

Ensuring Food Security in Ethiopia



Ethiopian women in a jovial mood

This case study:

- **Highlights the key role of Ethiopia's NMA in the early warning system and in addressing national drought disaster;**
- **Shows importance of the use of climate products from Global and Regional (sub-regional) centers in addressing drought;**
- **Highlights the need for improved observations and analysis by skilled NMA staff;**
- **Importance of the NMA as a team player in a multi-disciplinary DRR team in the national context;**
- **Exhibits elements of the WMO Service Delivery Strategy and the end-to-end concept of forecast generation;**
- **Demonstrates the economic value of Ethiopia's NMA to the national development strategy.**

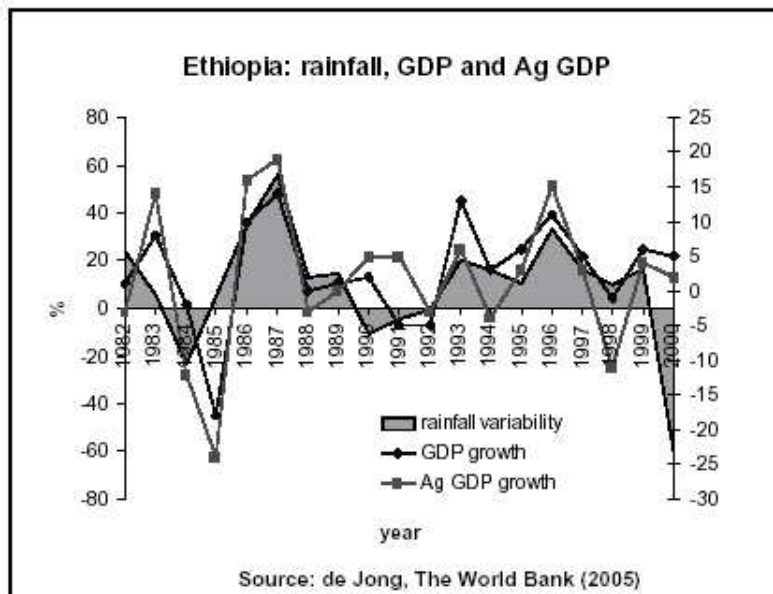
Background

The Greater Horn of Africa (GHA) is prone to extreme climate events such as droughts and floods and exhibits good response to the ENSO cycle. These extreme events have severe negative impacts on key socio-economic sectors of all the countries in the IGAD sub-region including Ethiopia. The famine in Ethiopia in 1983–84, as a result of a strong El Niño event, alerted the world to the harsh realities of food insecurity in sub-Saharan Africa. An estimated 1 million people died, and many more suffered malnutrition and disease. Ethiopia and much of the IGAD sub-region is prone to drought, and must therefore learn to live with it by alleviating its impact particularly for the vulnerable locals including farmers and the pastoral community. Western countries did not respond early enough to the gathering crisis, which escalated to disaster that swept across the IGAD region stretching from Sudan, Ethiopia, Somali and northern parts of Kenya. Even more serious was Ethiopia's early warning system which was primarily designed to advise on food security and identify areas where food was needed but did little to advise the local farmers and pastoral communities of impending drought and appropriate action to take, often after the effects of drought had escalated to famine. But lessons were learned from the tragedy.

Today, Ethiopia is much better prepared for drought. The country has developed an early warning system with a shift from food aid relief to drought anticipation based on advance climate information in the form of seasonal climate outlooks provided by the IGAD Climate Prediction and Applications Centre (ICPAC) and Ethiopia's NMA, with response mechanisms and systems put in place by the Ethiopia government, which have proved to be effective where the impacts of drought are lessened. In 2003 more than 13 million

Ethiopians were affected by drought, but a major famine was avoided as a result of the shift from reactionary to anticipatory responses by the government of Ethiopia.

Approximately 75% of Ethiopia's 74 million people are dependent on agriculture, which is almost entirely rain-fed and small scale. A further 10% earn their living entirely from livestock. Both the farming and pastoral communities are highly dependent on climate for their livelihoods. Compounding factors such as population growth, diminishing natural resources, dependence on rain-fed agriculture and a weak resilience to climate-related extremes all add to the vulnerability of these local communities. Yet climate information and warning advisories have failed to reach them missing a valuable opportunity for adaptation to climate variability and the building of resilience to future more severe impacts of drought and floods. The graph below shows how GDP for Ethiopia follows closely, annual rainfall totals further emphasizing the importance of rainfall performance to the livelihoods of the people of Ethiopia.

