Effects of Drought in Kenya

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1.0 Abstract

This paper addresses the theme of effects of drought in Kenya. The first part briefly presents the definition of the term drought. This is followed by a brief description of different types of drought and causes. The main part of the paper constitute the impact of drought. This section is presented under three sub-headings, namely economic impact, environmental and social impacts. The last part of the paper highlights on various coping strategies that can be put in place to mitigate the effects of drought.

2.0 Purpose Statement

The main purpose of this paper is to explore the effects of drought in Kenya. These effects include economic, environmental and social effects. The paper also briefly gives some coping strategies that can be put in place to mitigate the impacts of drought.

3.0 Problem Statement

Kenya is a drought-prone country, primarily because of its peculiar eco-climatic conditions. Although dissected by the equator in its southern half, Kenya contains only a few pockets of high and regular rainfall (>2000mm). Arid and semi-arid lands (ASALs) cover 80% of the territory. In these areas, where annual rainfall varies from 200 to 500 mm, periodical droughts are part of the climate system (Kandji, 2006). Given this kind of climatic conditions in the kind, it is only proper to explore the effects of drought in the country and to suggest what could be done to cope with these perennial problem.

4.0 Definition of Drought

There is no common definition of drought because it is unlike other types of hazards which makes it difficult to define. Since impacts are specific to the affected region as well as the affected communities, a universal definition is difficult to develop. However, drought can be defined in a simple conceptual way that it is a prolonged and abnormally dry and hot period when there is scarcity of water for the normal needs of the affected community or ecosystem (EEN, 2004).

Droughts are now receiving more attention due to the recent increase in their frequency and intensity. It is a slow onset disaster that is believed to be the primary cause of famine due to crop failure. The general definition can be modified to further develop definitions of specific types of droughts such as meteorological droughts, agricultural droughts, hydrological droughts and socio-economical droughts.

5.0 Types of Drought

According to EEN (2004) there are various types of drought. These are classified according to their effects. These include Meteorological Drought, Agricultural Drought, Hydrological Drought and Socio-Economic Drought.

5.1 Meteorological Drought

Meteorological drought is defined on the basis of the degree of inadequacy of precipitation, in comparison to a normal or average amount, and the duration of the dry period. Definitions of meteorological drought are region-specific, since the atmospheric conditions that result in deficiencies of precipitation are highly region-specific. The variety of meteorological definitions in different countries illustrates why it is not possible to apply a definition of drought developed in one part of the world to another without any modifications.

5.2 Agricultural Drought

Agricultural drought links various characteristics of meteorological drought to agricultural impacts, focusing on precipitation shortages. The definitions of agricultural drought attempt to explain the susceptibility of crops to water deficiencies during different stages of crop development. It does not only affect the farming sector in agriculture but also the pastoral sector where it forces pastoralists to migrate from their land with their animals in order to look for pasture and water.

5.3 Hydrological Drought

Hydrological drought refers to a persistently low discharge and/or volume of water in streams and reservoirs, lasting months or years. Hydrological droughts are usually related to meteorological droughts, and their intervals of recurrence vary accordingly.

2.4 Socio-Economic Drought

Definitions of socio-economic drought associate the supply and demand of some economic good with elements of meteorological, hydrological, and agricultural drought. Socio-economic drought differs from the other types of drought in that its occurrence depends on the processes of supply and demand. Socio-economic drought occurs when the demand for an economic good exceeds the supply as a result of a weather-related shortfall in water supply. Operational definitions of drought help to identify the drought's beginning, end, and degree of severity. This is usually accomplished by comparing the current situation with the historical rainfall average. The thresholds which are identified for the beginning, the end and the severity of a drought are often established arbitrarily using historical statistics.

6.0 Causes of Drought

When precipitation over a given region performs poorly and is accompanied by relatively high evaporation rates for prolonged periods, a drought occurs. In most cases, drought is caused by a

deficiency of either precipitation or an inadequacy of inland water resources supplies for a prolonged period. “Inadequacy” in this context is a relative word, and is determined by the specific requirements in the sector or activity. Since most inland water resources are usually sustained by precipitation, inadequate precipitation is usually the major cause of drought. This inadequacy is usually caused by an unfavorable

performance of the factors which drive the climate system over the affected region. Examples of such factors include sunspot activity, the El Niño/La Niña Southern Oscillation phenomenon and also the wind patterns at the top of the atmosphere. An increase in the frequency of droughts has also been linked to climate change. Adverse societal factors such as poor land-use practices, conflicts, poverty, poor communication infrastructure and lack of (or poorly implemented) traditional coping mechanisms are also major catalysts of drought disasters.

