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RESEARCH ARTICLE

THE 1986 LAKE NYOS GAS DISASTER IN CAMEROON: CHALLENGES AND IMPLICATIONS ON SURVIVORS AND THE LIVESTOCK ECONOMY

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Abstract

This paper seeks to examine how the Lake Nyos gas disaster of 21 August 1986 affectedlivestock production and cattle rearing within the environment of Subum, Cha and Nyos. It brings to the forefront, the post-disaster effects onthe pastoral cattle rearing community. Thepolicies and strategies put forth by the various stakeholdersat the national and international levels have partially addressed some of the worries posed by this disaster, even thoughthe area is still in dire need of government and humanitarian support to improve onthe sector.The paper argues that, the resettlement of these livestock breeders could improvethis sector and render the environment sustainable for human habitation. Gleaned from a wide range of primary and secondary sources, the paper concludes that there isabsolute need for the government of Cameroon to tackle these long-term difficulties faced by these communities and to develop an effective livestock policy geared towards improving the livelihoods of the people around Lake Nyos.

Introduction:-

The sudden catastrophic release of gas from the Lake Nyos on 21August 1986had some devastating effects on the environment. The aftermath of the event led to the dead of many people and livestock. Nyos is a small village found in the Menchum division of the North Westregionof Cameroon. This ghastly calamitywhich released carbondioxide (CO_2) into the atmosphere killed about 1850 people and over 3000 cattle(Baxter et als., 1989: 334). Prior to the explosion, the people were involved in livestock keeping especially cattle, goats, sheep, pigs, fowls and others. According to the report presented by Rev. Father Ten Horn concerning the resettlement of the Lake Nyosgas victims, approximately 2000 people were homeless, 1800 people died and a total number of 364 sheep and 561 goats ceased breathing due to the inhalation of the toxic gas (WRCA, 1988: 18). From the above contention, it can be deduced that livestock keeping and cattle rearing played an important role in the socio-economic lives of the people. This was because the income generated from this activity contributed in improving not only the living standard of the people but they were equally capable of educating their children, provision of their basic needs as well as providing the health care needs and other miscellaneous.

By April 1988, a survey was conducted under the supervision of the Catholic Authorities of the Archdiocese of Bamenda and the National Commission for the Rehabilitation of the Lake Nyos Gas Disaster victims to set up special camps. It was during this investigation that some of the survivors (Hausas and Akus) who were graziers started requesting compensation for their cattle lost during the disaster. However, this request fell on deaf ears as the priority at the moment was the restoration of homeless people in their various camps and the provision of immediate

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facilities that could remedy the situation at stake. In the meantime, cattle rearing and the keeping of other small ruminants resurfaced as individual efforts were put in place to continue with this economic activity. Furthermore, besides its lucrative nature, the Hausa, the Fulani and the Aku people saw it as an absolute necessity to continue keeping their cattle because they considered this activity as a way of life.This paper examines the imprint of the disaster on the livestock sector, showing how it threatened the livestock economy, and how interventions by different stakeholders in the livestock sector facilitated the management of the Lake Nyos gas disaster.

Background and an Overview of Livestock Rearing Prior to the Disaster:

Lake Nyos had long been quiet before the disaster occurred. Farmers and migratory herders in the West African country of Cameroon knew the lake as large, still and blue (Blaikie et als., 1994: 30).But on the evening of August 21, 1986, people living near the lake heard rumbling. At the same time, a frothy spray shot hundreds of feet out of the lake and a white cloud suddenly appeared over the water (Ibid., 43). From the ground, the cloud grew to 328 feet (100 meters) tall and flowed across the land. In the meantime, when farmers near the lake left their houses to investigate the noise, they lost conscious.

The heavy cloud sunk into a valley, which channeled it towards settlement areas. People in the affected areas collapsed along their tracks, home, on roads or in the field. The Nyos and Kam villages werethe first tobe destroyed by the cloud leading to the dead of four inhabitants. The valley split and the cloud followed, killing people up to 15.5 miles (25 kilometers) away from the lake. Over the next two days, people from surrounding areas entered the valley to find the bodies of humans and cows lying on the ground. By August 23, the cloud had mostly blown away and the silence suddenly disappeared. After being unconscious for up to 36 hours, some people resuscitated and found out that their family members, neighbors and livestock were dead.