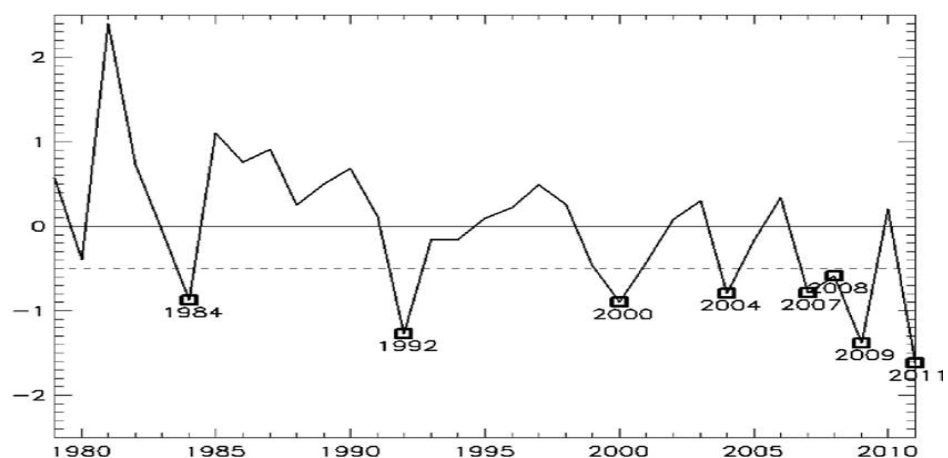


The Role of Ethiopia's NMA and ICPAC in Ensuring Food Security

Twenty years on, Ethiopia is much better prepared for drought – thanks to the services of Ethiopia's NMA and the establishment of the IGAD Climate Prediction and Applications Center (ICPAC) which was WMO's long-term response to the frequent incidences of drought in the region. ICPAC's mission is to provide timely climate early warning advisory information and support specific sector applications to enable the region cope with various risks associated with extreme climate variability such as drought and floods for poverty alleviation, environment management and sustainable development of the IGAD Member countries including Ethiopia.

ICPAC's climate products includes the periodic Regional Climate Outlook Fora which brings together climate providers, users and stakeholders to agree on a consensus seasonal forecast for the region. The main objectives of the fora are to develop regional consensus climate outlook for the anticipated rainfall season with a six month lead time to allow for planning and the formulation of mitigation strategies for various sectors. In addition, the forum reviews experiences and lessons learned from the use of the consensus forecast in economic sector decision-making for continuous product improvement. Regional forecasts are downscaled to the national level and input to the NMHS of countries and the need for skilled staff to perform this critical task is imperative. The NMA is mandated to provide climate advisories to economic sectors and disaster risk managers and facilitate its use in DRR and early warning activities.

The March to May season is the major rainfall period for pastoral and agricultural areas of southern and eastern Ethiopia including most of Somalia, accounting for 50-60 percent of annual rainfall in many parts of the sub-region¹. These rains are critical for food security in Ethiopia. In recent years, Eastern and northern Ethiopia have experienced an increased frequency of drought during the September to December short rains season associated with La Nina conditions and linked to the El Nino Southern Oscillation (ENSO) phenomena. The graph below shows an analysis of historical rainfall indicating eight poor seasons since 1979. Six of these seasons have occurred since the year 2000 confirming projected increased frequencies and severity of climate variation impacts by the IPCC 4th Assessment Report.



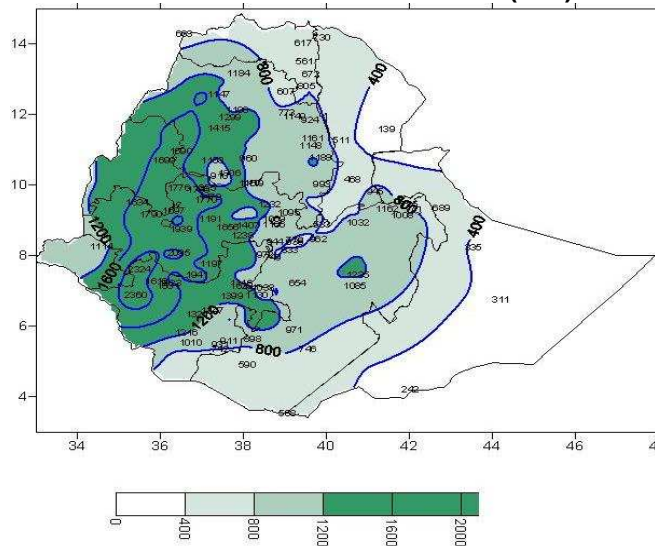
1979-2011 March-May rainfall in southern Ethiopia, central-eastern Kenya and southern Somalia measured by the Standardized Precipitation Index (SPI). Boxes show drought affected seasons (those with SPI <-0.5).

