



THE ROLE OF YOUTH IN MITIGATING THE EFFECTS OF CLIMATE CHANGE IN BAUCHI STATE

GARBA A.

Department of Forestry Technology, Federal Polytechnic Bauchi.

Abstract

This is to study the role of youth in mitigating the effects of climate change in bauchi state.

The climate change is one of the worst environmental hazards our ecosystem is being faced and the condition being aggravated through anthropogenic activities of human (fuel wood collection, hunting using fire as a

tool fire as a tool for

Keywords

Effect, Role, Climate, Change, Effect.

extracting animals from their habitat, overgrazing, indiscriminate cutting for lumbering, bush burning and emission from the burn of fossil fuels), all humanly possible

INTRODUCTION

An overview climate change

Food is one of the basic needs for human existence on earth, but in sub-Saharan Africa, meeting this task is becoming a very herculean as a result of extreme weather condition which is linked to climate change. This condition contributed to death due to malnutrition, poverty and diseases (Gautam and Bhardaj, 2011).

Climate is the average weather pattern of a place over a long period of time (not less than 30 years). Climate change is one of the biggest crises facing humanity and is considered as the catch-all term for the shift in worldwide weather phenomenon associated with an

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and most especially environmental*

Increase in global average temperatures.

Reliable temperature records began in 1850 and our world is now about one degree Celsius hotter than it was between 1850 and 1900, a period commonly referred to as pre-industrial era. Change in climate pattern is being induced by human activities (Ghini *et al.*, 2008) and has been acknowledge as the greatest challenge to mankind which causes nearly 400,000 deaths per annum in addition to over 1.2 trillion United State Dollar loses globally (Salaudeen *et al.*, 2016).

The impact of climate change has serious consequences on agricultural activities owing to 0.74⁰C average annual global increase in temperature in the last 100 years and atmospheric carbon dioxide (CO²) concentration increased from 280ppm in 1750 to 400ppm in 2013. These changes have negatively impacted on the cultivation and growth of the different crops on the earth (Gautam *et al.*, 2013). Changes in climate are still going unabated and it has been projected that temperature will increase by 3.40C and CO₂ concentration to 1250ppm by the year 2095, as a result of gas emission generated by humans (Salaudeen *et al.*, 2016).

Climate encompasses abiotic factors such as temperature, rainfall, sunshine, relative humidity and wind. These fundamental components of climate exert obvious impact on crop production and yield per unit area, individually or through their interactions (Gautam *et al.*, 2013). Climate change has the tendency to increase frequency of drought, flood and heat waves (Mittler and Blumwold, 2010) and may reduce growing season in many regions. In addition, it causes extensive salinization as sea levels rise and a decrease in land suitable for agriculture particularly in central Europe and Africa (Salaudeen *et al.*, 2016).

Climate change can cause decline in the duration of growth of many crops-essentially the crops will mature too quickly with its attendant low seed production. For any increase in one degree Celsius in global mean temperature, corn yield will reduce on average of 7.4 percent, wheat 6 percent and rice 3.2 percent.

Climate change and weather variability have increasingly been the main drivers of loss of natural resources, environmental degradation, loss of livelihoods and massive population movement. Climate change manifests as drought or flood from time to time (Yunusa, 2015). It has been observed that wetter and drier periods alternate (Adams, 2001) and droughts periodically rather than continuously, occurred.

The climate conditions and challenges of agricultural production puts Africa at cross roads of food security and poverty. It is in this context that climate change is said to be inducing disasters and risks of particularly livelihoods disorganizations; and their blocking the possibilities of poverty reduction in Africa (Agbo *et al*, 2013) living the linkages between climate change and development particularly with respect to economic growth and human development, Nigeria is precariously at risk of climate consequences in the areas of food security and nutrition, poverty and hunger. A major outcome of climate change that threatens development in Africa is desertification, incidence of flood and environmentally induced migration (Yunusa, 2015). In view of these attributes of climate change, this paper therefore, examines the effects of climate change as it effects Bauchi State and show case to youth some mitigating actions expected of them in order to subsidize its negative impacts.

