DROUGHT IN HORN OF AFRICA AND ITS SOCIO-ECONOMIC IMPACT

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Introduction:

It is a shame that in the twenty first century, a century heralded by great advances in technology and developed economies that drought and famine still persists in some parts of the world. The end of the Cold War increased the hope of many people that the world's political and economic system would be changed for better, following the narrowing of ideological differences that had so polarized the world. It was hoped that humanity would be better off, as everyone benefited from a new era of world peace and economic development.

The Horn of Africa is experiencing the most severe food crisis in the world today. Over 12 million people are severely affected in Djibouti, Ethiopia, Kenya and Somalia which is the epicenter of the crisis. The situation has deepened when compared to what obtained six months ago, indeed there is an increase of about 38% in the drought situation to the extent that famine was officially declared by the United Nations on the 20th of July 2011 in the lower Shabelle and Bakool of Southern Somalia.

The most affected segment of the population is children facing acute malnutrition, pastoralists, agro-pastoralists, conflict-affected and displaced households, women and children. The humanitarian crisis has been driven by a combination of severe drought, crop failure, rising food prices and the persistent conflict in areas such as Somalia. This has led to massive displacement particularly in Somalia where thousands have been displaced internally and many thousands more have been forced to flee across the border. On the whole, total numbers of refugees in the region has risen to 800,000 while there are 1.46 million internally displaced persons across the four countries that are affected in the Horn of Africa.

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There is a need to recognize the fact that the prolonged El Niño conditions affected a second consecutive rainy season, and this resulted in the deterioration of food security situation in the drought affected countries. The drought also induced massive reduction in livestock production. The overall effect is that 12.4 million people are severely affected by food crisis and require urgent life-saving assistance. Aiming to promote a shared understanding of needs and priorities, the term paper provides an overview of the drought situation and its socio-economic implication in the region.

Concept of Drought:

Definition:-

A generally accepted definition of drought is a *temporary reduction in water or moisture availability significantly below the normal or expected amount (norm) for a specified period.*

The key assumptions of such a definition are:

1. The reduction is temporary (if the reduction were permanent then terms such as "dry" and "arid" would be more appropriate)
2. The reduction is significant
3. The reductions is defined in relation to a "norm" i.e. normal expectation
4. The period taken as the basis for the norm is specified.

How the "norm" is defined is of critical importance. Assumptions 3 and 4, therefore, require more detailed clarification. The "norm" may be defined either:

Technically – a reduction of water availability might qualify as a "drought" when it falls below about 80% of the average availability over the preceding 20 years. Or

Culturally – in terms of the level of water availability the society has come to expect. Thus, after a run of ten years with above average rainfall a society may have become used to the wetter state and perceive the first year of average rainfall as a drought.

Types:

It is conventional practice to distinguish between three different types of drought, namely *meteorological, hydrological and agricultural*. Of the three types of drought, the first two describe the physical event whereas the third describes the particular impact of the first two on agricultural production.

Meteorological drought describes a situation where there is a reduction in rainfall for a specified period (day, month, season, or year) below a specified amount – usually defined as some proportion of the long term average for the specified time period. Its definition involves only precipitation statistics.

Hydrological drought involves a reduction in water resources (stream flows, lake levels, groundwater, and underground aquifers) below a specified level for a given period of time. Its definition involves data on availability and off take rates in relation to the normal requirements of the system (domestic, industrial, irrigated agricultural) being supplied.

Agricultural drought is the impact of meteorological and/or hydrological droughts on crop yields. Crops have particular temperature, moisture and nutrient requirements during their growth cycle in order to achieve optimum growth. If moisture availability falls below the required amount during the growth cycle then crop growth will be impaired and yields reduced

Causes:

Because drought is defined as a deficit in water supply, it can be caused by a number of factors. The most important one though relates to the amount of water vapor in the atmosphere as this is what creates precipitation. More rain, sleet, hail, and snow can occur where there are moist, low pressure air systems. If there is an above average presence of dry, high pressure air systems instead, less moisture is available to produce precipitation (because these systems cannot hold as much water vapor). This results in a deficit of water for the areas over which they move.