Lake Nyos Disaster and Its Implications on Livestock:

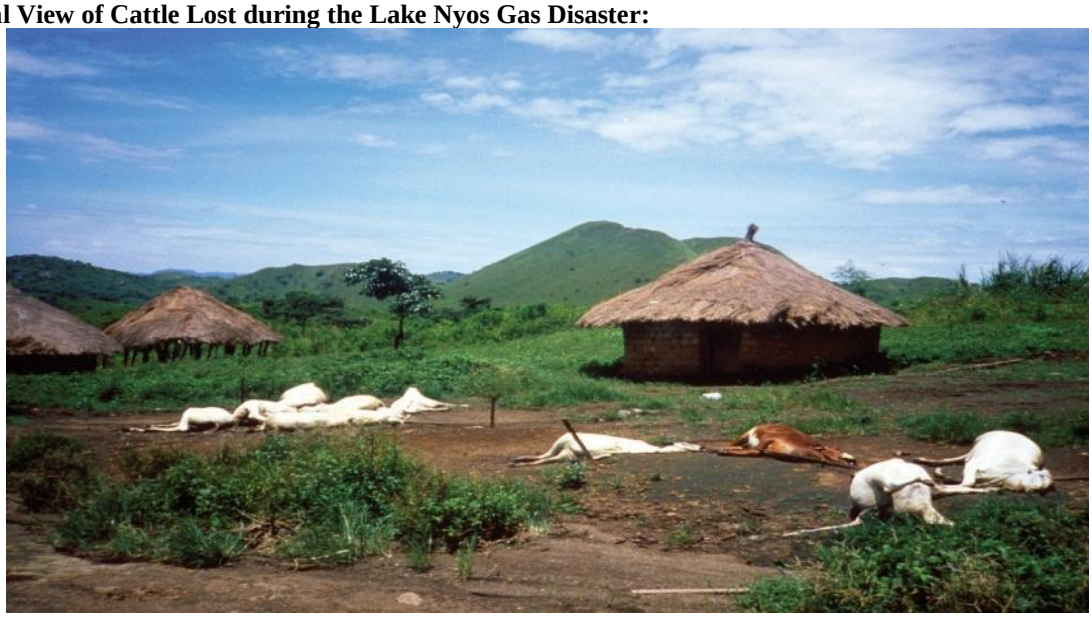
Nyos is a small village found in Fungom Sub-division inMenchum Division of the North West Region of Cameroon. Lake Nyos is located 6°26' N of the equator and 10° 18'east of the Greenwich Meridian (Musa, 1987: 89). The lake is found on a steep hill of 1,214m high, adjacent to Nigeria. Lake Nyos lies within the Oku Volcanic Field at the northern boundary of the Cameroon Volcanic Line, a zone of volcanic activities that extends to the southwest via the Mount Cameroon. Lake Nyos occupies a maar crater which was formed from a hydro volcanic eruption 400 years ago. The lake covers an area of about 1.5 km and is over 200m deep. In the rainy season, the excess lake water escapes over a low spillway cut into the northern rim of the maar crater, and down a valley through Nyos village.

The impact of the calamity as reported by both national and international stakeholders, concentrated mostly on the rate of mortality of people and livestock. The immediate outcome of the disaster is that the death of about 3000 cattle in Nyos affected the supply of beef in the North West Region. However, this affected the local economy and their cumulative effects on the country's economy. In many parts of Cameroon, the effect of natural catastrophe on the immediate environment is tremendous and remains an issue to be addressed.

Generally, the pattern of death within the area was not uniform. For example, in the Nyos area, four out of five goats died and four out of nine family members survived (WRCA, 1987). It is worth mentioning that cattle in the low lying areas perished while those at higher elevation were still grazing normally. The birds and insect population were significantly reduced for at least 48 hours but the plant life remained essentially unaffected. However, the human and animal population that did not survive died very quickly with no signs of panic or discomfort.