Thus failure of the short rains can have serious impacts on food security, affecting food crops, cash crops, and livestock. The consequences become even more serious when the long rains also fail or are greatly reduced. The east and north of the country are the most vulnerable to drought and have the highest food insecurity. The west generally receives more reliable rains. But even when the rains fall as expected, Ethiopia is unable to meet its food needs. Since the mid-1970s the country has had to rely on food aid almost every year to feed a proportion of its people.

This case study examines the role of Ethiopia's NMA in national DRR activities and its contribution to the early warning system of the Disaster Prevention and Preparedness Agency in responding to the 2002 Drought as a result of a strong El Nino event. Activities are mapped to the WMO 8-Step model for capacity development to identify key capacity development elements in Ethiopia's early warning system.

¹ Source: FEWS NET/USGS: *Interpreting March-May seasonal forecasts for the Eastern Horn of Africa*

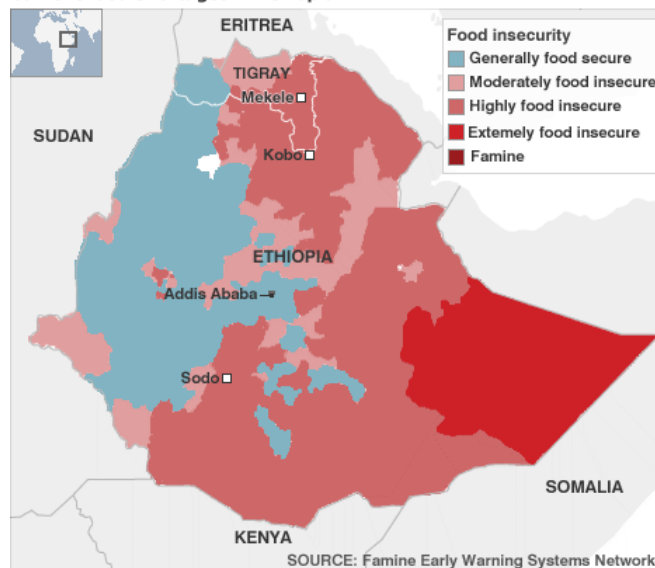
1971-2000 Mean Annual Rainfall Totals (mm) based on 186 rainfall stations



From the rainfall map on the left, mean annual rainfall ranges from 2000-mm over some pocket areas in the southwest highlands, and less than 250-mm in the lowlands. In general, annual precipitation ranges from 800 to 2200-mm in the highlands (>1500 meters) and varies from less than 200 to 800-mm in the lowlands (<1500 meters). Rainfall also decreases northwards and eastwards from the high rainfall areas in the southwest.

Source: NMA of Ethiopia

Current food shortages in Ethiopia



The map on the left showing zones of Ethiopia demarcated according to food insecurity needs exhibits a strong correlation with the rainfall map above. Areas to the west which receives rainfall totals of 2200mm to 800mm are food secure while areas to the extreme east with less than 400mm of rainfall are extremely food insecure and/or experience famine.

STEP 1 – Requirements for an efficient early warning system was defined with emphasis on service delivery and end-to-end forecast generation,

Policy and planning Process for drought management

After experiencing consecutive drought events in 1957-58, 1964-65, 1972-73 and 1983-84, the Ethiopia government put in place national institutional arrangements comprising policies and procedures for drought management. The Ethiopia government recognized drought as the most important climate-related disaster affecting the economy and gave its mitigation high priority. To tackle such disasters, the government set up the Relief and Rehabilitation Commission in 1976. In 1995 it launched a Policy on Disaster Prevention, Preparedness and Mitigation, marking a shift in strategy from pure relief provision to the reduction of drought impact. The policy's aim was to provide relief provision when needed and to reduce vulnerability in the longer term by linking relief to development. The Relief and Rehabilitation Commission was renamed the Disaster Prevention and Preparedness Commission (DPPC), and became the Disaster Prevention and Preparedness Agency (DPPA) under the Ministry of Agriculture and Rural Development.



Source: Bulletin of the Disaster Preparedness and Prevention Agency, Vol 14 No. 1 February 28, 2007: Ethiopia's DPPA Director-General addressing donors and partners on food aid requirements

The Disaster Prevention and Preparedness Agency headed by the Deputy Prime Minister, reflected the seriousness of the issues it addressed and the priority the government gave to the mitigation of drought. Its activities were divided into three main areas: disaster prevention, preparedness, and response. Prevention measures aim to tackle the root causes of people's vulnerability, improving their ability to manage periods of difficulty. Response activities take place during an emergency, and include the provision of food, water, shelter, and medical services. Preparedness activities aim both to reduce the impacts of disasters and provide reasonable lead times to allow planning and precautionary measures to be taken for the response to be more effective. This highlights ICPAC and Ethiopia's NMA roles in providing timely climate information with a lead time of six months up to a year to allow for food security planning and preparedness. Other elements of the preparedness strategy were the Emergency Food Security Reserve, the Disaster Prevention and Preparedness Fund, and the Logistics Department.

