



## **ENVIRONMENTAL DEGRADATION AND CHANGING GENDER ROLES IN EBONYI STATE, NIGERIA**

**Akpa, Eugenia Chika**

Department of Sociology, Ahmadu Bello University Zaria, Nigeria

**E-mail:** [ecakpa@yahoo.com](mailto:ecakpa@yahoo.com)

### **Abstract**

Climate change is increasingly being recognized as a global crisis, but responses to it have so far been overly focused on scientific and economic solutions, rather than on the significant human and gender dimensions. There is need to place people at the center of climate change responses, paying particular attention to the challenges and opportunities that climate change presents in the struggle for gender equality particularly in the rural areas. An empirical research was conducted using both quantitative and qualitative methods to find, out among other environmental issues, how the degradation of the environmental resource base (land, forest and water) affect gender roles and relations in Agrarian communities of Ebonyi State. It was found that the gradual nature of environmental degradation in the area has direct impact on the people's sources of livelihoods and indirectly explains changing gender roles and relations.

**Keywords:** Climate change, global crisis, gender dimensions, livelihood pattern, environmental degradation

### **Introduction**

Climate change refers to the increasing erratic weather patterns, rising sea levels and extreme events that may be attributed to human activities and the greenhouse gas (GHG) emissions that have created global warming (Skinner, 2011). It is often viewed as a purely scientific and chemical phenomenon, and yet climate change is also a social, economic and political phenomenon with profound implications for social justice and gender equality. The degradation of the environmental resource base (land, forest and water) often results from climate change and changes in human socio-economic activities.

As weather patterns become increasingly unpredictable and extreme events such as crop failures, floods, heat waves or natural disasters become more common, the poorest women or men who have contributed the least to the problem find their livelihoods most threatened, yet they have the weakest voice and least influence on climate change policies. While women subordination does not necessarily mean that every man is better than every woman, it remains true that men generally have greater access to scarce resources and are more valued than women. Men's roles are equally accorded higher value than those of their female counterparts because gender differences often translate into inequality and discrimination against women.

Gender inequality plays a significant role in the society's definition of men's and women's access to ownership of land for farming purposes. It also influences decision on when, where, how and what to farm on a piece of land. This invariably affects the crop yield, directly or indirectly affects environmental degradation. The objectives of this article is to highlight the changing nature of the environment in Ebonyi State, the changing nature of gender roles , to highlight the impact of changing environment on gender roles and to suggest appropriate climate change responses to those changes in Ebonyi State.

## **The Nexus between Climate Change/ Environmental Degradation and Changing Gender Roles**

Men and women do not experience climate change or environmental degradation equally, just as they do not contribute to these change realities equally. Their contributions and experiences of these changes are often influenced by economic constraints and cultural norms particularly in rural areas. For example the gender division of labour that persist in the rural areas restrict women's access to paid employment meaning that their livelihood are dependent on climate sensitive sectors such as subsistence agriculture, and collection/ gathering common property resources. Yet gender inequalities in the distribution of assets and opportunities mean their choices are severely constrained in the face of degradation. Restrictions around land ownership for rural women mean they may not have access to productive land to farm, and lack of financial capital means they cannot easily diversify their livelihoods.

Men are equally negatively affected by climate change, particularly when they are poor for example, men may experience deep anxiety and stress when their livelihood are undermined as a result of climate change / environmental degradation and they are no longer able to fulfill their socially expected roles as providers. Men are also pressured into negative live styles such as drunkenness, sexual recklessness and abandonment of families and death when their livelihood is undermined by environmental degradation. Men are also affected in specific ways because of their social roles as providers or expectations that they should be 'brave' in times of disasters e.g. Floods, hurricanes. Climate change may reduce men's opportunities to take up paid employment, resulting to unemployment and low self-esteem for the man and increased poverty for the family.

One of the most challenging impacts of climate change upon human population is the strain that new environmental conditions puts on the availability of natural resources. Even though a direct causal relationship has not been established, it is already evident that water, energy and food sources are becoming scarcer as climate variability becomes more severe (Simns and Reid, 2006). This will have huge implications for women and for gender relations. As land productivity decreases and the global population rises, from 6.2 billion in 2010 to a predicted 9.5 billion in 2050, there are major questions around how enough food will be produced to feed this growing number of people at a time when land and water availability are decreasing? (Geo-science 2011). This has serious implications on gender relations, given that scarce resources are rarely equally distributed.