In addition, a greater part of the settlers lost their main source of income as a result of the disaster. Their main source of income was from the sale of cattle, farming and hunting. Most of them lost large numbers of livestock such as herds of cattle, goats, ship, fowls and the displacement from their villages have prevented them from the opportunity to benefit from the rich agricultural yields of the fertile soils in disaster zone. The loss of thousands of cattle during the disaster incident also had consequences for income that was generated mostly by women in the region from the sale of dairy products and fresh cow milk. Milking cows was a major income activity for many women especially the elderly (Etaka, 2007: 15). Etaka assessment report revealed that 94.8% of the camp's residents have not recovered from the disaster though it occurred more than two decades ago (see Fig. 1).

A Partial View of Cattle Lost during the Lake Nyos Gas Disaster:



Prior to the catastrophe, the people were engaged in subsistence agricultural activities for a living. They were engaged in two main occupations with 75% involved in farming while 11.8 % were graziers (Ibid., 20). The settlers complained of the small pieces of land given to each family for farming which was disproportionate to the increase in family sizes in their resettlement in the camp. In addition, the soils around the camp are not as fertile as those in their native land. The poor yields from their farms are not sufficient to feed their families and provide extra income for their other pressing needs. Survey data shows that the average monthly income from farming and cattle rearing is 12.900 CFA and 14.500 CFA respectively while about 96 % of both farmers and herders still have less than 30.000CFA francs monthly Blaikie et als., 1994: 55). The elderly people are the most vulnerable because it was revealed that poor health and lack of energy or weakness makes then unable to engage in any physical activity like farming and livestock rearing.

In addition, the population of Menchum area and the North West Region witnessed tremendous hikes in the prices of cattle and its by-products. In fact, prior to the disaster, a cow which was sold at 160, 000F CFA rose to about 300 000F CFA after the disaster(Fotabong' 1986: 23). This sudden rise in the price of cows emanated primarily from the disaster. As a result of this, the livestock sector was affected negatively due to the drastic loss of cattle during the calamity. However, this dreadful event of the Lake Nyos that claimed not only the lives of people but also that of animals, leaves in the minds of Cameroonians in general and the residents of Menchum Region in particular.

Furthermore, the demographic impact of the disaster cannot be undermined. The disaster almost ravaged entirely the population of Cha, Subum and Nyos people. Eye witnesses of the event narrated that immediately after the tragic event occurred, there were corpses on all the roads in the three villages most affected by the gas hazard. Some of the victims died in deep sleep while others died during conversation. A significant proportion of the victims died while attempting to escape. Written evidence suggests that Nyos village had the highest number of deaths because it was the nearest village to the lake. The population of the affected villages dwindled substantially.

Besides humans, livestock especially cattle and fowl also suffered from the adverse effects of the toxic gas released from the lake Nyos. Besides domestic animals, the lethal gas also killed wild birds, amphibians, reptiles and insects indiscriminately. Credible written evidence indicates that 3,909 cows died during the disaster while 3,324 fowl also died. After the disaster, the jangili tax which Wum Rural Council often collected from cattle raisers in Cha, Subum and Nyos declined by 7,000,000 France CFA annually (Ibid., 24). Transit fees collected from cattle raisers by the council were also lost. The lethal gas did not spare the lives of goats and sheep. A total of 364 sheep and 561 goats ceased breathing due to the inhalation of the toxic gas.

Efforts at Revamping the Livestock Sector:

The impact of natural hazards and/or disasters in Cameroon continues to hit local communities, but the government lacks the ability to manage disaster risks adequately. This is partly due to the fact that the necessity to mainstream disaster risk reduction into local governance and development practices is not yet an underlying principle of Cameroon's disaster management framework. Although the government of Cameroon has reinvigorated efforts to address growing disaster risks in a proactive way, it is argued that the practical actions are more reactive than proactive in nature. The challenges and opportunities deplored by the government in response to the governance of disaster risks zones are ineffective.

The efforts put in place by some humanitarian organizations such as the Heifer Project International (HIP), the Lions Club International and the Catholic Church to supplement the Government's endeavors to achieve its goals in surviving and sustaining the victims cannot be undermined (Musa, 1987: 45). With the technical assistance put in place, animal husbandry was revived. The system of ploughing and sowing of pasture, the construction of water points and cattle grids as well as the modification of salt-trough was installed at Ukpwah(WRCA, 1988: 30).However, despite all the efforts put in place, livestock rearing still remains an issue to be addressed within this locality.