Armed with climate information and advisories from the NMA, the Early Warning Department of the Disaster Prevention and Preparedness Agency carries out regular assessments of the food security indicators, and prepares and delivers reports to the government, NGOs, and the international community to inform all concerned of impending problems in a timely manner.

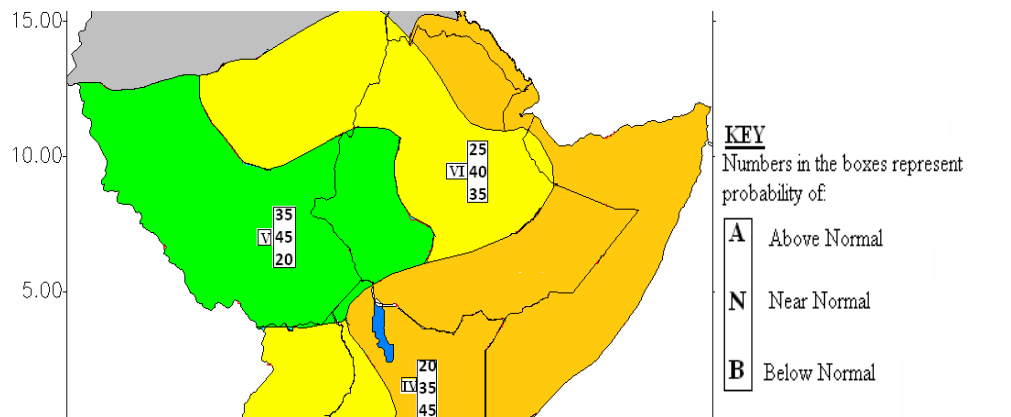


More than 57,000 MT of food obtained by the DPPA in February 2007. Courtesy: Fortnight Bulletin of the Disaster Prevention and Preparedness Agency, Website. www.dppc.gov.et

The Early Warning System

The IGAD Climate Prediction and Applications Center (ICPAC) plays a crucial role in Ethiopia's Early Warning System in responding to the frequent incidences of drought in the region. The Greater Horn of Africa consensus climate outlook for the March-May 2012 season is presented in the map below where Ethiopia falls under three forecast zones. The following is a description of the seasonal forecast outlook for Ethiopia and an example of the type of climate product that feeds into the the Ethiopia NMA for downscaling and dissemination to users. Disseminated information is fed into the decision-making system of the DPPA and the early warning system in its assessment activities.

²Statement from the Thirtieth Greater Horn of Africa Climate Outlook Forum (GHACOF 30): 27-29 February 2012, Kigali, Rwanda



Zone IV: Increased likelihood of below to near normal rainfall over southern, eastern and northeastern Ethiopia;

Zone V: Increased likelihood of normal to above normal rainfall over southwestern Ethiopia.

Zone VI: Near normal to below normal rainfall is indicated over north-western and central Ethiopia.

Seasonal forecasts are the foundation for early warning and response planning in climate-related disasters such as drought, floods, Malaria and other diseases that plague Africa. These forecasts are based on probabilities and indicate a 'tilt in the odds' towards a particular outcome and will never give a

² GHACOF: www.wmo.int/pages/mediacentre/press.../hornoutlook.pdf - Switzerland

'perfect' prediction – one that turns out to be 100% right. The challenge is to incorporate such probabilistic information, with its explicit uncertainties, into decision-making by local users

Bulletins are disseminated through the Post Office, the NMA website and the WMO (<http://www.ethiomet.gov.et> and <http://www.wamis.org> respectively), and through the mass media. There is no formal arrangement between the media and the early warning process, but many of Ethiopia's media are government run and are therefore available for the dissemination of public information. Radio and TV stations provide daily weather information and a weekly summary. The newspapers also carry weather information. These communication efforts target users in government offices, UN organizations, donor agencies, and NGOs, as well as the general public. However, there is a challenge in information reaching the rural communities including farmers and pastoral communities who are the most vulnerable and in need of this critical information.

Mitigating the 2002 Drought

STEP 2 – Capabilities of the national early warning system in terms of human resources, infrastructure, institution and procedures were assessed and a baseline was established,

Ethiopia's NMA plays a crucial role in the early warning system. Climate information from ICPAC is incorporated into the national data it collects and analyzes, generates forecasts, and disseminates information to various user groups in the form of regular bulletins. Data are collected from the network of weather stations across Ethiopia, and forwarded to the agency's central office (NMC) for analysis which incorporates satellite data. The information released by the NMA includes daily weather reports, 10-day weather summaries and 10-day forecasts, monthly weather summaries and 1-month forecasts, and three seasonal forecasts a year covering the two rainy seasons and the dry season. The service also provides rainfall maps showing rainfall received as a percentage of normal rainfall, vegetation conditions, and impacts on crop and livestock production. This information feeds into the decision-making system of the Disaster Prevention and Preparedness Agency for planning preparedness strategies. Critical to the early warning system is the capability of the NMA in terms of skilled staff and infrastructure to carry out the downscaling staff from regional to national and local levels effectively. There is a significant need to strengthen these capacities for Ethiopia as well as many of the countries in the IGAD sub-region.