With both the production and consumption of food being highly gendered, gender roles will be affected. With women accounting for up to 70% of agricultural workforce in Africa, there are clear gender specific impacts of climate change on agriculture (IAASTD 2009). As rainfall becomes less predictable, making farm work more labor intensive, in many cases women will increasingly carry the burden of the additional work and have least access to necessary inputs. As climate change increases the likelihood of crop failure, women often face the most negative economic implications, as they have fewer assets to rely on and limited access to alternative sources of income or livelihood (Blackden and Wodon, 2006) As land productivity falls and the use of technology or chemical fertilizers becomes more necessary to sustain crop outputs, there is the danger that gender inequalities may be exacerbated due to women's reduced access to both technology and fertilizers. At the same time pressures on women in rural areas to collect water or fuel often means they have fewer hours to spend on productive income-generating activities than men. Women's lack of entitlement to productive resources, including land, livestock, agricultural implements and credit make them more vulnerable to food shortages. Their vulnerability to malnutrition is also linked to social factors and underlying power dynamics that influences who has access to food whether at national, community or household level.

As climate change affects the availability of traditional fuel sources (wood, farm residues and dung) and energy becomes more commoditized, scarce and expensive, it is essential that the gender dimensions be pointed out. It follows that women who are primary users of domestic energy will suffer more, particularly in terms of time spent in gathering fuel and the health impacts of

relying on traditional energy sources for cooking. Even with the new renewable energy sources (electricity) the increasing costs of generating it will still be disproportionately borne by the poorest (women).

With changing rainfall patterns and an increasing risk of water related disasters, not only will crop production and food security be affected, but there will also be less availability of clean water to meet people's basic needs. This is because many poor women access water from 'common property' such as rivers, streams, ponds. As water becomes scarce, the freedom to use these sources is being restricted. Water becomes a marketable commodity and contracted out to private providers. With users' fees being charged, only those households which can afford it can be connected to water mains. Since women have low income they will be forced to walk longer distances for a supply that is free. As the frequency and intensity of floods increases, more fresh water supplies will be contaminated and the incidence of water-borne diseases may rise, as mosquitoes, guinea worm etc. find more breeding grounds (WHO 2010). Women maybe more vulnerable to these diseases because of their gender roles in fetching water, their physiological differences from men and their roles as care givers to sick family members.

The foregoing scenario affect gender roles in agrarian communities of Ebonyi State, but the gradual nature of environmental degradation in this area makes it difficult for the people to know that it is indeed environmental degradation due to climate change that is responsible for the changes they witness in their gender roles.

## Materials and Methods

A survey using questionnaire was administered in six sampled agrarian communities of Ishiagu Enyigba Alibaru, Ogidiga, Enyimegalagu, Egugwu Umunaga and Ihenu Uburu representing the three senatorial zones of Ebonyi state. The total sample size was 291 drawn using Multi-stage cluster and Simple random sampling methods. Also 12 FGDs (male and female) groups each from the six sampled communities were conducted. Each FGD consisted of between 8-10 married males or females between the ages of 30-50 years. At the same time 6 SSIs were conducted with 6 opinion leaders a male and a female each from the 3 Senatorial zones and 3 KIIs were conducted with 3 heads of environment departments in each of the 3 LGAs covered. The questions covered the nature and causes of environmental degradation, the socio-economic impact, coping strategies and changes in gender roles and relations. A triangulation of these methods generated valid data used in this article.

## Results

The result of this study used in this article covers nature and causes of environmental degradation (land, forest and water) and the influence on changing gender roles.

***Nature and Causes of Land Degradation in Ebonyi State:*** When land degrades, farmers are the critical group that feels the impact and are the ones who can establish through experience, the existence of land degradation. A question asked the respondents to state, if they were aware of land degradation in their communities. In their responses an overwhelming, 259 (89.0%) said yes while only 29 (10.0%) said no. Data on causes of land degradation were sourced from survey instruments and from KII. The survey data are presented in Table 1.

