

## ECOSOC Special Meeting

### Impacts of the 2015/16 El Niño phenomenon: Reducing risks and capturing opportunities

*ECOSOC Chamber, UN Headquarters  
6 May 2016, 10am – 1pm*

Background paper – Draft 5 May<sup>1</sup>

#### Introduction

The 2015/16 El Niño is one of the strongest on record. The warming of the central to east equatorial Pacific of +2 °C has had impacts globally, regionally and country-specific. In certain regions, the occurrences of droughts, storm surges, floods, wildland fires and hot and cold spells in 2015 and 2016 have been associated with the ongoing El Niño.

The paper is a contribution to a request by the UN General Assembly in Resolution A/70/110 for the Secretary-General to report on the socioeconomic and environmental impacts of the 2015/16 El Niño phenomenon. The paper presents: 1) overview of impacts to date of the El Niño phenomenon on lives and livelihoods; and 2) the policies and plans put in place and measures need to be taken by countries and regions to manage and reduce the risk of extreme events related to El Niño. The type of policies include the generation of climate information and predictions, provision of impact based warnings and climate services as well as the development and application of specific preparedness and response plans in key sectors regionally, nationally and locally.

While it is too early to assess the overall socio-economic impacts of El Niño, the information in this paper reflects impacts from current documented events. These estimations of impacts are drawn from estimations of loss and damages of extreme events by countries related to the 2015/16 El Niño and information contained in humanitarian appeals.

The estimations of loss and damages by countries are part of the ongoing efforts to reduce their risk to disasters and climate change, including the measuring of lives lost, economic impacts and people affected by disasters in-line with the Target 11.5 of the Sustainable Development Goals (SDGs)<sup>2</sup>, Targets (a), (b), (c) and (g) of the Sendai Framework<sup>3</sup> and the adaptation goal of the Paris Agreement on Climate Change<sup>4</sup>.

---

<sup>1</sup> This draft paper has been prepared as an input to the Secretary-General's report on disaster risk reduction and will be finalised following the ECOSOC special meeting on the impacts of the 2015/16 El Niño phenomenon.

<sup>2</sup> SDG Target 1.5 'By 2030 build the resilience of the poor and those in vulnerable situations, and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters'.

<sup>3</sup> Sendai Targets:

(a) Substantially reduce global disaster mortality by 2030, aiming to lower the average per 100,000 global mortality rate in the decade 2020–2030 compared to the period 2005–2015;

(b) Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020–2030 compared to the period 2005–2015;

(c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030; and

(g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030.

<sup>4</sup> Adaptation goal: 'enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change'.

The report also draws from the systems put in place by the Global Framework for Climate Services (GFCS) led by WMO to assist countries to generate and use climate services to build their resilience.

Not all countries have the same level of exposure to El Niño related extreme events. There is greater economic exposure to middle and upper income countries, while the proportional impact, and the impact on people and their livelihoods is higher for lower income countries' and Small Island Developing States (SIDS). Climate change is also likely to increase El Niño risk further highlighting long term development strategies needed to factor in these risks.

It is noteworthy that the value of linking the occurrence of potential extreme events to the El Niño Southern Oscillation cycle lies predominantly in the increased predictability provided by the related seasonal predictions of potential occurrence of extreme climate conditions and events in countries. Understanding how countries are coping with the El Niño phenomenon requires the understanding of how countries and regional organizations approach this higher level of predictability. This includes how countries manage seasonal forecasts and what actions are taken to manage and reduce the related risk and impacts.

The paper includes inputs from the Central American Agricultural Council (CAC), the Food and Agricultural Organization (FAO), the Food Security and Nutrition Working Group (FSNWG), United Nations Humanitarian Country Teams (HCT), Regional Integrated Multi-hazard Early Warning System (RIMES), the International Research Centre on El Niño (CIIFEN), the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), the Intergovernmental Authority on Development Climate Prediction and Applications Centre (ICPAC), UNICEF, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), United Nations Institute for Training and Research (UNITAR), World Food Program (WFP), World Health Organization (WHO), and World Meteorological Organization (WMO).

### **El Niño Related Weather Events' Impact Overview**

Extreme weather has implications on people's lives, health and livelihoods. 90 percent of disasters that have occurred over the last 20 years have been caused by weather related events, affecting more than 4 billion people in total and accounting 250-300 billion USD in annual economic losses.

While the overall global impact of disasters typically does not increase during El Niño years, countries in affected regions do see a change in weather patterns leading to an increased loss of lives and livelihoods.