The same can also happen when winds shift air masses and warm, dry, continental air moves over an area as opposed to cooler, moist, oceanic air masses. El Nino, which affects the ocean's water temperature, also has an impact on precipitation levels because in years when the temperature cycle is present, it can shift the air masses above the ocean, often making wet places dry (drought prone) and dry places wet. Finally, deforestation for agriculture and/or building combined with the resultant erosion can also cause drought to begin because as soil is moved away from an area it is less able to absorb moisture when it falls.

Factors affecting the severity of drought:

While it is usually true that decreased rainfall results in decreased crop yields, the following factors influence the strength of the relationship.

The proportion of production which is irrigated-

The correlation between rainfall and yields is weaker in irrigated rather than rain fed areas. The extent to which this is the case however, will be determined by the importance of local rainfall in the irrigated water supply and whether all or only parts of the crops' moisture requirements are normally met through irrigation.

The moisture retention capacity of the soil-

Different soil types have different capacities to "hold" or retain moisture. For instance the water retention capacity of sandy soils is generally significantly lower than that of clay soils. In areas where soil moisture retention capacities are high, crop growth may not be affected by prolonged dry periods (as much as 20 days) and some moisture may actually be held over from one wet season to another. In contrast, in areas where retention capacity is low, dry periods of only a week may result in reduced yields and moisture present in the soil at the end of one season will not last to the next. In many arid and semi-arid areas of the tropics the predominant soil types are sandy. To attain optimum crop growth such areas need frequent and evenly spaced rainfall throughout the growing season.

Timeliness of the rainfall-

Deficiencies in moisture supply at critical stages during the growth cycle (e.g. germination and flowering) can significantly reduce yields. Consequently the distribution or timeliness of the rainfall during the growing season is potentially as important as the overall amount of rain. Because of the importance of timeliness, particularly in semi-arid areas where soil moisture retention capacity is low, rainfall must be described and analyzed in appropriately short time periods so that prolonged dry periods are not "hidden" within aggregate monthly figures which may indicate that rainfall has been around or even above the average. Models for different types of crops indicate the moisture requirements for optimum crop growth. In some countries such

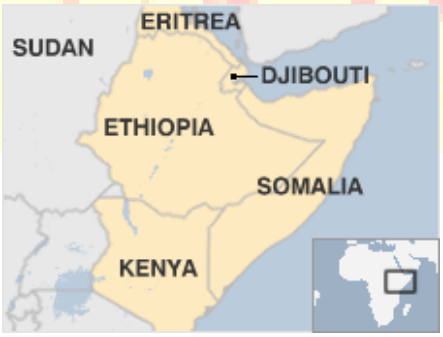
"moisture satisfaction" models are used to produce forecasts, at different stages within the normal growing season, of crop yield on the basis of rainfall occurring during the cycle.

The adaptive behavior of farmers-

In the face of an intermittent start to a wet season, some farmers may respond with repeated replanting of the same crop variety to take account of the rains when, and if, they finally start, while others may replant using other seed varieties. Some farmers may not have seed reserves of their own or be in a position to purchase replacement seeds for the first, failed planting. In this situation some farmers may experience a crop failure while others in the same area are enjoying a satisfactory harvest. Information on farmer behavior in the face of late or inadequate rains may be available from

Horn of Africa:

The Horn of Africa is considered a sub region of the larger region known as East Africa, and is sometimes referred to as the Somali Peninsula. The term "Horn of Africa" is also used to define a political region that consists of Djibouti, Ethiopia, Eritrea, and Somalia. Some definitions also include the states of Kenya, Sudan, and Tanzania. In terms of drought condition the United Nation Development Programme (UNDP) and the African Union (AU) considered four priority regions in Horn of Africa: Djibouti, Ethiopia, Kenya and Somalia.