The forecast issued by ICPAC and downscaled to the national level at Ethiopia's NMA for the short rainy season in 2002 was a high probability of normal rainfall in the crop-growing regions. But as the season progressed, it became clear that this would not materialize. Rainfall in February was far below normal and improved in March. However, in April and May it was again below normal. Hence the rainfall was for the most part, below normal.

STEP 3 – Gaps were analyzed and deficiencies identified from Step 2 in terms of capacities and resources available to meet the requirements of an adequate national early warning system.

Regular monitoring by the Disaster Prevention and Preparedness Agency's Early Warning Department was conducted by tracking various indicators of climate, crops, livestock, and markets, as well as the food security situation. Monthly reports were prepared and disseminated to the relevant government ministries and departments, international aid organizations and NGOs. The reports indicated problems with the short-season crops, as well as potential failure of the long-cycle food crops. Subsequent assessments provided early indications of emergency situations and the need for assistance and prompted the planning and decision making for the preparation of appeals for aid, and the allocation of resources. A rapid assessment in June confirmed a bleak outlook. The harvest of short-season crops was very poor, long-cycle crops were severely compromised, and a serious food shortage was looking likely for 2003.

An excerpt from Ethiopia's NAPA and leading to a GEF funded project for strengthening the national early warning system to enhance food security identifies the following gap:

³*“The early warning system, in most cases, deals with preparedness for food emergency relief rather than providing the rural communities with advance information for mitigating and coping with drought. It is an emergency relief, food-oriented, reactive, and slow forecast when compared to climate forecast, which is in principle considered proactive in predicting and providing information on drought and climate change. DPPC is working in collaboration with the Regional Drought Monitoring Center, IGAD Regional Early Warning Unit, FEWSNET, WFP and other international as well as national organizations, such as the National Meteorology Service Agency (NMSA) to receive and employ user tailored climate forecast and provide proactive information for timely mitigation and coping with drought.”*

STEP 4 – A strategic plan was already in place and involved national authorities in government evidenced by the formation of The Disaster Prevention and Preparedness Agency headed by the Deputy Prime Minister, reflecting the seriousness of mitigating drought. This plan involved the participation of Ethiopia’s NMA in providing weather and climate advisories to users.
STEP 5 – National commitment and ownership was secured and well demonstrated.

During an El Nino event, southern Ethiopia and the east African region have exhibited high predictability of the rains. Around this time, it was confirmed that an El Niño event was occurring, with its associated impacts on global climate. In Ethiopia this was known to be associated with lower rainfall in the long rainy season. Forecasts for the long rainy season predicted the drought to intensify

⁴*The Ethiopia’s NMA led the multi-disciplinary team that developed the First National Communication submitted to the UNFCCC in 2001 and outlined the need to strengthen the capacities of NMA in all four areas of capacity: human resources, institutional, infrastructure and process.*

This move ensures national ownership and commitment by the Ethiopian government to enhancing capacities at the NMHS and strengthen early warning system.

STEP 6 – Support was provided at both national and international levels in terms of food relief,
STEP 7 – Strategic plan (contingency plan) to deal with the drought was implemented led by the Disaster Prevention and Preparedness Agency acting on information from Ethiopia’s NMA and ICPAC.

Wheels were set in motion. The Disaster Prevention and Preparedness Agency began to meet regularly and plan for possible disaster in 2003 based on the early warning information from NMA. Funds were released to buy seed of short-cycle crops that could be grown during the long rainy season, to replace the failed long-cycle crops. The seed was distributed to farmers. The rains in June and July were also poor, as had been predicted. They improved in August, but it was too late to save most of the crops.

DPPA’s Early Warning Working Group organized a mid-season rapid assessment in August, and prepared a contingency plan based on this. This gave projections of affected population, food and income short-falls, numbers needing food assistance, and food need for both the first 3 months of 2003 and the whole of the year.

