

KENYA'S EXPERIENCE IN MANAGEMENT OF NATURAL DISASTERS

Development Co-ordination

Office of the President

Nairobi, Kenya

Kenya: Country Profile and General Information

Kenya's landscape of 581,787 sq km is grouped into several geographical zones. The Savannah lands covering most of the arid and semi-arid areas; the coastal margin; the Rift Valley; the Highlands; and the Lake Victoria basin. With a growth rate of 3.1%, the population stands at approximately 29 million people. The country's GNP per Capita is close to US\$ 330. By the year 2010 and with a slow population decline, the population can be expected to reach 39.3 million; 37.4 million with a medium population decline, and 35.5 million with a fast population decline.

Agriculture supports up to 80% of the population, including those who reside and work in urban centres, accounts for approximately one third of the Gross Domestic Product (GDP), employs more than two thirds of the labour force, and provides about 70% of the country's export earnings. Agriculture generates almost all the country's food requirements and provides a significant proportion of raw materials for agro-based industries. Overall, the small land holder sub-sector contributes about 75% of the country's total value of agricultural output, 55% of the marketed agricultural output, and just over 85% of total employment within the agricultural sector. For this reason, agriculture has a major role in the economy and consequently on our design of poverty eradication programmes.

The population is predominantly rural and relies on agricultural or other related activities for daily income; although only 17% of the country's territory is arable.

The next 15 or 20 years are likely to see a rapid reduction in the rate of growth of Kenya's population. Having been close to 4% per annum in the 1970's (when it was widely claimed to be the highest in the world), by the year 2010 it will be less than 2% and possibly under 1% if fertility falls as rapidly as envisaged in the "fast fertility decline" projections.

Declining economic growth in general, coupled with a high population growth have lowered living standards and left sizeable numbers of the population poor and vulnerable to both natural and man-made disasters. The country's geographical setting has also contributed much to regular if not permanent natural hazards in some areas of the country.

Here are some of the disasters experienced by Kenyans over the past few years.

1. Landslides in some parts of Central Kenya; which may be associated with overpopulation, deforestation, or to a certain extent geographical factors
2. Floods in the Lake Victoria Basin and in other parts of the country due to the lack of flood preventive and forecasting capacity. A good example of our unpreparedness to disasters associated with floods is the effect of the recent El-Nino on our economy. The El-Nino phenomenon, that was experienced worldwide, caused massive destruction of infrastructure, displacement of people, emergence of various waterborne diseases, and destruction of farmlands among other effects, making it almost impossible for the Government to cope. It was therefore found necessary to seek outside help and many individual organizations and foreign Governments came to our assistance. The major contribution to the country as a result of the El-Nino rains was the World Bank and Asian Development Bank, which are funding an El-Nino Emergency Project in the most affected areas of the country. This assistance includes the repair of roads, health centres, and other

facilities. This is being done in conjunction with the Kenya Government.

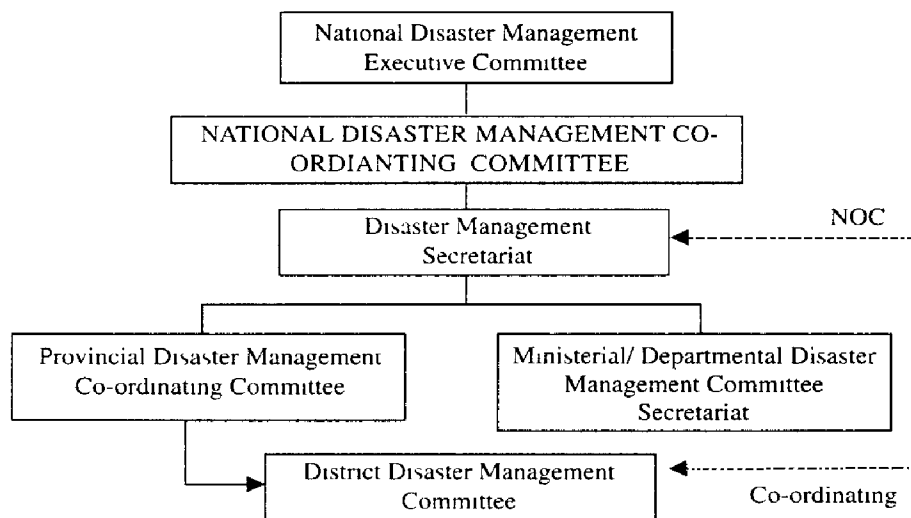
3. Extensive droughts in most arid and semi-arid areas mainly Eastern, North Eastern and some parts of Rift Valley Provinces; as a result of inconsistent rains and poor farm management leading to reduced or no income for farmers and the general public.
4. Lightning strikes within the highlands, around Lake Victoria and the Rift Valley.
5. Famine due to lack of adequate measures to maintain food security and other complementary programmes.