Effect of climate change in Bauchi state

In Bauchi State the negative effects of climate change manifested in the following ways:

- 1) Desertification
- 2) Flood
- 3) Drought
- 4) Reduce agricultural yield
- 5) Siltation of rivers
- 6) Migration of people
- 7) Emergence of Tippah and related grasses
- 8) Diseases incidence
- 9) Economic loses
- 10) Increased temperature
- 11) Prevalence of wild fires

- 12) Destructive of wild life and their habitat
- 13) Deforestation
- 14) Hunger
- 15) Poverty
- 16) Unemployment
- 17) Rural to urban migration

1. Desertification: This is a critical of environment which subjected it to a state of non-performance in terms of crop production and conservation values. In dry land, live of vulnerable people are made up of the poor, the landless or owners of marginal and unproductive land and are therefore, under constant threats of various types of insecurity, unemployment and exclusion from main stream socio-economic activities.

In Bauchi state, the process of desertification is active in such Local Government Areas (LGAs) of Darazo, Alkalri, Zaki, Dambam, Misau, Gamawa, Katagum, Itas/Gadau, Shira/Yana and Ganjuwa. These are frontline Local Government Areas that are under the pressure of extending boundaries of the desert and as well face the challenges of food insecurity, poverty and hunger. A desertification process that is induced by human activities and drought, reduce economic production activities and create life threaten conditions. Indeed, as the desert expand, crop tend to fail due to poor soil performance, incidence of death of livestock increases and outright hunger becomes a real challenge that threatens human survival in these front lines LGAs. In Bauchi State, human activities that favors the advancement of desert include fuel wood collection, organized farming, hunting using fire as a tool and lumbering.

These activities destabilize the ecosystem as biotic and abiotic interactions were defaulted, human populations disturbed and livelihood activities no longer easily obtainable.

2. Flood-the negative effects of flood resoling from the excesses of climate change are clearly being noticed in Bauchi State in recent years. The 2019 flood of Dindima in Bauchi Local Government Area, which completely submerged primary school leaving only the roof

visible and the closure of Bauchi to Gombe highway at Dindima bridge for several hours.

Flood impacted negatively among the farming communities of Buzawa, Garin dole and kacokal in Itas/Gadau Local Government Area of Bauchi State where more than 150 hectares of cultivated land were completely submerged leaving the farmers with zero yields of cereals and vegetables. Alkaleri to Futuk road experiences the consequences of flood to the extent of completely collapsing more than three bridges and culverts. In addition, seasonal pond was expanded and converted into perennial water body covering many hectares of farm land and all the free rooting trees there in died as a result of suffocation, only standing as dry wood as evident along Jama'are to Kano road just after Buzawa village in Itas/Gadau Local Government Area of Bauchi State before Kyawa.

The expansion of river Sakwa in Zaki Local Government Area forced many inhabitants of old sakwa to migrate to new Sakwa just as river Gagidiba in Shira Local Government Area forced the people of old Gagidiba to the new Gagidiba. The new Gagidiba is on a threat of relocation again because the river had already washed away the road linking Gagidiba to beli at a point more than 1.5km long close to the new Gagidiba.

3. Drought- Bauchi State being one of the Sahelian State in Nigeria was worse hit by drought of between 1972 and 1984 with grave consequences for Gamawa, Katagum, Itas/Gadau and Jama'are Local Government Areas. The effects of drought in these LGAs ranges from low crop yield per unit area, loss of forest resource and death of livestock.

These LGAs of Bauchi State faces persistent problems of variably in rainfall, which is the major driver of vulnerability in these areas. Populations in these LGAs are among the economically less privileged and most vulnerable to climate change and land degradation. Considering the growing consensus in the scientific literature, that over the coming decades, high temperatures and changing rainfall levels caused by climate change will be unfavorable for crop growth and yield in many regions and

countries. The drought prone areas of Bauchi State may likely experience low crop yield and being mostly agrarian, the situation may be of great concern as many may be flushed out of agricultural business and therefore, rendered unemployed. As a result of foregoing, Bauchi State is precariously at risk of climate change consequences in the areas of food security and nutrition, employment, famine and energy crises as a result of very scarce forest resource.

4. Reduced agricultural yield-increase in temperature forced working group to work for only few hours instead of working for the whole day as it used to be before the full manifestation of climate change. This condition makes many youth to become uninterested in farm business and therefore resort to other economic activities at the detriment of food production. It was also observed that at high temperatures, agricultural crops mature too quickly with corresponding low seed production.

Increase in temperature increases the rate of transpiration and leaf burn thereby creating imbalance between water intake and water loss to atmosphere. This condition affects the ability of crops plants to make the best utilization of sunlight and therefore photosynthesis becomes a problem and its attendant low crop yield per unit area.