Some regions have experienced greater precipitation leading to floods, others have experienced severe droughts affecting crop yields and livestock production and leading to food, water and animal feed shortages, and wildfires. In countries where economies and individuals rely primarily on agriculture for subsistence the impact of drought, in particular, is considerably higher.

As of April 2016, flooding has been reported in parts of Southern, Central and parts of Eastern Africa, while severe drought is affecting people in Central America the Caribbean, the Horn of Africa, Southern Africa, and parts of Asia and the Pacific. A higher occurrence of forest fires is reported in South-Eastern Asia.

Regardless of the type of weather event, individuals are experiencing higher vulnerabilities to the socio-economic and environmental impacts of these prolonged weather systems. Short - and long-term impacts to health and security of the individual, the economy and food production locally, nationally, regionally and globally have been reported.

### *Central America and the Caribbean*

#### Impacts:

- Central America is experiencing the worst drought in decades. It is affecting food insecurity for a second consecutive year after suffering major crop losses due to prolonged drought conditions. The 2016 maize harvest is expected to be far below average and some 8 per cent below last year's harvest.
- Countries of Mesoamerica – particularly in the Central American Dry Corridor – and the Caribbean have increased risks to agriculture caused by drought, including production, market access, financial services and institutional enforcement of regulations. The intensity and frequency of drought is exacerbated by the current event, as well as climate change and growing vulnerabilities.
- El Niño has had the greatest impact in this region on those who rely on the agricultural sector with many families facing undernourishment<sup>5</sup>. An estimated 3.5 million people are food insecure and in need of humanitarian assistance in Guatemala, Honduras and El Salvador.
- In the Caribbean, El Niño has led to the classification of 3.6 million people as food insecure and an additional 1.5 million people as severely food insecure. The insecurities result from decreased agricultural yields, reduced food availability and higher market prices. The 2015 spring harvest has resulted in 89 per cent losses in the most drought-affected areas.

#### Measures Taken by Countries and Regional Organizations:

- State of Emergency has been declared in El Salvador and Guatemala.
- Honduras and Nicaragua are implementing El Niño Drought Action Plans.
- American Agricultural Council (CAC) joined with the Central American Commission on Environment and Development (CCAD) to address drought risk and seek sustainable solutions. A Regional Action Plan was coordinated by the Executive Secretary of the CAC and ratified by the Inter-sectoral Meeting of the Ministers of Foreign Affairs and the Ministers of the Environment (CCAD) on 2 September 2015.
- In Guatemala, Haiti and Honduras, HCT plans fund USD 29.15 million of the USD 206.7 million needed in humanitarian aid. Joint Government and HCT plans in El Salvador show USD 4.2 million of the USD 44.6 million needed in humanitarian aid.

---

<sup>5</sup> According to the State of Food Insecurity (FAO, 2015, Panorama de la Seguridad Alimentaria en América Latina y el Caribe), more than five million people are undernourished in Central America; most of these people live in rural areas and depend on agriculture for subsistence.

- Early warning has been led by Haiti's National Committee for Food Security (CNSA), Ministry of Agriculture, the FEWSNET and GIEWS. Initiatives are in place for the reinforcement of monitoring and surveillance mechanisms and to improve coordination among stakeholders.
- Peruvian Government declared a state of emergency in July 2015 for 14 states. They provided 70 million USD for states to prepare for potential flooding. Actions included clearing river beds of debris, fortifying reservoir walls and sandbagging. The Government has also implemented an El Niño National Action Plan, as well as a National Disaster Risk Management and Climate Change Adaptation Plan for Agriculture (PLANGRACC-A), with support from FAO.
- Guatemala is supporting the creation of water reservoirs and improving local water management and soil conservation practices.
- El Salvador has distributed maize and bean seeds to affected farmers experiencing shortages and is also providing assistance through the implementation of pumps. The Government has also distributed drought- and rust-resistant coffee plants and trained producers on the use of irrigation techniques.

#### *Africa*

- The African Union Commission (AUC) is playing a pivotal role in assisting countries manage the risks of El-Niño on the continent, including by leading and coordinating the development of contingency and response plans and mobilizing commitments and resources for their implementation.
- AUC has also called on Member States to implement their commitments under the Sendai Framework for Disaster Risk Reduction 2015-2030 and increase budget allocation for disaster risk reduction as a key instrument to reducing and managing the risks of extreme weather and climate events associated with the El-Niño phenomenon.
- AUC convened Ministerial Round Table discussion on the current economic, financial, agricultural and humanitarian challenges facing African Economies and Ministers reaffirmed their commitment to reduce losses in lives, livelihoods and health as a result of disasters through the implementation of the Sendai Framework.
- Recognizing the role of disaster risk reduction in achieving Agenda 2063, Ministers have also committed to including disaster preparation and management in national development plans and to allocating sufficient funds for related activities.
- 32 African countries are collaborating with the African Risk Capacity (ARC), a Specialized Agency of the African Union, to improve their capacity to better plan, prepare and respond to extreme weather events through finance mechanisms such as risk pooling and risk transfer mechanisms.