³ GEF projects for Ethiopia, http://www.thegef.org/gef/gef_country_prg/ET

⁴ <http://www.gefonline.org/ProjectDocs/Climate> First National Communication to UNFCCC.pdf

A multi-agency assessment was also carried out and forecast food requirements for 2003 under three different scenarios. Based on these assessments, an appeal was made in September for external aid. A second multi-agency assessment was carried out in November to establish the final harvest and determine actual emergency needs in 2003. This assessment showed that the situation approximated the worst case scenario. An intensive public awareness campaign was launched by the Disaster Prevention and Preparedness Agency

Forecast food requirements for Ethiopia for 2003 under three scenarios

Scenario	No. needing food aid	Food requirement (tonnes)
Best case	6.8 million	936,534
Mid case	10.2 million	1,475,862
Worst case	14.3 million	2,176,624

⁵The table below identifies populations at risk in each region of Ethiopia and in need of relief during the 2002 drought.

Table of Population in Need of Relief in 2002 (FEWS 14/02/02)

Region	Number of Beneficiaries	Percentage	Population in Need as % of rural Population
Tigray	917,200	17.7	26.8
Afar	225,400	4.3	20.3
Amhara	1,724,800	33.3	11.0
Oromiya	1,051,400	20.3	5.0
Somali	894,800	17.3	28.9
Benishangul- Gumuz	9,000	0.2	1.7
SNNP	303,300	5.9	2.5
Gambela	32,800	0.6	19.7
Harari	13,000	0.3	20.0
Dire Dawa	10,000	0.2	10.5
TOTAL	5,181,700	100	9.2

The media were actively involved. Field visits to the affected areas were arranged for representatives of humanitarian organizations and international development agencies, accompanied by national and international journalists. The President of Ethiopia went on television in November to address the nation about the impending disaster. Meanwhile, monitoring of the situation continued based on information from the NMA and from the field regularly informing the disaster response arm of DPPA. Food shortages reached their peak in April 2003, but the prompt response of the government's Disaster Prevention and Preparedness Agency had paid off. As a result of careful planning and well targeted international and national assistance, food relief was available when and where it was needed.

⁵ UN Standing Committee on Nutrition: Nutrition Information in Crisis Situations – Ethiopia.
http://www.unsystem.org/SCN/Publications/RNIS/countries/ethiopia_all.htm

⁶BBC World News reported on the escalating situation in Ethiopia on November 11, 2002, as described in the following excerpts:

Massive famine stalks Ethiopia



Famine: Ethiopia's "recurring nightmare"



Meles says his government just cannot cope

Ethiopian Prime Minister Meles Zenawi has warned that his country faces a famine worse than that of 1984 which killed nearly one million people and sparked a big international relief effort. "If the 1984 famine which killed nearly 1 million was a nightmare, then this will be too ghastly to contemplate," he said. The article further warned that Six million people were directly at threat and 15 million faced famine in the new year (2003) and appealed for 2million tonnes of food aid.



Photo by REUTERS: A woman walks for miles to gather firewood with a baby strapped to her torso.

Evaluation

STEP 8 – A M&E plan was in place and identified capacity gaps for Ethiopia's NMA that would greatly improve the early warning system for future drought responses. This process was used for continuous improvement.

Ethiopia responded to the challenges of its climate variations with an early warning system that enabled mitigation measures to be put in place before drought-related disaster escalated to famine situation. The early warning system is critical in informing the country and international donors to assess the need for emergency relief and to be prepared to deliver when it is needed. The effectiveness of the early warning

⁶ BBC News, World Edition, Africa: "Massive famine stalks Ethiopia". Monday, 11 November, 2002,

system was demonstrated in 2003 and adhered closely to the WMO Capacity Development 8-Step Model.

However, the status quo of the early warning system suggests that Ethiopia is not currently benefiting from all the capabilities the early warning system has to offer. There is potential for more benefits to be realized than is currently the case for local communities in the east and north of the country. The following capacity gaps, if addressed, would greatly strengthen the early warning system and improve Ethiopia's ability to mitigate drought more effectively:

Capacity Gaps identified in the Early Warning System

GAP 1: Communications both within the NMA as well as between the service and its users are currently poor. Improving links with local users is more of a challenge, and requires a re-evaluation of user groups particularly the farming and pastoral communities to establish communication channels with climate providers to generate products that are usable to them.

The anticipated implementation of the Climate User Interface Programme (CUIP) of the Global Framework for Climate Services is expected to encourage the development of mechanisms to link climate providers to users and facilitate user-driven generation of climate products. These mechanisms will allow users to express their needs and help shape products that will be usable to them. Climate providers will have the opportunity to prioritize user needs, inform focused research and solicit user feedback to improve climate products. Such a mechanism is well demonstrated in the "*Agriculture in Mali*" Case Study and has potential for replication in Ethiopia. The periodic GHACOFs by ICPAC provide such mechanisms at the regional level. Even more useful at the national and local level is ⁷*RANET Ethiopia, an ongoing programme by ACMAD using low cost radios provided to the local communities but using modern technology*. The local communities can receive weather, climate, agriculture, early warning advisories via solar radios with downloaded information from World Space Satellites and equipment.