Map: Horn of Africa

Drought Situation in Horn of Africa:

After two consecutive seasons of inadequate rainfall, the eastern Horn of Africa is currently facing the worst drought in60 years. The drought affected countries are Djibouti, Ethiopia, Kenya and in Somalia in particular. The Famine Early Warning Systems Network (FEWSNET), reports that while previous droughts may have lasted longer, the current drought has been particularly severe. Its impact has been exacerbated by extremely high food prices, reduced coping capacity and a limited humanitarian response. After the failure of the 2010 October-December rains and related harvests, the 2011 long rains began late and were erratic. In some areas of northern Kenya and southern Somalia, rainfall was less than 30 percent of the 1995-2010 average. Towards the end of the last rainy season in May the rains improved. However the gains were short-lived. Rainfall in the last year in south-eastern areas of Kenya was at its lowest since 1950. The timing of the rain that did fall (temporal distribution) was also poor across the region.

While the situation is dire in Somalia and the recent influx of refugees, into Djibouti, Ethiopia and Kenya, outbreaks of drought-related animal diseases have affected the pastoralist communities and also contributed to the Cross border migrations: Somali pastoralists crossing the border into Kenya, while thousands of livestock and pastoralists from Kenya migrated to Uganda. More cross border migrations were taking place from Kenya and Somalia into Ethiopia and as a result competition for scarce resources could erupt into resource-based conflicts with local host communities.

Areas in ***Somalia*** are the most critically affected, with a famine widespread in south Somalia including in Middle Shabelle, Benadir, Gedo, Lower Shabelle and Bakool regions. Famine is expected to spread across all regions of the south in the coming weeks. Millions of people are in urgent need of life-saving assistance. It is estimated that 3.7 million people in Somalia have been adversely affected by deepening drought and conflict, exacerbated by high food and fuel prices, representing more than a third of the country's population. The number in crisis has increased by 450,000 since January 2011.

Drought in ***Djibouti*** has mainly affected pastoralists because of late and erratic rainfall over two rainy seasons. The number of affected people is over 120,000 and badly in need of emergency

assistance to manage the situation. The drought has been compounded by increased prices of staple foods, which continue to exceed the purchasing power of poor urban and rural households. Water, too, is scarce in most pastoral areas.

In ***Ethiopia***, the failed seasonal rains of October- December 2010 in the southern and south-eastern parts of the country were followed by poor rains in February-May 2011 in major parts of the Somali Region; Southern Nations, Nationalities, and People's Region (SNNPR); and Oromiya Region. The combined effects of drought, food price increases, and insufficient resources for preventive measures have resulted in increased malnutrition among children. In the meantime the country continued to receive refugees from Somalia at an alarming rate. It is a severe problem in this country.

Much of ***Kenya's*** arid and semi-arid lands witnessed two or three consecutive poor or failed rains, with some parts receiving only 10 to 50 percent of normal rains. Pastoral, agropastoral and marginal agricultural areas now face a state of crisis, with rapid deterioration of the situation over the dry season. Livestock body condition has deteriorated as a result of reduced pastures, while some areas have experienced exceptionally poor crop harvests, resulting in rising levels of food insecurity.

Socio-Economic Impact:

Of all the natural hazards, droughts are potentially those having the greatest economic impact and affecting the greatest number of people. Earthquakes and cyclones may be of enormous physical intensity but are invariably of short duration and geographically limited. By contrast droughts affect large geographical areas, often covering whole countries or parts of continents and may last for several months and, in some cases, several years.

Impact on economic growth and poverty reduction:

Droughts, almost or virtually always, have a direct and significant impact on food production and the overall economy. The majority of the populations in most African countries live on marginal lands in rural areas practicing rain-fed agriculture. Desertification threatens agricultural production on these marginal lands (Conserve Africa, 2006; UNCCD, 2004), exacerbating poverty and undermining economic development. The impact of drought and climatic variability in both economic and mortality terms is generally larger for relatively simple and predominantly agricultural economies. In Ethiopia, GDP loss from reduced agricultural productivity is estimated at $130 million per year.