5. Siltation of river: the manifestation of climate change in Bauchi State is also being felt in the area of siltation of rivers in which very important historic rivers across the state had been silted or at various stages of siltation.

Zakwafi river in Warji LGA was a host to a famous annual Dagu fishing festival in the 70s. during such festival, varieties of fishes of different dimension were caught but presently, a youth of less than 25 years can only perceive the story of such important economic event.

River Nahuta taba in Toro LGA in the last 25-30 years was a scene navigation using motorized boats as a result of its unfathomable depth and also a host to annual Nahutan taba fishing festival where different varieties of fishes were caught. However, as a result of variability in climate parameters, none of these important economic

activities is being done; this river is currently being crossed by pedestrians.

River Danewa and river Rafin Gabas Madara district of Katagun LGA no longer collect water but only serves as a drinking pond for livestock within 1-2 months after rains.

River Ludaya in Buzawa, Itas/Gadua LGA which used to be a host to an important Buzawa annual fishing festival have ceased to offer such opportunity since 2015 because of flood and its attendant siltation.

All these rivers no longer provide fishing and other navigational activities as a result of climate change induced by anthropogenic activities of human.

6. Prevalence of wild fires-occurrence of super charged wild fires as weather leads to drier bush which fuels massive blazes. Deforestation aid in wild fire. The fire is either ignited by lightening or intentionally by humans. Wild fires bring with it both direct health effect in the form of burns, as well as cascading effect on respiratory health from inhaled smoke and mental health. Wild fire incidence is an annual event in most parts of Bauchi State.
7. Destruction of wildlife habitat –Desertification and flood causes variability of climate contributed immensely in the destruction of wildlife habitat and its attendant loss of faunal resources. Bauchi State is home to the famous Yankari game reserve and Lame Burra game reserve. The deforestation effects have rendered many wild animals vulnerable to attack by poachers as evident in Dalli forest reserve where almost all the trees removed leaving only shrubs at distance positions.
8. Diseases-climate is increasing the risk of contracting dengue, transmitted by the mosquitoes as a result of fluctuation in high and low temperatures in a day. Cases of malaria are being reported throughout the state on daily bases.
9. Unemployment- Desertification and flood induced by climate change causes many inhabitants of Bauchi State to loses their jobs. Typical farm land was taken over by water as a result of flood and fisher men whose source of fishing get silted over years as do

happened to Zakwafi community in Warji LGA and Nahutan taba community in Toro LGA. Iyan Gwalli community of Gamawa LGA also experienced the same bitter taste of climate change.

Other areas of great concern in Bauchi State include hunger, poverty and movement of youth from rural areas to cities within and outside the state. This situation has economic implications because majority of youth of working age will leave rural areas, farming may suffer and food production will drop drastically.

The rainfall patterns of Bauchi State have completely changed both in duration and frequency there by putting the farmers in a state of confusion. The rains of yester years drops quietly unlike rains of between 2010 to date which comes with noisy thunder and destructive wind which normally destroy shelter of many communities. A typical example was rain destruction of 2014 in Kandahar ward in Bauchi metropolis.

Expected roles of youth towards mitigating the problems of climate change in Bauchi state

Youth in Bauchi State are expected either individually or in group (clubs, associations and cooperative societies) to take part in activities capable of mitigating the effects of climate change, through:

1. Production of economic and conservation tree seedlings
2. Planting trees around houses, markets, mosques and churches
3. Planting trees in and around farm land
4. Creation of awareness on the need to stop bush burning and only use control fire regime in farm preparation
5. Creation of awareness among the general populace on the need to join the crusade of averting the negative impact of climate change
6. Engage in sustainable livelihood in other economic activities rather than depending on the exploitation of forest resources.
7. Creation of awareness on the need for massive enrolment of children into schools
8. Establishment and protection of watershed plantation
9. Creation of awareness on the urgent need to stop indiscriminate cutting of trees

In conclusion, climate change is one of the worst environmental hazards our ecosystem is being faced with and since its condition is being aggravated through anthropogenic activities of human (fuel wood collection, hunting using fire as a tool for extracting animals from their habitat, overgrazing, indiscriminate cutting for lumbering, bush burning and emission from the burn of fossil fuels), all humanly possible efforts should be done to mitigate its menace and most especially active participation of youths in environmental protection and rejuvenation.

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