The Heifer Project International allocated agricultural and grazing land to affected families to carry on agro-pastoral activities (see Fig. 2). This was effected during their survey visit in January 1987. Many aku lost their cattle during the disaster. They were encouraged by introducing new and improved breeds of cow. Other people received poultry and rabbitry training whereby at the end of the program, animals were given to start off production (WRCA' 1987).

The Catholic Church financed the ploughing services at Esu and Ukpwah as the land was prepared by tractors to plant improved varieties of grass such as braccharia, croteleria and Guatemala (Ibid., 33). About 18 hectares of this land was fenced in order to facilitate the control of grazing. The grass is now producing seed which will be used subsequently to extend the improved pastures. It will also produce hay for dry season feeding. This new approach to keep cattle will prevent farmer-grazier conflicts, increase milk and meat production and make the graziers more sedentary. As a result, the population will be able to benefit from other facilities such as medical care, schools, and water supply.

Fig 2:- Oxen Training for AkuGraziers at Ukpwah.

In addition, T-connections were made at various points of the water supply line to provide drinking points for the cattle in the fenced-in pastures so that the cattle can drink where they graze. In the meantime, many cattle graziers refused to use the drinking point and the salt trough constructed for fear of contamination of their cattle by foot and mouth diseases (Shanklin, 1988). The trough was now modified in such a way that each grazier can clean it

thoroughlywith water before giving salt to its animals. The place has also been provided with water taps which enables headsmen and their families in the vicinity to quench their thirst.

The International Community and the Lake Nyos Gas Disaster:

The Lake Nyos disaster was not the preoccupation of the Cameroon Government but also the international community. The entire world deeply regretted the massive loss of souls and livestock following the disaster. In 1986, President Paul Biya requested for international assistance and several countriesprovided aid for the survivors of the disaster in different forms.These support included the provision of financial, material, medical and scientific assistance. The countries that furnished financial assistance to the survivors of the disaster included Zaire, Canada, Gabon, Holland, Switzerland, Nigeria and the United States of America. It is estimated that the total amount sent by Non-Governmental Organizations from different countries was about US$352,389 to the survivors of the disaster (Belinga et al., 2003: 75).

Furthermore, material assistance to the survivors received from foreign countries all over the world included camp beds, blankets, mosquito tents, tea ingredients, medical equipment and drugs of different kinds. Ngangwa asserts that the following quantities of food stuffs were received by the survivors from foreign countries in (tones): rice (546), dried vegetable (3), vegetable oil (23), powder milk (11), tin milk (286), biscuits (3), fish (7), meat (3), tomatoes (1), groundnuts (2), mineral water (15 tons), and sugar (300kg) (Ngangwa, 2006: 55).

The Lake Nyos gas disaster created severe terror in Cameroon. The terror stemmed from the fear that the disaster may reoccur in future. On 23 August 1986 a radio broadcast from the presidency of the Republic of Cameroon informed the nation of the death of forty people following the gas explosion. This was probably as a result of lack of adequate statistics and the governments fear that if the real figure was announced it could cause ethnic tension in Cameroon (Belinga et al., 2003: 80).The government's duty then was to provide shelter, food and treatment to the survivors who continued to move out of the lake's vicinity in huge numbers. Survivors were carried to Wum and Nkambe hospitals where medical doctors and other social workers attended to them devotedly.

The neighboring population feared to venture into the disaster zone due to concerns over the imminent danger posed by the toxic gas. However, when convinced that the affected zone was safe, they began the massive task of burying carcasses and evacuating and hospitalizing victims, especially those who sustained injuries and burns during the tragedy. This period also involved putting in place structures for the temporary resettlements of the survivors in risk-free zones (Entire, 2004).

Among the several committees constituted in Cameroon to rescue the survivors, the North West Provincial Committee played a prominent role. The North West Provincial Committee for the Reception and Management of Aids for the Lake Nyos Disaster Victims was headed by the Governor of the North West Province. Its members included: the Senior Divisional Officer for Menchum, Mezam and Donga Mantung Divisions; Commander of the third military Region; Provincial Controller of Finance; Technical Adviser of Social and Cultural Affairs in the Governor's office; Provincial Delegate of Health; Provincial Delegate of Mines and Energy; Provincial Chief of Public Security and Subsection Presidents of Cameroon Peoples Democratic Party (CPDM) for Mezam and Menchum (Ngangwa, 2006: 63). The North West Provincial Committee was charged with the responsibility of channeling whatever aid was sent to the victims of the disaster and to ensure their well-being by providing them with clothing and medical care.