Impact on food security:

The Horn of Africa is currently facing a severe food security crisis that threatens the lives and livelihoods of over 12 million people. The crisis is the result of a combination of poor, erratic and failed rains over two rainy seasons, a marked increase in the price of food stuffs, and continued conflicts that have forced millions of people in the region to flee their homes. In five regions of southern Somalia – southern Bakool, Lower Shabelle and, since 3 August in the agropastoral areas of Balcad and Cadale districts of Middle Shabelle, the Afgoye corridor IDP settlement, and the Mogadishu IDP community – famine conditions now exist, forcing increasing numbers of people to seek assistance in Mogadishu and in neighbouring countries. Agriculture is a core survival strategy in the Horn of Africa and serves as the main source of food and income for an estimated 80 percent of the region's population. This crisis requires strategies that simultaneously focus on saving lives and livelihoods, while building longer-term resilience. Providing support through agriculture and livestock not only provides essential food, but an income for families.

Following chart shows the history of drought and food crisis in Horn of Africa:

History of drought	History of major food crises

42 droughts in the Horn of Africa between 1980 and 2011 Over 109 million people affected by drought between 1980 and 2011 In the last 10 years 47 million affected by drought Peak years 1999 (30 million affected) 2008 (16 million affected) 2003 (13million affected in Ethiopia alone Over 400,000 deaths (Drought in Ethiopia 1983)	1958 – Famine in Tigray Ethiopia 1972-1973 – Famine in Ethiopia 1984-1985 – Famine in Ethiopia 1991-1992 – Somali famine 1998-2000- famine in Ethiopia 2006 – Horn of Africa food Crisis 2008 – Horn of Africa food crisis 2009 – Kenya food crisis

Impact on Women and Children:

Women across the Horn of Africa are still bending their heads and suffering from destitution, famine, the destruction of their livelihoods and systemic violations of their rights. Lack of good food is a major reason for health problems. Women do the bulk of housework in much of the Horn of Africa, including fetching water and firewood. Girls and women risk being sexually assaulted on the long walks to fetch water. The NGO CARE International reported on 12 July that the number of reports of sexual and gender-based violence in Kenya's Dadaab refugee camp - where an estimated 3,500 Somalis are arriving daily - had increased from 75 between January and June 201 to 358 during the same period in 2011.

Since the rains failed in October 2010, famine in Somalia has already caused tens of thousands of deaths, including more than 29,000 children under age five, and is likely to persist through at least December. This is part of an even wider regional drought and conflict-induced humanitarian crisis in the Horn of Africa that threatens the lives and Livelihoods of some 12.4m people. This includes people not only in my native country of Somalia, but also people in Djibouti, Ethiopia, Kenya and other countries.

Impact on Health:

The impact of the drought, and ensuing extraordinarily high levels of malnutrition, internal and cross-border population displacement, compounded with conflict, has exacerbated physical and food insecurity and resulted in a crisis estimated to involve in excess of 10 million people (OCHA 14/07/11). The three countries experiencing the worst of the crisis are Somalia (direct impact of drought), Ethiopia and Kenya (refugee influx as well as direct impact of drought). Global acute malnutrition (GAM) rates in parts of Bakool and Lower Shabelle in Somalia are at 50% with death rates exceeding 6 per 10,000 per day1. In Somali refugees arriving in Ethiopia (Dollo Ado camp), GAM of 47% and severe acute malnutrition (SAM) of 35% were reported; in those arriving in Kenya (Dadaab), that of 30% and 18% respectively. These levels are all above the threshold of 10% wasting reflecting a serious problem and are much higher than the national rates.

Malnutrition not only increases the risk of contracting infectious diseases, it also increases disease severity and therefore the risk of death. This, added to being weak and stressed from displacement and fleeing from insecurity, along with poor prior health and immunization status, decreased access to basic needs such as food, water, shelter, and sanitation, will put these populations at high risk of contracting infectious disease and subsequent death. Furthermore, infectious diseases can also exacerbate malnutrition. This destructive cycle needs to be broken with appropriate nutritional support for the population, treatment of malnutrition as well as preventing and rapidly treating disease.