#### *Eastern and Central Africa*

#### Impacts:

- As of February 2016, 20.4 million people are severely food insecure and suffering from malnutrition in Eastern Africa.
- Ethiopia is experiencing its worst drought in 50 years with some areas experiencing between 50-90 per cent crop loss. An estimated rise to 10.2 million people will need humanitarian food assistance in 2016 as a result which is the highest in the last 10 years<sup>6</sup>.
- In Somalia, drought has been declared in Puntland and Somaliland, where some communities have not experienced normal rains for up to four seasons, spanning two years. Nearly 4.7 million people are food insecure. Of this figure, 1.7 million people are in Puntland and Somaliland.
- 4.6 million people in Sudan are acutely food insecure, primarily due to the effects of El Niño, and is likely to increase due to below-average agricultural production in 2015, rising staple food prices, very poor pasture conditions and continued conflict.
- WHO has reported cholera outbreaks in Kenya, Uganda, Tanzania and Ethiopia following high-precipitation events.
- Parts of Central Africa have experienced heavy rains and flooding, including the Democratic Republic of Congo.
- In Central Africa, 550,000 people have been affected by extreme weather events as of March 2016, with damages to homes, food supplies, and infrastructure.

#### Measures Taken by Countries and Regional Organizations:

- The Intergovernmental Authority on Development (IGAD) convened High-Level Regional consultative meetings to discuss El-Niño mitigation plans and led and coordinated resource mobilization efforts.
- The Intergovernmental Authority on Development Climate Prediction and Applications Centre (ICPAC) has convened climate outlook forums to issue predictions and learn lessons regarding the El Niño impacts and level of preparedness that was put in place by countries in the region.
- Joint Government and HCT Plans in Ethiopia and Sudan have provided USD 761 million of support out of the required USD 1.48 billion in humanitarian aid. The Government of Ethiopia has also provided relief food and other non-food assistance to needy people in drought and flood affected areas.
- The Government of Sudan is preparing to conduct a post-harvest assessment.
- “Call for Aid: El Niño and Drought in Somalia” was issued in late March 2016 by the Government of Somalia.

---

<sup>6</sup> Source: Government of Ethiopia, [www.dppc.gov.et](http://www.dppc.gov.et)

- The Government of Angola has put into action the contingency plan for southern Angola and civil protection, agriculture and health authorities are working together. The Ministry of Health has started revitalizing health services, particularly to combat yellow fever, malaria and chikungunya.
- Chad is strengthening support to agricultural producers, providing fertilizer, seeds, pesticides and agricultural equipment.

### *Southern Africa*

#### Impacts:

- Drought faces many of the countries in Southern Africa, with particular vulnerabilities to those that depend on the agriculture sector. An estimated 31.6 million people are food insecure in the region with Lesotho, Malawi, Mozambique, Swaziland and Zimbabwe declaring drought emergencies. The region is facing one of the driest rainfall seasons in the last 35 years while forecasts continue to indicate drier than normal conditions. Over 28 million people in the region are affected by the poor rain season resulting from the 2015/2016 El Niño event, and that this figure is likely to increase<sup>7</sup>.
- In South Africa, food insecurity is increasing after a drop of 22 per cent in maize production in 2014/15. A second drop similar to the one that occurred during the 1998/98 El Niño (24 per cent) would require South Africa to import 750,000 tons of maize to meet its population needs.
- Decreased maize production would cause the country to experience decreases in agricultural employment; compounded by increases in food and market prices.
- Floods are expected in Malawi, Mozambique, Tanzania and Madagascar. More than 1.8 million people were affected by floods from January to March 2016, including the displacement of 280,000 people, 600 deaths, and 15,500 cholera cases.