The country has also over the years been experiencing serious threats of drought coupled with famine in most dry areas where deforestation and desertification have taken root. These hazards have caused major social and economic impacts, not only on the Government budget, but also on the local population since people are forced to depend on subsidies and donations. The problem is compounded by unpredictable weather patterns.

Disaster Management Committees

In view of the economic impacts of these hazards and since some of these hazards are controllable and manageable, the Government has created a National Disaster Management Organization to co-ordinate the management of disasters from the National to the grass roots level. The organization chart of the National Disaster Management Organization is shown in Table 1:

Table 1
Organization Chart
Kenya National Disaster Management Organizations



The National Disaster Management Executive Committee. Responsibilities of this committee include.

1. Formulate disaster management policies;
2. Direct the implementation of disaster preparedness plans;
3. Issue guidelines for contingency plans;
4. Define responsibilities for various disaster management agencies;
5. Formulate training policy for disaster management.

The National Disaster Management Co-ordination Committee (NDCC): Responsibilities of this committee include:

1. Prepare disaster management contingency plans;
2. Implement disaster management plans and strategies;
3. Define areas of responsibility for various disaster management agencies;

4. Co-ordinate actions of various agencies in support of national disaster preparedness and response;
5. Prepare training plans for disasters;
6. Organise training practices and simulation to ensure rapid implementation of disaster plans;
7. Perform other related duties as may be directed by the National Disaster Executive Committee.

Provincial Disaster Management Co-ordination Committees: These committees are charged with the responsibility of coordinating and monitoring disaster conditions in the province.

District Disaster Management Co-ordination Committees. These committees are charged with the responsibility of co-ordinating and monitoring disaster conditions in the districts.

National Operations Centre (NOC): The National Operations Centre is the operational arm of the National Disaster Co-ordination Committee (NDCC). Officers drawn from various Government Departments and Ministries staff the Centre. The Centre is responsible for the following:

1. Co-ordinating all activities before, during, and after a disaster;
2. Activate co-ordination and control mitigation mechanisms in the event of a disaster or impending disaster.
3. Ensure that all key personnel and voluntary agencies are informed for the co-ordinated activation of disaster contingency plans;
4. Translation of the decisions of the National Disaster Co-ordination Committee (NDCC) into actions and instructions; and ensuring that these instructions are transmitted and carried out by the Ministries and Departments to whom they are directed;
5. Collate all information and determine problem areas;
6. Prepare an inventory of resources and assets countrywide;
7. Develop a transport inventory of heavy equipment as well as administrative arrangements to include requisition and compensation for use during a disaster;
8. Develop a prioritized list of needs for presentation to donors to meet any shortage of relief supplies;

Disasters Experienced in Kenya, Mitigation, and Response

Kenya has had a series of various forms of disasters. The most common and recurrent disaster has been persistent droughts, which have negatively impacted on the sources of livelihood of a significant proportion of the country's population. The other major disaster, which occurred in 1991, was refugee influx from neighbouring Somalia, which was disintegrating at the time due to internal conflicts. Another disaster in the last quarter of 1997 and in the first quarter of 1998, were El-Nino related rains that caused havoc of enormous magnitude, which by far surpassed the Government's ability to provide needed assistance.