Refuges Problem:

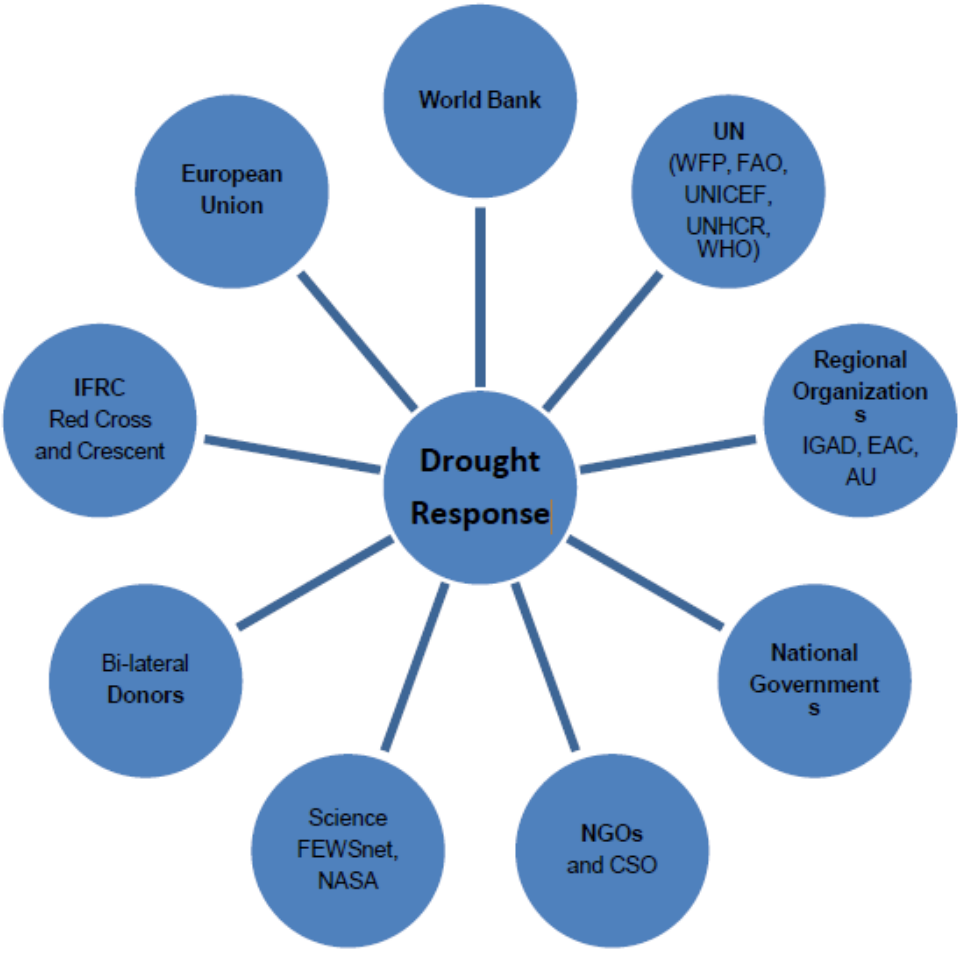
As of 2011 more than 920,000 refugees from Somalia have fled to neighboring countries, in particular Kenya and Ethiopia. The U.N. High Commissioner for Refugees (UNHCR) base in Dadaab, Kenya currently hosts at least 440,000 people in three refugee camps. The maximum capacity of the Dadaab camps is 90,000. More than 1,500 refugees continue to arrive every day from southern Somalia, 80 per cent of them women and children. Within the camps, infant mortality has risen threefold in the last few months. Malnutrician Water shortage is affecting all the refugee camps.

Environmental Impact:

Environmental losses are the result of damages to plant and animal species, wildlife habitat, and air and water quality, forest and range fires, degradation of landscape quality, loss of biodiversity, and soil erosion. Some of these effects are short-term, conditions returning to normal following the end of the drought. Other environmental effects last for some time and may even become permanent. Wildlife habitat, for example, may be degraded through the loss of wetlands, lakes, and vegetation. However, many species eventually recover from this temporary aberration. The degradation of landscape quality, including increased soil erosion, may lead to a more permanent loss of biological productivity.