#### Measures Taken by Countries and Regional Organizations:

- The Southern African Development Community (SADC) convened a regional meeting at which short- and medium/long-term mitigation plans and regional preparedness and response strategy to address the impacts of El Niño on agriculture and food and nutrition security in Southern Africa were discussed and agreed.
- Government of Malawi is increasing social support services (safety nets), including: social cash transfers; income-generating public works programme; inputs for assets programme; school feeding; and farm input subsidy programme. USD 71 million of USD 146 million outlined in Malawi's Government Plan for humanitarian aid has been funded and only USD 108.8 million of the USD 667 million outlined in Mozambique, Zimbabwe, Malawi, Swaziland, and Lesotho Government Plans.
- On 12 April 2016, the Government of Mozambique declared a "red alert" for a period of three months.

---

<sup>7</sup> Southern African Development Community (<http://bit.ly/1SJHcRO>)

- The Government of Madagascar declared a State of Emergency on 22 March 2016 for southern Madagascar. The Government has reviewed and updated the Food Security and Nutrition contingency plan.
- Zambia's Disaster Management and Mitigation Unit is updating the Development of Zambia rural Livelihoods Baselines. They have also prepared a draft 2015/16 National Contingency Plan.
- The President of Zimbabwe declared a State of Emergency on 5 February 2016. The Government is in the process of importing 700,000 tonnes of maize, as well as developing an El Niño Contingency Plan.
- The Government of Namibia is providing farmers 3 ha per farmer with subsidized seeds and fertilizers from those impacted in the 2015/16 season. Subsidies are also being provided for ploughing and weeding operations. The Government has provided USD 37 million in drought relief from November 2015 to March 2016.
- The Government of Lesotho declared a State of Emergency on 22 December 2015. The Government has implemented the Drought Preparedness and Mitigation Plan. The Disaster Management Authority has released a national Drought Emergency Response Plan estimating USD 12 million will be required for the agriculture and food security sector to effectively respond.
- Botswana's Ministry of Agriculture increased subsidies on certain livestock feeds by 50 per cent.
- Government of Swaziland declared a National State of Emergency on 18 February 2016 and launched the National Emergency Response, Mitigation and Adaptation Plan. They have also authorized water restrictions.
- South Africa is reprioritizing to provide USD 14.5 million to alleviate El Niño related impacts.

### *Southeast Asia and the Pacific*

#### Impacts:

- Parts of Southeast Asia and the Pacific are experiencing severe drought, along with very severe cyclones since July 2015.
- A Category 5 Severe tropical Cyclone "Winston" hit Fiji on 20-21 February affecting 40 per cent of the population and damaging 100 per cent of crops in the hardest hit areas. Total damage to the country is estimated at over USD 500 million and 350,000 people affected, around 40% of the population.

In the Pacific Region, current estimates suggest that 4.3 million people in 12 Pacific countries could be at risk from changed rainfall patterns caused by El Niño (drought and increased rainfall).

- In April 2016, the President of the United States declared the severe drought in the Marshall Islands a disaster, opening the way for emergency United States funding for the Pacific island nation, which is suffering one of its worst-ever droughts. The low-lying Marshall Islands is extremely reliant on consistent rainfall for its water supply given there are few freshwater reservoirs or sources of groundwater. The strong El Niño climate event has fueled the drought, with Micronesia, Palau, Fiji and Papua New Guinea also affected to varying degrees.
- Dry conditions in Indonesia have led to wildfires, crop production loss and water scarcity. In 2015, fires burnt 2.6 million ha of forest and agricultural land. Health effects, such as above normal acute respiratory infections and other health repercussions, have been reported. Delays in seasonal rains by up to 8 weeks caused a 70 per cent reduction in on time crop planting in 2015/16.
- A third of Papua New Guinea's population – 2.7 million people – are affected by drought, frost and forest fires.
- An early assessment shows 220,000 people in Timor-Leste will be affected if harvests fail due to drought. Up to 50 per cent of the Oecusse, Atauro and Metinaro districts may become food and water insecure as a result.
- FAO estimates that 68 of 81 Philippines provinces are likely to experience drought in the first third of 2016. This may lead to severe damage to farms, fisheries and forests, affecting more than 12 million people.
- In 2015, reports on India show a 14 per cent decrease of seasonal rainfall and a 30 per cent drop in reservoir levels.
- Reports that El Niño has peaked and a return to neutral conditions is expected in the second quarter of 2016, but many countries still expect to experience effects of El Niño in the coming weeks and months. Effects include: more intense cyclones in the North-Western Pacific; more frequent cyclones in the South Pacific; and drought in South and South-East Asia.