Table 1 showed that a major cause of land degradation as observed by respondents is over cultivation of land (22.7%). This is closely followed by bad farming practices (21.3%) and mining activities (17.9%) The analysis shows that the causes of land degradation in the area are all related to human activities, namely, over-cultivation of land, bad farm practices, mining activities, grazing, land tenure system, lack of input and few extension workers. On the nature of land degradation one of the key informants (HOD Health/Environment Abakaliki LGA) said "...to the ordinary eye, the unschooled eye may not know that a lot is happening to the land. But judging from record of harvest before now it is obvious that there a lot of degradation. Before now, we used to harvest yam

**Table 1:** Respondents suggested Reasons for declining Land Productivity

Suggested reasons	Frequency	Percent
Over cultivation of land	66	22.7
Bad Farming Practice	62	21.3
Mining	52	17.9
Natural Causes	25	8.5
Lack of Input	10	0.3
Grazing	8	2.7
Land tenure system	5	1.7
Few Extension workers	1	0.3
No Response	62	21.3
<b>Total</b>	<b>291</b>	<b>100.0</b>

Source: Field Survey Data (2011)

**Table 2:** Ranking of respondents' views on reasons for forest degradation

Reasons	Agree	Disagree	Total
Bush burning	275 (96.0%)	16 (4.0%)	291 (100)
Commercial timber logging	233 (80.0%)	58 (20.0%)	291 (100)
Clearing of forest for farming	227 (78.0%)	64 (22.0%)	291 (100)
Clearing of forest for settling	191 (66.0%)	100 (34.0%)	291 (100)
Fetching of fire wood	173 (59.0%)	108 (37.0%)	291(100)

Source: Field Survey Data, 2011

as mighty as human being, sometimes we use NTA to farm it but now we discover that very few people harvest yam that will measure more than 2 feet long and that is an indication that the land is deteriorating in quality". This and other results show that the nature of land degradation in Ebonyi state is majorly the gradual degradation of the soil which usually presents itself as decreasing land productivity over time. By the time it becomes obvious the process will be irreversible.

***Nature and Causes of Forest Degradation in Ebonyi State:*** The survey data shows that there is a general decrease (70%) of forests in the study area. It also shows that the decrease is more severe in the southern part of Ebonyi State (50-60%) than in the central and northern parts of Ebonyi State (80 – 90%). A number of reasons for forest degradation were given and respondents were expected to rank their views, in a Likert response scale as shown in Table 2 in which bush burning 275 (96.0%) is a major cause of deforestation, followed by commercial timber logging 233 (80.0%), clearing of forest for farming 227 (78.0%), clearing of forest for settling 191 (66.0%) and fetching of firewood is the least 173 (59.0%). Bush burning is not only a traditional method clearing bushes for farming in the area, but hunters also set forests ablaze in search of games. This has implications on deforestation because it kills micro-organisms in the soil and exposes the land to erosion and heat.

***Nature and Causes of Water Degradation in Ebonyi State:*** On water degradation, results show that majority of the respondents 205 (70.4%) can still have three or more water sources available within their neighbourhood. Those who have two are 73 (25.1%) and those who have one are 13 (4.5%). Also, results from survey show that a large fraction, 75.3% (219) believe that the number of water sources available within their neighbourhood had changed since 20 years ago, while 24.7% (72) said they did not observe any changes. Though water bodies exist, the type of water available in the ponds, streams and rivers are also degrading in quality. Majority see the nature of water sources they access as coloured (40.2%) and muddy (31.6%) these are all signs of degraded natural water sources. Since other sources are either not available or not easily affordable the socio-economic wellbeing and the gender role of the people will be affected Investigation from survey instrument on reasons for the deteriorating nature of water is shown in Table 3.