Institutional Issues Related to Drought:

The drought in the Horn of Africa has put nearly 13.3million people in urgent need of humanitarian aid across Somalia, Ethiopia, Kenya, and Djibouti. The crisis has been escalating dramatically in recent months, especially in Somalia, and as a result more people, crops and livestock will be affected in the coming months. The situation is compounded by steep increases in food prices, which further undermine food security in the region, with particularly adverse effects on poor households. Cereal prices are currently at record levels in Somalia, Ethiopia and Kenya. The flow of refugees is putting additional pressure on food markets across the sub region, including in areas that were not directly impacted by the drought. In this way the large numbers of international, national, and local organizations exists and are necessary to combat drought and famines and alleviate suffering. Following chart describes the response on the drought problem:



Role of International Organization:

The World Bank's International Development Association (IDA), the donor-funded Global Facility for Disaster Reduction and Recovery (GFDRR), and the State and Peace Building Fund (SPF) are making available $1.88 billion to respond to the drought crisis in three phases: the **Rapid Response phase** covering the first six months, the **Economic Recovery phase** covering the first two years, and the **Drought Resilience phase** focusing on implementation over a longer period of time.

Food and Agricultural Organization (FAO) PRIORITIES IN HORN OF AFRICA:

- Providing farmers and herders in Somalia with the cash they need to buy food for their families through cash-for-work programmes.

- Safeguarding the remaining assets of drought-affected herders through animal health support.
- Enhancing local skills and capacities to overcome drought-related crises through training in improved production practices.
- Scaling-up the distribution of drought-tolerant crop and pasture seeds coordinating ongoing drought-related food security and nutrition interventions at the regional, national and community levels in partnership with government institutions, regional bodies, NGOs and other United Nations agencies.

United nation development programme (UNDP), UNHCR, World Health Organization (WHO) European Union (EU) etc also play a vital role to reduce the impact of drought in Horn of Africa.

Role of Regional Organization:

The African Union made an initial financial donation of a total of US$ 500,000 (US$ 200,000 from the Refugees and IDP Fund to UNHCR to cater for the Emergency needs of affected Somalis who have migrated to Kenya and Ethiopia; US$ 300,000 from the Special Emergency Assistance Fund for Drought and Famine in Africa to UNHCR to cater for food items and non-food items of most affected populations inside Somalia). A Fund has been created at the African Union Commission which will directly benefit from the financial contributions made. Various missions were undertaken to the most affected countries, namely Ethiopia, Kenya and Somalia and the Headquarters of the Regional Economic Communities.
East Africa community (EAC), Intergovernmental Authority on Development (IGAD) is also work to reduce the drought affect in Horn of Africa. IGAD climate prediction and application centre play an important role for forecasting weather.

Role of Countries:

Effective action by national governments is crucial to successfully implement efforts outlined above to reduce vulnerability to drought and famine. Preparedness to mitigate the effects of drought and famine requires that additional response capacity be sustained on an ongoing basis within the system. Where governance is ineffective, such capacity is unlikely to be maintained

between drought and famine episodes. Similarly the performance of the national government is crucial to the effectiveness of the overall response by the international community once a famine is developing. Where, as in Botswana and Kenya during the mid- 1980s, a national government is prepared to take the lead in initiating its own relief program and guide the subsequent international response and where the situation is uncomplicated by conflict and severe internal political strains, the international response system works relatively effectively. Where these conditions are not met, as in the case of Sudan and Ethiopia during the mid-1980s, the international response system has frequently performed poorly.

Role of NGOs and Donor:

Approximately 40% of emergency food aid to Horn of Africa is now channeled through NGOs such as CARE, Oxfam, Save the Children Fund and the Catholic Relief Services. These trends have important implications:

- They increase the potential role of foreign policy considerations in the provision of relief and, thereby, may influence the effectiveness of the response.
- Potentially they limit the role of UN agencies, though much depends on local circumstances and the level of collaboration at the country level between UN and bilateral donor personnel.

