.98%	Edo North	5916	9835	235%
Edo Central	10840	11577	6.80%	Edo Central	3093	14846	378%
Edo South	19848	23553	18.67%	Edo South	10024	33994	239%
Total	49068	54426	10.92%	Total	19033	68675	261%

4. CONCLUSION

There was evidence of response of social factors to the degradation of Edo North due to climate change. This was evident in avoidance by skilled personnel such as doctors and teachers, and in reduced school enrolment. This is to the detriment of the Edo North communities and concerted effort to check this trend is hereby suggested. Such effort should be holistic and community based such as climate smart agriculture recommended by FAO [17].

COMPETING INTERESTS

Author has declared that no competing interests exist.

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