**Table 3:** Respondents' Views on Factors Responsible for the Changing Colour of Water

Factors	Frequency	Percent
Flooding	123	42.3
Pollution from leaves in river bank	71	24.4
Dumping of refuse	14	4.8
Use of chemicals for fishing	12	4.1
Others	12	4.1
Drying up process	8	2.7
No Response	51	17.5
<b>Total</b>	<b>291</b>	<b>100.0</b>

Table 3 shows flooding (42.3%) followed by pollution from fallen leaves in river banks as major causes of water source degradation in the area. A female discussant speaking on the causes of water degradation said "long period of dry season and flooding during rainy season are two factors affecting our water sources". The existence of water source is one thing but how good are these sources? The clean nature of water sources in the area is changing due to human activities. When forests are cleared for farming, refuse and mine telling dumped into rivers, bad fishing practices are upheld, the natural water sources are affected. Flooding is an important sign of climate change.

**Impact of Land Degradation on Changing Gender Roles:** In this section classification of the activities pertaining to the use of the environment by gender is presented in Table 4 and subsequently changes in gender roles were analyzed across the three environmental resource base-land, forest, and water. Table 4 shows that both men and women gather medicinal herbs, apply fertilizer to crops, harvest crops, plants crops, transport crops, and clear land for farming as was indicated by 219 (75.3%), 218 (74.9%), 195 (67.0%), 186 (63.9%), 161 (55.3%), and 137 (47.1%) respectively. Predominantly women's roles include gathering of firewood, weeding and fetching water as was indicated by 265 (91.1%), 258 (88.7%), and 228 (78.4%) respectively. While predominantly men's role include the use of tractors to prepare farmland, tilling of farmland, fishing and logging of wood for sale as was indicated by 242 (82.2%), 211 (72.5%), 205 (70.4%), and 120 (41.2%) respectively. However, it is worthy to mention that these days there are no rigid gender division of role. Since after instructing that the respondents specify which gender plays a particular role, one still observed that the roles cross-cross. The respondents were asked if changes in environment have affected the gender roles, in the last 20 years, and, 241 (82.8%) said no. This is because of the gradual nature of degradation which does not allow direct awareness of the intricate links. However, the gender disaggregation of these roles shows that some traditional gender specific roles are being shared by both genders.

**Table 4:** Respondents' Perception of the Gender Roles in Farming Communities in Ebonyi State

Activities	Responses			
	Male	Female	Both	Total
Gathering of Medicinal Herbs	59(20.3)	11(3.8)	219(75.3)	281(100.0)
Application of Fertilizer To Crops	58(19.9)	12(4.1)	218(74.9)	288(100.0)
Harvesting of Crops	74(25.4)	19(6.5)	195(67.0)	291(100.0)
Planting of Crops	21(7.2)	82(28.2)	186(63.9)	289(100.0)
Transportation of Harvested Crops	69(23.7)	59(20.3)	161(55.3)	289(100.0)
Clearing of Land For Farming	50(17.2)	101(34.7)	137(47.1)	288(100.0)
Gathering of Firewood For Cooking	5(1.7)	265(91.1)	19(6.5)	289(100.0)
Weeding of The Farms?	3(1.0)	258(88.7)	28(9.6)	289(100.0)
Fetching of Water For House Use	7(2.4)	228(78.4)	18.6	289(100.0)
Using Tractors To Prepare Land	242(83.2)	2(0.7)	26(8.9)	270(100.0)
Tilling of Land For Planting	211(72.5)	8(2.7)	69(23.7)	288(100.0)
Fishing	205(70.4)	8(2.7)	76(26.1)	289(100.0)
Logging Wood For Sale	120(41.2)	101(34.7)	66(22.7)	287(100.0)

Source: Field Survey Data, 2011

**Table 5:** Cross Tabulation of Responses on Impact of Low Crop Yield on the Role of Clearing of Land for Farming

Level of Agreement on Impact of Low Crop Yield	Responsibility for Clearing of land							
	Male		Female		Both		Total	
	Count	Exp.	Count	Exp.	Count	Exp.	Count	Exp.
Strongly impact	31	28.4	49	59.8	90	81.7	170	170
Normal impact	11	16.6	48	34.8	40	47.6	99	99
Not existing	4	2.3	4	4.9	6	6.7	14	14
Strongly not existing	2	0.7	0	1.4	2	1.9	4	4
<b>Total</b>	<b>48(17%)</b>		<b>101(35%)</b>		<b>138(48%)</b>		<b>287(100%)</b>	