#### Measures Taken by Countries and Regional Organizations:

- A consensus outlook was released for the 2015 northeast monsoon season rainfall over South Asia on 14 to 15 October 2015 jointly by WMO, IMD/the Government of India, RIMES and CIDA.
- Regular El Niño Advisory Notes have been prepared by ESCAP and RIMES.
- In the Philippines, the Government is preparing a Roadmap to Address the Impact of El Niño (RAIN), focusing on lower food production, higher prices and lower farm income. Activities to help farmers cope with drought have also been implemented, such as cloud seeding, seed distribution, crop diversification and rotation, and water saving.
- Indonesia allocated USD 258 million to improve food reserves and stabilize prices of staple foods. The Ministry of Social Affairs provided an additional two-month rice rotation for the Rice for Family Welfare programme beneficiaries in October. In 2015,



the Government allocated an additional USD 57 million to the National Disaster Management Agency for fire management activities.

- The Government of Mongolia plans to allocate USD 5.3 million to support herders overcome the potentially harsh winter dzud ahead, and it is also trying export meat and live animals to China, the Russian Federation and Viet Nam, to reduce pressure on the likely limited fodder for livestock during the dzud.
- Alerts for possible flooding and landslides have been raised in Viet Nam, particularly for high-risk communities. Viet Nam has declared a State of Emergency in 15 provinces and has submitted a request for UN and donor support. A multi-stakeholder event has been organized by the Government to prepare for the drought in the southern part of the country.
- The Government of Myanmar has advised people living near rivers to leave their homes if water levels have risen beyond danger points (FAO, 2015). Myanmar is providing assistance in water distribution, infrastructure installation and through education.
- Papua New Guinea has allocated USD 8.5 million to drought response. In Tonga, emergency water supplies are being distributed to the outer islands and water desalination services have been made available.
- Fiji extended the State of Natural Disaster in affected areas until 19 April 2016, with 67,000 people targeted with Government water deliveries in villages and schools. The Government is also distributing rice and tinned fish to affected communities. Emergency water deliveries are also occurring in Fiji, especially on the outer islands, and Samoa has declared a meteorological drought and asked people to conserve water.
- Vanuatu has provided USD 480,000 in emergency El Niño funding for water, sanitation, hygiene, food security and logistics needs. The Ministry of Health in Vanuatu is working with WHO in planning assessments of healthcare facilities and carrying out malnutrition screenings in local villages.
- Timor-Leste's Ministry of Agriculture and Fisheries issued early warning messages to raise awareness of El Niño and response actions to mitigate potential impact. The Government also developed a preparedness and emergency response plan for El Niño, with support from Humanitarian Country Team. They have put in place regular monitoring and coordination mechanisms.

## **Conclusions**

- In countries with ongoing high level of exposure and vulnerability to extreme weather and climate events the compounding effect of the current El Niño phenomenon is putting additional burden on their national and local capacity to manage risk and disasters. The increased burden has led to calls for humanitarian assistance totalling nearly USD 3 billion by April 2016.
- Regions and countries that have put in place longer term policies to initiate climate predictions through regional and national climate centres and, those who have the capacity to act on the predictions, are experiencing lower impacts.

- The El Niño event has highlighted the gap between the humanitarian funding requirements in countries to address El Niño related emergencies and the capacity of the international community to respond (as of April 2016, 33 per cent of humanitarian appeals were covered).

## **Recommendations**

1. Investments are required in long-term efforts to provide climate services that reduce the risk to extreme events and increase local and national preparedness capacity and resilience – particularly in the agriculture and food security, water and health sectors – in line with the Sendai Framework, the Paris Climate Change Agreements and the SDGs.
2. Though no two El Niño impacts are identical, past El Niño associated risk patterns provide guidance to anticipate and manage future El Niño associated risks. Lessons learned on what was predicted, communicated, what were the impacts and what actions were taken in the context of the 2015/2016 El Niño phenomenon will be required; drawing on the institutions that contribute the observations, , the regional and national climate centres and key sectors and other end-users of climate information in countries. The Global Framework for Climate Services provides a useful frame for such lessons learned.
3. Sustained commitments and investments are needed to improve regional and national climate services and establish and/or strengthen multi-hazard early warning mechanisms and preparedness for effective response at all levels to reduce the effects of extreme weather and climate events, including those associated with El-Niño.
4. Implementation of livelihood-based safety net programmes should be accelerated to reduce vulnerability of affected populations and enhance their resilience.
5. While current efforts on preparedness and response are continued, risk reduction plans and activities should be developed to prevent the current crisis entering a protracted phase. This should be supported by adequate risk assessments and weather and climate forecasts.