They increase the need for effective coordination mechanisms between the government, bilateral donor organizations, UN agencies and NGOs.

The donors use NGOs to channel relief assistance because of:

- Doubts about the effectiveness of government agencies to handle the large volumes of assistance.
- Doubts about the commitment/ability of government agencies to reach those most in need.
- Fears of corruption and high levels of "leakage".

Challenges:

Horn of Africa is confronted with many challenges and constraints that have hampered progress in the development and implementation of measures to combat desertification and to mitigate impacts of drought. The main challenges are:

- The high level of poverty continues to be main overarching challenge and constraint to implementation of measures to address drought in this region.
- Magnitude of funding gap, by sector and country.
- There is also lack of synergies and coordination in the implementation of desert and drought related convention.
- Weak institutional capacity including poor institutional set ups and inadequate human resources capacity constrain integration of drought and desertification concerns into sect oral planning and hamper cross-sectoral and trans-disciplinary cooperation and coordination.
- Reform and enforcement of policies and legislation to assure harmony and to guarantee clear legal ownership and access rights to land, water and other natural resources remains a daunting task.
- Inadequate funding and lack of sustainability of programs: Lack of financial resources is a systemic and one of the most pressing constraints to implementation of desertification control plans in most of the countries in the region.
- Inadequate information available on drought, desertification and dry lands and the difficulties encountered in accessing and sharing this information continue to hamper progress in tackling drought and desertification in the region. Among the factors responsible for this state of affairs is the inadequate capacity including lack of standardized and effective systems to collect, manage and disseminate/share information.
- The development, management and implementation of processes that are genuinely participatory, cross-sectoral and multi-stakeholder are a still a challenge.
- Technology options that empower communities remain largely inaccessible and unaffordable particularly to a majority of rural populations and the urban poor.
- High rates of HIV/AIDS and infectious diseases prevalence in some countries of the region pose a challenge to addressing drought and desertification in the affected countries.
- The political instability and conflicts faced by some countries in the region breed conditions such as displacement and concentration of populations, destruction of natural resources and infrastructure, which favour land degradation and/or hamper implementation of programs to reduce poverty and address drought and desertification.

Suggestions for Reducing the Impact of Drought:

There are a number of actions that can be taken to counter drought conditions or lessen their impact. They include:

- Getting seeds in place for when the rains begin.
- Improving rangeland management.
- Improving water resource management
- dig new wells
- improve existing wells
- construct retention dams or catch dams
- construct subsurface dams to trap water in sandy riverbeds
- Recharge the aquifer with catchments which trap water and allow it to seep quickly down into the water carrying strata.
- Planting drought-resistant crops, such as sorghum and millet instead of hybrid maize.
- Implementing counter-desertification measures such as
- erosion control
- tree planting
- Construction of wind breaks and barriers.
- Gearing up all government sectors to meet the new needs.
- Maintain food security, principle measures are include:
- Price stabilization
- Food subsidies
- Employment creation programs
- General food distributions
- Supplementary feeding programs
- Special programs for livestock and pastoralist populations
- Complementary water programs
- Complementary health programs.
- Improve co-ordination to international organization and countries.
- Enhance the regional integration.

Conclusion:

We see that the area experiences significant reductions in available water supply, factors, which include the planting behavior of farmers, soil types, spacing of rainfall, and extent of irrigation, cause variations in the extent to which reduced rainfall results in reduced crop yields. Other social and economic factors also influence how communities and individuals are affected by drought. Nevertheless, droughts invariably have widespread impact on individuals, households, communities, and countries.

Effective government response is critical to successful relief programs in response to drought and drought lead famine. Unfortunately, Horn of Africa that experience drought and famine, governments, Several United Nations agencies, Regional organizations and NGOs have important roles to play in responding to drought and famine. Because many emergencies include, in addition to drought and famine and displaced populations, civil conflict and intense political considerations, the UN is developing new roles to support effective responses to provide humanitarian aid. Increasingly, donors are choosing to deliver famine assistance through NGOs. This trend has some significant implications for relief and rehabilitation programs.

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