The geography of Kenya, the country’s situation along the East African Rift Valley and its climate combine with high population growth rates to have increasing numbers of people living in disaster prone areas. Recent trends in climate change and global warming as well as increasing environmental degradation means that there are more people whose livelihoods are precarious living in areas where the competition for scarce resources triggers conflict and unsustainable use of the environment especially in the marginal lands. The ASALs (Arid and Semi-Arid Lands) constitute about 80% of the country’s land mass, host approximately 11 million people and 70% of the national livestock herd. The ASALs are prone to drought and other natural disasters and the populations there, mainly pastoralists, are highly vulnerable to these and other recurrent shocks. Pastoralist vulnerability is intimately linked with livestock-based livelihoods and the vulnerability of pastoralists is escalating due to recurrent natural disasters in the ASALs coupled with increasing population growth and declining carrying capacity of the land (UN, 2004).

7.0 Impacts of Drought Kenya

Drought produces a complex web of impacts that spans many sectors of the economy and reaches well beyond the area experiencing physical drought. This complexity exists because water is integral to our ability to produce goods and provide services. (NDMC, 2006) states that rainfall patterns, especially rain failure or erratic rainfall are frequently the cause of natural disasters in Kenya where rural livelihoods have evolved to adapt to water availability. In this case we are going to look at the impacts of drought in Kajiado district they are categorized as economic, environmental, or social.

7.1 Environmental Impacts

Environmental degradation is accelerated during periods of drought due to:- diminished wetland areas; poor land use activities such as cutting down of trees for fuel; wood and charcoal burning for income; bush and range fires and overgrazing. Environmental degradation is in many cases exacerbated by population pressure and migration of the affected communities to marginal lands. The human factor in environmental degradation does not allow the environment to recover even after the end of the drought period. In some areas of the district droughts catalyze desertification, leading to loss of natural resources.(EEN, 2004).

7.2 Economic Impacts

In addition to obvious losses in yields in both crop and livestock production, drought is associated with increases in insect infestations, plant disease, and wind erosion. Droughts also bring increased problems with insects and diseases to forests and reduce growth. The incidence of forest and range fires increases substantially during extended droughts, which in turn places both human and wildlife populations at higher levels of risk. People in the area buy food at high cost due to poor yield of livestock production and crop failure. The government and NGOs provide relief food to the residents thus incurring extra cost in the national budget.

7.3 Social Impacts

The societal characteristics that maximize vulnerability to drought include:- poverty and low income levels; conflicts and wars; pandemics; high dependence on rain-fed systems; lack of controls for strengthening security in water supplies and consequently in crucial water uses such as irrigation and hydro-power generation; poor planning and management of agricultural water supply and irrigation systems; high population densities and other factors that inhibit population mobility and implementation of traditional coping mechanisms; inexperience of communities to cope with droughts; and unwillingness of communities to live with some droughtrisks as a trade-off against beneficial services or goods (EEN, 2004). Societal and physical characteristics of vulnerability reinforce each other differently and at different levels of severity in different parts of the world. Thus, regions like are affected by drought more severely than others.

8.0 Conclusion/ Coping strategies

According to International Strategy for Disaster Reduction (ISDR) (2005) coping with drought hazards can be enhanced by developing strategies which adequately address the following questions:

a) How frequently or extensively does a certain type of drought occur in a given region?
b) What are the vulnerabilities and expected losses which are associated with the particular type of drought?
c) What are the costs of implementing the plausible strategies or options for mitigating the disaster that can be caused by that type of drought?

Such strategies aim at reducing the vulnerability of drought-prone communities by either altering or strengthening their land use and farming practices as well as implementing programmes that promote water and food security, which also enhance poverty alleviation. The slow onset of drought combined with drought-forecasting capabilities also enables implementation of preparedness and preventive plans and measures in advance of the occurrence of the drought disaster. The improvement in recent years in seasonal and long-term climate predictions such as

those issued by many national and regional institutes and centers is assisting in the implementation of drought disaster mitigation and implementation of effective drought-contingency plans.

Other response mechanisms, mitigation procedures and assessment procedures include:

a) Drought vulnerability and impact assessments;

b) Enhancing mechanisms for drought preparedness;

c) Capacity building and awareness creation in drought

d) coping methods;

e) Enhancing coordination of drought response and

f) recovery mechanisms

References

International Strategy for Disaster Reduction (ISDR) (2005). *Drought Coping Strategies*.Available at http://www.unisdr.org

Kandji, S.T. (2006). *Drought in Kenya: Climatic, Economic and Socio-PoliticalFactors.*Available online at http://www.worldagroforestry.org/downloads/publications/PDFs/NL06291.pdf.

Ministry of State For Special Rogrammes (2008). *Drought In Kajiado District.* DroughtMonthly Bulletin, 2008. Available online at http://www.aridland.go.ke/bullentins/2008/mar/kajiado.pdf.

United Nations Food and Agriculture Organization (FAO). *Drought Emergency and Response*. Available online at http://www.fao.org/National Drought Mitigation Center (2006)

United Nation (UN) (2004). *Causes of Drought*. Available online at http://www.un-kenya.org/Causal%20Analysis%20draft%20(4).doc

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Suggested Citation in APA

Wanjohi, A.M. (2010). *Effects of Drought in Kenya.* KENPRO Publications *Online Papers Portal.* Available online at http://www.kenpro.org/papers/effects-of-drought-in-Kenya.htm

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