Gap 2: At the moment, the early warning system mainly functions to ensure that sufficient external food aid reaches the country in a timely manner. However, it could be enhanced to play a much more useful role if it could also reach farmers and pastoralists more directly and improve their decision-making with timely advice on specific problems such as what crops to plant given a certain climate scenario, where to move the animals for pasture and water, as well as general information. These are the largest and most important user groups of climate information and efforts should be made to reach them with usable climate information. This implies tailoring climate information to specific local needs, and would require greater involvement of agricultural sector specialists than is currently the case. RANET Ethiopia can be utilized more effectively to close this gap.

This shows the government's efforts in improving the early warning system. WMO has also facilitated efforts to improve intermediary groups that facilitate climate information flow in the GFCS CUIP such as agricultural extension services in ensuring effective application of climate information by farmers and pastoral communities evidenced in the following excerpt:

⁸ *As part of its 'Building Climate Change Resilience' initiative, the Rockefeller Foundation has provided a grant of US\$ 323,000 for the training of trainers on weather and climate information and products for the Agricultural Extension Services in Ethiopia. WMO's Agricultural Meteorology Programme of the Climate Prediction and Adaptation (CLPA) Branch of Climate and Water Department will implement the project.*

GAP 3: The early warning system functions well, but improvements could nonetheless be made. Both the quantity and the quality of data available from Ethiopia's NMA are limited and shortage of trained personnel is a constraint. Building capacity at the NMA in human resources, infrastructure, and

⁷ RANET Ethiopia, <http://www.meteo-ethiopia.net/>

⁸ WMO Meteoworld, February 2010. Grant to strengthen Ethiopia's Agriculture Extension Services

institutional arrangements will improve the early warning system. Ethiopia submitted its First National Communication to the UNFCCC in 2001 calling for enhanced capacities in its early warning system as evidenced by the following excerpt:

⁹*The NMA of Ethiopia led the multi-disciplinary team that developed the First National Communication submitted to the UNFCCC in 2001 and outlined the need to strengthen the capacities of the NMA in all four areas of capacity: human resources, institutional, infrastructure and process. This move ensures national ownership and commitment by the Ethiopian government to enhancing capacities at the NMA and strengthen the early warning system.*

In addition, the ongoing climate programme at the Africa Climate Desk of NOAA, National Centers for Environmental Prediction (NCEP) in USA is developing the capacity of NMAs staff in RA-I to enhance their skill in interpreting and downscaling regional climate products to the national level.

GAP 4: There are not enough stations collecting local data, and the ones that do exist are often situated along the main roads or in towns. Thus more weather stations are needed, in particular to cover the more remote areas that are currently neglected, but also generally, to capture the full range of localized climates across the country. Increased use of satellite data could compensate for limited ground data to some extent, and also improve their usefulness.

The decline of national meteorological observatories has been more acute in developing countries due to lack of adequate funding by national governments to maintain them. WMO is a co-sponsor of the Global Climate Observing System Programme (GCOS) which celebrated its 20th Anniversary in June 2012 and highlighted its achievements in the rehabilitation of national observatories for climate data. One of the achievements of the programme is the implementation of the Climate For Development in Africa (CLIM-DEV) in 2006. National governments will have to step up and provide budgetary support for maintaining national observatories which have far-reaching implications at all levels of the climate arena. The following is an excerpt from the GCOS booklet reporting limited progress in filling data gaps in developing countries:

¹⁰*The report noted that there had been only limited progress toward filling the gaps in observing systems in developing countries and that there was still a long way to go before a fully implemented global observing system for climate could be achieved.*

WMO recently endorsed the establishment of AMCOMET (African Ministerial Conference on Meteorology) which will be critical in soliciting national government support for the maintenance of national meteorological observatories in RA-I. The Observations component is critical to all other components of the GFCS and efforts to improve national observatories will directly contribute to the successful implementation of the GFCS.

GAP 5: In parallel with these improvements, more skilled staff are needed trained in data collection and analysis. Strengthened capacity for analysis at the district level would greatly improve the performance of the NMA and the usefulness of its information. The current centralized analysis and resulting forecasts provide a general view of climate in the country. But given Ethiopia's diverse local climates, this general information is not adequate for detailed planning by users. High resolution climate products at the regional level has remained elusive but ongoing efforts in scientific research is anticipated to produce results that will be applicable at the local levels.

⁹ <http://www.gefonline.org/ProjectDocs/Climate> First National Communication to UNFCCC.pdf

¹⁰ GCOS: 20 Years in Service for Climate Observations.
http://www.wmo.int/pages/prog/gcos/Publications/GCOS_book_20years.pdf

GAP 6: The role of the media in reporting on droughts and disasters has changed in recent years. During the drought of the early 1980s, the national media were constrained in their reporting, as they were under a more restrictive government regime than today. Also, there were few links between the media and the NMA such that information was not easily available to them. They played almost no part in publicizing the drought and its impact on the country. The international media did report on the drought when it reached the scale of a disaster, and with great effect. The general public in western countries were quickly made aware of the crisis, and both they and their governments responded generously.