Pearson  $\chi^2 = 16.563$ , df = 6, p = 0.011

To analyze the impact of land degradation on gender roles, a cross tabulation of the two variables is presented in Table 5. Low crop yield (land degradation) was chosen as the dependent variable because it is a modal impact of land degradation in the area. Clearing land for farming (gender role) was chosen as independent variable because it is both a male and female role. The Pearson chi-squared analysis shows a significant ( $p < 0.05$ ) relationship between level of perception of impact of low crop yield and responsibility for clearing land attributed to in gender role. Therefore, the relationship between the two variables is statistically significant. Table 5 also shows that 101 (35%) accepted that farm clearance is a female role and only 48 (17%) accepted that it is a male role. This is contrary to the traditional gender role description in the area, where farm clearance, which demands physical strength, was seen to be male role. It can therefore be inferred that land degradation is influencing changes in gender roles. In the face of land degradation women work harder, they no longer wait for the men to clear the land before they farm. It is possible male labourers are scarce and more expensive to hire since most able bodied men have migrated in search of greener pastures.

**Impact of Forest Degradation on Gender Roles:** To analyze the impact of forest degradation on gender roles, a cross tabulation of the two variables is presented in Table 6. Difficulty in getting firewood (forest degradation) was chosen as the dependent variable because the use of firewood is a basic need in a rural community. Logging wood for sale (gender role) was chosen as independent variable because it is shown as both male and female role. The Pearson chi-squared analysis shows a very significant ( $p < 0.05$ ) relationship between difficulty in getting firewood and responsibility for commercial logging of wood. Table 6 also shows that 100 (35%) respondents accepted that commercial wood logging is a female role and 118 (42%) accepted that it is a male role. This is contrary to the traditional gender role description in the area, where fetching of firewood is predominantly female gender role. Logging of wood for sale is a modern male gender role, because of the commercial value it has attained and the physical strength required for this activity. For women to get involved in logging wood for sale and not the traditional gathering of dead branches for domestic use, means a change in gender role is occurring. It may be that the deforestation observed in this study area has increased the commercial values of firewood and has pushed women into logging wood for sale to generate more income. The implication is that the problem deforestation will be exacerbated.

**Table 6:** Cross Tabulation of Impact of Low Crop Yield on Clearance of Land for Farming

Difficulties of getting fire wood is an impact of forest degradation	Responsibility for commercial wood logging							
	Male		Female		Both		Total	
	Count	Exp.	Count	Exp.	Count	Exp.	Count	Exp.
Strongly agree	35	26.2	20	22.2	8	14.6	63	63
Agree	58	57.3	47	48.6	33	32.1	138	138
Disagree	21	24.5	17	20.8	21	13.7	59	59
Strongly disagree	4	10.	16	8.5	4	5.6	24	24
<b>Total</b>	<b>118(42%)</b>		<b>100(35%)</b>		<b>66(23%)</b>		<b>284(100%)</b>	

Source: Field Survey Data, 2011 Pearson  $\chi^2 = 22.119$ , df = 6, p = 0.001

**Table7:** Cross-tabulation of impact of spending more time looking for water and the role of fetching water for use at home

More time spent in search of water is impacting on the gender roles	Who Fetches the Water							
	Male		Female		Both		Total	
	Count	Exp.	Count	Exp.	Count	Exp.	Count	Exp.
Strongly agree	2	1.6	53	52.2	11	12.2	66	66
Agree	4	3.5	121	114.7	20	26.8	145	145
Disagree	1	1.1	27	36.4	18	8.5	46	46
Strongly disagree	0	0.7	26	23.7	4	5.5	30	30
<b>Total</b>	<b>7(0.02%)</b>		<b>227(79%)</b>		<b>53(18%)</b>		<b>287(100%)</b>	

Pearson  $\chi^2 = 16.793$ ,  $df = 6$ ,  $p = 0.010$

**Impact of Water Body Degradation on Changing Gender Roles:** To analyze the impact of water body degradation on gender roles, a cross tabulation of the two variables is presented in Table6. Spending more time searching for water (water scarcity/degradation) was chosen as the dependent variable because water is a basic need in life. Fetching water for home use (gender role) was chosen as independent variable because it is shown as both male and female role. The Pearson chi-squared analysis shows a significant ( $p < 0.05$ ) relationship between the respondents' perception of the impact of spending more time getting water for family use. Table7 shows that the role of fetching water for home use is still mainly that of women 227 (79%) as compared to number of men 7 (0.02%). This shows that when water sources degrade, it is the women who suffer most because they have the role of fetching, storing, and using water at home. Very few men engage in this role in the rural areas because this activity has not yet been commercialized there.