Our country has been experiencing weather fluctuations for the last six years, and the Government has had to implement intervention in the form of famine relief operations, and rehabilitation of basic facilities. Consequently, economic conditions have improved greatly. This improvement was for a short span of time: that was between 1995 and 1996. Recovery from the previous drought situation was also being realized. However, in the latter part of 1997, the El-Nino wreaked further havoc on the fragile economy.

As a result of these unfavourable macro-economic conditions, Kenyans have faced declining per capita incomes, low employment growth, inadequate supply of food and agriculture inputs, poor infrastructure, and low domestic savings and investments.

These continuous disaster situations in the last 6 years required additional resources to be injected into the economy from both the Government and from the donor community to alleviate social problems and to achieve the projected sectoral economic performance for the 1996-2001 plan period. The Government, therefore, sought financial support from other Development Partners to promote food programmes and for rehabilitation of the infrastructure.

In summary, occurrence of disasters in Kenya in order of national ranking is as follows:

1. Drought

2. Floods;
3. Epidemics,
4. Environmental degradation;
5. Lightning, storms, hailstorms, tornadoes;
6. Earthquakes;
7. Other disasters including insect infestation, civil conflicts, livestock diseases, and fire.

- Drought

Drought has been a recurrent phenomenon in Kenya. The Arid and Semi-Arid Lands (ASAL's) cover about 80% of the country or 473,000 sq km. Because rainfall is low, unreliable and highly variable, water scarcity is the limiting factor for plant growth and constrains agriculture, forestry, livestock, and human settlement. The most vulnerable areas to drought are those that fall in the zone with probability of obtaining less than 750 mm of rain; being 30% to 100%. These areas support 20% of the country's population and half of its livestock.

Traditionally, two areas of Kenya have been most drought prone. The first drought area is the North Eastern Plateau which includes the northern districts of the Eastern Province; it is mostly low lying land and is often referred to as marginal lands due to low rainfall patterns. The second drought area is the pastoral areas of northern and southern Kenya.

Pockets of drought may exist in the ASAL's even when the rest of the country is experiencing no drought. This is because the ecosystems are fragile and easily degraded. Migration of people into these areas has increased due to population pressure, further straining the limited natural resources of ASAL's. The rainfall occurs in two rainy seasons (Bi-modal), the long rains from March to May and the short rains from October to December. Failure of one or both rainy seasons has compounded drought impacts in these zones.

Kenya has experienced droughts of different severity, some of which have had devastating effects. There seemed to be a pattern of drought occurrences in the last century when severe droughts were followed by famine in 1835, 1865, and 1880. In 1889/90 a devastating drought occurred followed by famine in almost the whole horn of Africa. Droughts also occurred in 1921, and in 1943/44, the 1943/44 drought was referred to as the cassava famine due to the fact that cassava, being drought tolerant, was among the few crops that were available for consumption. In 1964/65 another drought hit Kenya, referred to as the famine of yellow maize because yellow maize was imported and given as food aid from foreign countries. Droughts also occurred in 1949/51, 1960/61, 1974/75, 1979/80, 1983/84/85, 1992/93 and 1996/97. The drought of 1992 was the worst in 50 years, affecting 2.7 million people. Its effects were compounded by an influx of refugees from neighbouring countries.

From the recurrence of these droughts, important deductions can be made. There seems to be a severe drought after every 25 to 30 years and a less severe drought after every 10 to 15 years. There is a moderate drought, which is normally followed by a good amount of rain, every five to seven years. Drought is predictable as was the case in 1992 and another severe drought has already been predicted to occur between 2009 to 2015.