A major achievement of the GHACOF by ICPAC has been the participation of journalists and the dissemination of climate information which led to the establishment of the Network of Climate Journalists in the Greater Horn of Africa (NECJOGHA). The network is involved in outreach programmes to build the capacity of fellow journalists to be partners in effective communication of climate information to the public.

Conclusion

The national and local media in particular have an expanded role, though it needs to be strengthened further. The challenge of conveying useful messages in local languages to the millions of rural people with climate-sensitive livelihoods in Ethiopia can only be solved through imaginative use of local media.

At the moment, the early warning system mainly functions to ensure sufficient external food aid reaches the country. Ethiopia stands to benefit from all fronts when the role of the early warning system is expanded to reach farmers and pastoralists more directly, with timely advice and tailored climate information that address specific local needs. Such efforts will facilitate adaptation actions by the local communities and the beginning of resilience building to future, more severe impacts of drought. The information would advise the pastoral communities to strategically move their animals to areas with adequate pasture and water and avoid high risk areas. The implementation of the GFCS particularly the Climate User Interface will provide the opportunity for increased involvement of agricultural sector specialists in communicating climate information to the farming and pastoral communities.

Some significant achievements are demonstrated and worthy of note. First is Ethiopia's NMA weather and climate products which are already translated and disseminated in local languages and a major step towards reaching the farming and pastoral communities with climate warning advisories. Second is the recognition by the government of the critical services provided by NMA in strengthening Ethiopia's early warning system and the resulting long-term, sustained support of NMA as evidenced below:

Ministry of Water and Energy Minister Alemayehu Tegenu disclosed that the National Meteorological Agency of Ethiopia is providing tangible support to the development of Ethiopia. The Minister stated while opening the 15th Ordinary Session of the Board of Governors of ACMAD and the 3rd VIGIRISC Steering Committee Meeting which was held 28-30 June, 2012 Addis Ababa Ethiopia. He noted "The government of Ethiopia is very much grateful that the National Meteorological Agency of Ethiopia is considered by the World Meteorological Organization as an excellent center contributing to the region's climate activities. The Board Chair of ACMAD Mr. Mustapha Geanah on his part appreciated the government of Ethiopia for hosting and supporting the activities of ACMAD.39 representatives of African Center of Meteorological Applications for Development, ACMAD, ICPAC and WMO attended the event at Desalegn Hotel in Addis Ababa.



Ethiopia's Water & Energy Minister and ACMAD Board Chair
Source: NMA of Ethiopia website:

Lessons Learned since the 2002 Drought

Since the 2002 Drought event, Ethiopia has learnt some hard lessons and the government has forged ahead to prevent famine situations during drought events which are inevitable. The following improvements have been put in place:

1 Implementation of the Productive Safety Net Programme

Ethiopia has made significant efforts to put in place, coping mechanisms for its people by implementing the Safety Net Programme. The objective of the programme was two-fold: First, to provide households with enough income (cash/food) to meet their food gap and thereby protect their household assets from depletion during drought situations, second, to build community assets to contribute to addressing root causes of food insecurity. ¹¹The [Productive Safety-Net Programme](#) (PSNP), launched in 2005, is an important policy initiative by the Ethiopia government and donors to shift millions of chronically food-insecure rural people from recurrent emergency food aid to a more secure and predictable, and largely cash-based, form of social protection. The PSNP represents a serious and innovative attempt on the part of the Government of Ethiopia to move away from responding to chronic hunger through emergency appeals towards a more predictable response with predictable resources for a predictable problem.

2. Poverty and vulnerability reduction in preventing famine

The impacts of drought can be reduced through mitigation and preparedness. The government of Ethiopia has made significant progress in shifting its early warning system from reactionary to anticipatory in disaster situations. In the last decade, investment in early warning systems has paid off, and aid agencies have information available about rainfall, vegetation and trends in food prices. However, prevention should be about sustained investment in long-term solutions that reduce vulnerabilities, not just in predicting emergencies but in equipping local communities to adapt to the impacts of drought and accrue resilience to future more frequent and severe impacts. Strengthening capacity at NMA in all areas: Human skill, Infrastructure, institutional and process would go far in an effective early warning system and reducing vulnerability to prevent famine.

Information source: Climate Risk Management in Africa - Learning From Practice , International Research Institute for Climate & Society (IRI) Publication, 2007. www.iri.columbia.edu

¹¹ Overseas Development Institute (ODI). Website: www.odi.org.uk