From the above analyses, we realized that most to the assistance that came in from both national and international organizations were focused more on relieving the desperate and helpless people. But it should be noted that the livestock sector was neglected mindful of the fact that it was one of the major economic activities that generated a lot of income and sustained the livelihood of the people. However, beside this difficulty, efforts were put in place by the stakeholders to ensure that cattle rearing in particularand the rearing of other ruminants such as goats, fowls, sheep, pigs should effectively gain grounds prior to the disaster.

Challenges Encountered in Reviving the Sector:

The management of the Lake Nyos disaster has proven to be a major challenge to the government of Cameroon.This is because the financial and materialassistance from international organizations, voluntary agencies and foreign governments were orientated towards providing the immediate and basic needs of the victims rather than investing on livestock production. The management of the disaster has been mostly biased towards physical risk reduction and

structural mitigation measures without any social causation (Adger,1999). While the management of the immediate aftermath of the disaster took into account some social considerations with the rescue, relief and resettlement of survivors, the long-term management has been influenced mostly by scientists who tend to focus only on the physical risk and neglecting the social and economic aspects.

However, plans are also underway to avert the risk of flooding in Lake Nyos when scientific evidence showed that the dam which holds the lake's water can be bridged with devastating consequences in both Cameroon and Nigeria. This physical risk management approach neglects the factors within the human systems that created vulnerability to disasters and as a result, have had a serious toll on the disaster victims (Alexander, 2002). This is because the complex networks of administrative, legislative and institutional structures that guide disaster management in the country do not emphasize the link between risk, vulnerability, coping strategies, resilience and development. As a result, the aftermath of the disaster two decades later is exposing to the survivors as conspicuous problems with survivor resettlement, community reintegration and post-disaster coping strategies persist within the disaster affected community.

One of the outstanding post-challenges that affected this livestock sector was the issue of grazing land. The Aku people in Kumfutu and Isu out rightly refused the pastoral Fulani graziers from the affected zone. This was they never wanted pressure on the available pasture land. This was also the same situation in the Kimbi area. Nevertheless, it was thanks to the intervention of the Divisional Officer for Menchum in collaboration with the authorities of the Wum AreaDevelopment Authority (WADA) that the grazing land was made available (Liebow, 1998).

The outcome of this paper has shown that the management of the disasterpertaining to the restitution of livestock rearing was improper. This is because most of the pastoral cattle rearing community expressed dissatisfaction because the government has not kept to the promises. The government has failed to provide financial and material assistance especially to those who lost theircattle and also the inability to solve other social problems within the calamity zone despite persistent complains have remained futile. Some of them attributed this government attitude to poor governance while others feel the government is biased towards her assistance to disaster victims in the country. Due to this government behavior, many people expressed lack of trust and confidence in the government.

Conclusions:-

The Lake NyosGas Disaster was one of the hazards that caused a lot of havoc in Cameroon in the 1980s.The intensity of this disaster provoked the necessity for constant multi-disciplinary research to provide adequate information that could help to mitigate the impact of such disaster. Since research about the disaster have been dominated mostly by science, adopting a social science and development perspective on this issue is necessary to unveil the socio-economic implication on livestock that are often neglected in the overall equation of disaster risk management and prevention. This paper has attempted to divulge the context of the livestock management and risk perception to natural hazards in Cameroon with case study of the Lake Nyos gas disaster. The home-base and foreign scientists believed that gas in the depths of the volcanic lake had gradually accumulated over a long period of time, until it finally reached a saturation point and was released. The CO_2descendedfrom the volcano's high ground as an invisible cloud that displaced essential air and suffocated people and animals. Due to fear of a recurrent disaster, the residents of the three villages of Cha, Nyos and Subum that were affected were forcefully resettled in other villages. The land assigned to the survivors of the disaster was insufficient as theypersistently argue and quarrel over grazing and farming lands. However, if the land allocated to the survivors was increased, it would obviously improve their masses and consequently, some people may no longer seek to return to the dangerous lake's vicinity.

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