As a result of the frequency of drought, the Government of Kenya has made contingency plans to tap water resources for irrigation, especially in dry areas. This will boost food production and supplement the rain fed mode of food production which is a common feature in the country. The Government has also introduced measures in the agricultural sector which aim at promoting food security by liberalizing the industry such that farmers run their own profit oriented agricultural organizations free from Government interference.

The Government also ensures that strategic reserve food is available for relief intervention in drought hit areas. Famine relief food is available to deserving families only, in order to avoid creating a dependency syndrome. The distribution of food is co-ordinated by Disaster Management Committees.

Farmers are also encouraged to plant drought resistant crops for use where drought is severe and where common foodstuff is inadequate.

- Floods

Flood disasters are not common in Kenya. However, a few areas are prone to flooding due to being located in flood plains. The most important areas frequently affected by floods are the low lands of the Nzoia and Nyando rivers as they flow into Lake Victoria. Most flooding results from runoff from western highlands precipitation. Floods also have significant impact near the Galana River just before it flows into the Indian Ocean near the town of Malindi; in this area the river is known as the Sabaki River. Other areas prone to floods are the urban areas of major towns like Nairobi where poor drainage systems and poor planning have resulted in flash floods.

Extreme floods in Kenya have been noted in 1951, 1961 and in 1997 (from El-Nino rains). The El Nino induced rains caused massive floods and destroyed infrastructure in many parts of the country. To restore the infrastructure, the Government with the support of the World Bank and other Development partners, launched the "El Nino Emergency project" (ENEP) to restore the damaged infrastructure. The Project will cover a span of two years, effective from January 1999.

The Government has constructed dams and dykes on rivers, installed gabions to control running water in urban areas, and taken other soil and water conservation measures. There is also a permanent Commission on Soil and Water Conservation to ensure that conservation measures are practiced in order to mitigate the effects of droughts and floods.

- Lightning

Lightning killed more than 40 people and injured more than 45 people in one single incident in Kisumu District in 1982. The Government formed a Lightning Committee comprising the Meteorological Department, University of Nairobi Engineering Department, Ministry of Planning and National Development, Ministry of Lands, and Office of the President to coordinate lightning mitigation activities. The committee has been involved in mass awareness campaigns and in the installation of lightning arresters.

- Epidemics

There has been an overall reduction in epidemics such as tuberculosis, typhoid, cholera and diarrhea diseases due to improved sanitation, medical care, and public education. There are Standing Ministerial Committees which maintain epidemic surveillance; and whenever there are disease outbreaks, immunization campaigns are mounted promptly.

The prevalence of HIV/AIDS in Kenya continues to be alarming although public awareness has risen from zero in 1985 to 80% in 1991. More than 300,000 children have been orphaned by AIDS since 1987. This AIDS awareness is a result of campaigns by both the Government and Non-Governmental Organizations.

Malaria continues to be a leading cause of morbidity. There is a predominance of type P falciparum, which is very dangerous as it is resistant to chloroquine.

The Government has put measures in place, which include public awareness campaigns and immunization programmes, to mitigate the effects of common epidemic diseases like TB and measles.

- Environmental Degradation

The process of desertification is becoming serious in many areas of the country resulting from environmental mismanagement. Over 75% of the country shows moderate to high degrees of desertification. Accompanying problems are deforestation, overgrazing, and erosion. The Commission on Soil and Water conservation checks these problems and ensures environmental compliance in many aspects, including the designs of appropriate programmes and projects.

- Earthquakes

Kenya is traversed by the seismically active Rift Valley. Landslides sometimes accompany earthquakes in Kenya. People have been advised to plant trees and to stop cultivating along sloping areas to avoid landslides. Settlements are also discouraged in sloping areas in order to prevent loss of life and property from earthquake induced landslides.

- Other Disasters

Insert Infestation: Due to intervention by the Desert Locust Control (DLCO), the last serious locust outbreak was 30 years ago. Other insect pests include army worms and water hyacinth in Lake Victoria.