## Discussions

An understanding of the nature and causes of environmental degradation are important factors in determining the means of mitigating the impact on the people. Results show that environmental degradation in Ebonyi State is of a gradual not the disaster nature. They occur in the course of normal human activities for daily living. The insidious nature of this problem makes it difficult to realize what is going on, the linkages and ways of mitigating the problems.

Results show that, poor crop yield is an outstanding sign of land degradation, this is caused by lack of fallowing, continuous cropping of same crop specie, delay in access or no access to fertilizer, scarcity of farm labourers, general apathy to farm work, desperation to survive, presence of lead and other heavy elements in the soil, bush burning and erosion. All these have implication for environmental degradation, gender relation and the socio-economic well-being of the people of Ebonyi State. We agree with Adewale (1991), that most of the measures to control environmental degradation are focused on how to rescue the physical environment to the neglect of measures to modify environmentally harmful human activities. Also from experience, disaster forms of degradation (flood, gully erosion, desertification) are immediately attended to more than gradual degradation in Nigeria. It follows therefore that if natural reconstitution of land through vegetative growth and decay is over stressed by over population and lack of practice of shifting cultivation, the land will continue to degrade.

To further discuss the nature and causes of degradation in Ebonyi State the findings and argument of Cleaver and Schrieber (1994) is pertinent. According to them shifting cultivation was practiced under conditions of slow population growth and abundant land. Farmers merely shifted to virgin lands when soil fertility declined which allows for natural reconstitution of land through vegetative growth and decay, but the scope for further expansion of farm land has narrowed due to rapid population growth and the use of land for other developmental projects. Now rural people are compelled to remain on the same parcel of land still using their traditional production techniques. In the agrarian communities of Ebonyi State, people are aware that the land is exhausted and need replenishment but poverty and desperation to survive forces them to continue to degrade their environment.

The quantitative and qualitative data pointed out how changing environmental conditions and natural resource bases are actually changing the ways things are done. Also, women now take up roles that were meant for their male counterparts thus, putting extra burdens on them. This has brought about some conflicts in gender relations in the area. Whereas, men do not contend the changing roles of women, they argue that it is natural, and they take it for granted. More men have gone into white collar job leaving their wives who are educationally less advantaged to take care of agricultural activities in spite of the high manual labour it requires in Nigeria. It was found that the women's increased burden of work and family responsibility is related to the inability of their husband to meet the basic need of their families (Ezumah and Domenico, 1995). Hence, many women are compelled to perform certain roles like tilling of soil, making mounds, clearing the farm lands which were traditional men roles. This is in addition to their other roles which combine to jeopardize their wellbeing. Instead of encouraging men to participate in domestic chores thereby mitigating women's experience of drudgery, the cultural norms discourage men from assisting their wives in traditionally designated women's roles. This contravenes article five of CEDAW, that calls for practical steps to be taken towards the elimination of prejudices and customs that are gender discriminatory. Besides other conditions of gender inequalities and discrimination, the nature of the environmental degradation and circumstances of work performances by many women render them emotionally and physically exhausted.

## Conclusion and Recommendation

Investigations revealed that indeed climate change which has direct impact on environmental degradation has indirect impact on changing gender roles in the agrarian communities of Ebonyi State. It is recommended that government should make efforts to reduce the rate of land degradation through increased education and investment in sustainable land use practices. Government should make efforts towards poverty eradication by focusing on all parties and groups in the communities, especially women who are most affected by environmental degradation. Women should be considered in the allocation of communal land for farming. There is need to focus on women's needs and contributions to the environment capital. This is because women and environment are shadow subsidies that enable profits to be made.

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