We are currently experiencing Army Worms Invasion in parts of the Rift Valley, Nyanza, Central, Coastal, and Eastern Kenya; which the Ministry of Agriculture is working round the clock to contain.

Conflict: In 1991-92, an influx of 300,000 refugees occurred from Somalia mainly due to civil strife and drought. Other refugees came from Sudan and Ethiopia. The refugees numbered 173,400 in 7 camps in May of 1997. These refugees greatly interfered with the environment at and around the refugee camps. Afforestation programmes and other conservation measures are being introduced around refugee camps to minimize environmental degradation.

Livestock Diseases. Large numbers of livestock are the main livelihood for pastoralists in Kenya, and supplement crop income for farmers. In addition, wildlife in Kenya contributes to the national income through earnings from tourism. Livestock diseases are therefore serious threats to our economy. In February 1997, a Rinderpest emergency was declared when cases were found in South-eastern Kenya.

Livestock and wildlife are more susceptible to diseases during drought periods when they may be weakened by drought induced stress. In addition, as herds move from place to place in search of water and pasture, they contact other animals which may lead to rapid transmission of disease. To mitigate the effects of livestock diseases, inoculation campaigns are mounted by the Ministry of Agriculture for domestic animals; and the Kenya Wildlife Services in case of wild animals, especially in game parks.

Fire: From March to July 1997, 28 damaging fires were documented. Some were exceptionally devastating like the fire in April 1997 in Mombasa that destroyed 10,000 homes. The country lacks adequate equipment and trained personnel to fight fires. And the public is not fully aware of fire hazard and reporting procedures. The National Operations Centre has a co-ordinating training programme for Kenyan personnel in fire fighting techniques. Also equipment is being procured to reinforce and replace those equipment which are outdated.

Government Intervention and Constraints

The overall effect of all the disasters described above is widespread poverty. Remedial disaster support measures by the Government is mainly drought related because of budget limitations.

In every case and depending on severity and number of people affected, the Government has declared emergency disaster situations that often required the implementation of emergency life saving operations. Government appeals have resulted in responsive support actions from Development partners, focusing on specific recommendations adapted to the requirements of the local affected households. Co-ordination for mitigation and recovery activities are executed by the Office of the President and implemented by the relevant line Ministries/Disaster Committees and non-governmental agencies, who have responded to the Government requests. National Organizations and even members of the Public, who always respond positively to Government appeals, are not left out.

The main concern to Government and its partners in the implementation of prioritized disaster activities has been the targeting of the scarce resources to the most deserving individuals, households, or recognized clusters, which require urgent support. Thus an objective criteria that is verifiable is identified in order to replicate it to all the areas targeted, without causing disparities in responsive actions.

Long Term Goal (Ultimate Objective)

Drought Cycles

It is recognized that droughts in Kenya occur with certainty and require long term planning to protect vulnerable populations from adverse effects. It has been considered that this would avert what is generally termed as hydro-illogical cycles.

Government and its development partners have therefore put into effect early warning systems (EWS) and responsive Drought Management Structures in the ten most arid districts of Garissa, Wajir, Mandera, Tana River, Moyale, Marsabit, Isiolo, Baringo, Turkana, and Samburu. The model is being replicated in 12 semi-arid districts - the eventual coverage will be 80% of Kenya under EWS.

Various programmes to target the most vulnerable groups in society have also been launched by Government. Examples are Social Dimensions of Development and the recently launched Poverty Eradication Plan.

Conclusion

The challenges ahead for combating disasters in Kenya require concerted action. This requires regular vulnerability assessment, prevention, mitigation, planning, and reviewing of the countries emergency response capacity.

This kind of scenario has over stretched Government resources. It is our hope that this forum will come up with a co-ordinated plan of action to mitigate against the effects of disasters and to help developing nations in particular to strengthen their response mechanisms to natural disasters.

