

# NICARAGUA

## Dry spell in northern Nicaragua

An El Niño phenomenon, although weak, has developed since February affecting several Central American countries, in particular Guatemala, Honduras, El Salvador and Nicaragua, known as the Dry Corridor. Below-average rainfall since mid-June in northern Nicaragua is decreasing water availability and will likely result in a poor Primera harvest in August. Abnormally dry conditions are decreasing livelihood opportunities and will drive food insecurity. The most affected areas in northern Nicaragua are projected to experience Stressed (IPC-2) food security outcomes until January 2020. The most vulnerable households are likely to face Crisis (IPC-3) outcomes and are likely to resort to negative coping strategies, including reduced food consumption and sale of productive assets. Needs are likely to include food assistance, livelihood support and WASH.

### Accumulated Precipitation between 1 and 15 July



Source: INEIER as of 15/07/2019

#### PROBABILITY



#### IMPACT



#### NEED FOR INTERNATIONAL ASSISTANCE



### Key priorities



**Food and Livelihoods**  
Impacted by drought conditions



**Drinking water**  
For affected population, livestock

### Humanitarian constraints



No significant access constraints reported.

#### Limitations

Up-to-date data on people in the affected area and their humanitarian conditions and needs is not currently available. Information regarding response and preparedness, as well as lessons learned from previous emergencies, is limited.

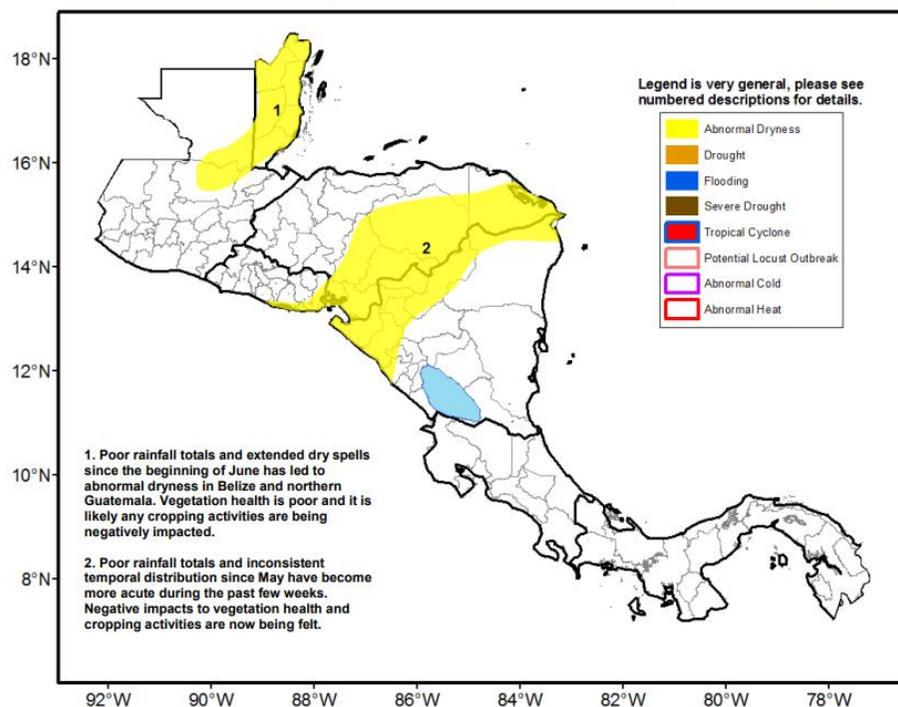
## Drivers of the crisis

A weak El Niño Southern Oscillation (ENSO) phenomenon has developed primarily in northern Nicaragua since mid-February (El Nuevo Diario 16/02/2019). In May, central-Pacific, southern, northern and central parts of the country received excessive rainfall, favourable for the Primera planting season from mid-April to June (FEWS NET 06/19). However, since mid-June, rainfall has been below average, putting an early end to the first rainy season (normally mid-April until late July). As of mid-July, various areas across the country are expecting abnormally low rainfall: approximately 75mm in the Pacific region, and 25-200mm in northern and central areas, less than 50% of what is expected during this time of the year in many locations in northern Nicaragua (NOAA 18/06/2019). Additionally, a temperature increase of 2 degrees Celsius has been observed in soils, further reducing soil moisture necessary for crop growth (INETER as of 15/07/2019; FEWS NET 07/2019; FEWS NET 19/07/2019).



### Climate Prediction Center's Central America Hazards Outlook July 18 – July 24, 2019

Abnormal dryness is building in the region after an extended period of insufficient and poorly distributed rain.



Source : NOAA 18/07/2019

Although no widespread deterioration of vegetation health has been observed so far, the lack of rainfall is decreasing water availability and will likely result in a poor Primera harvest in August (NOAA 18/07/2019; FEWS NET 06/2019). This will come at a critical time of the year, as food stocks of vulnerable households are depleted (FEWS NET June 2019). As 90% of all crops are rainfed, the country is especially vulnerable to irregular and decreased rainfall during El Niño events (GoN, WB, GFDRR 31/01/2019).

There is a 55% probability of a continuing El Niño of weak intensity until January 2020 which is likely to have a negative impact on Primera (and potentially Postrera) harvests (FEWS NET 06/2019). Especially small-scale, subsistence farmers are likely to depend on markets to meet their food needs between June and September. Dry conditions are decreasing livelihood opportunities and will drive food insecurity. The most affected areas (likely to include the departments of Nueva Segovia, Madriz, Esteli and Leon) are projected to experience Stressed (IPC-2) outcomes until January 2020 (FEWS NET 06/2019). Poorest households with severely limited access to basic services are likely facing Crisis outcomes (IPC-3) (FEWS NET 06/2019).

Across the Dry Corridor (Guatemala, Honduras, El Salvador and Nicaragua) some 1.4 million people are currently estimated to be in urgent need of food assistance; however, no Nicaragua-specific numbers are currently publicly available (EWEA FAO 07/2019). The total population of the departments in Nicaragua experiencing abnormal dryness in late July (Junitega, Nueva Segovia, Madriz, Esteli, Chinandega, Leon, Matagalpa) correspond to 1,920,796 people and it is unclear how many are currently affected by the dry conditions (NOAA 18/07/2019; Census 2005). During the drought in 2018, 300,000 Nicaraguans were affected (Aid Forum 21/08/2018).

Smallholder farmers, who make up the majority of Nicaragua's agricultural sector, are particularly likely to experience higher levels of food insecurity with limited coping capacity. More vulnerable households will likely resort to negative and irreversible coping strategies, including reducing food intake, consuming less nutritious foods, sale of productive assets, increase of child labour, and temporary internal or cross-border migration in search for livelihood opportunities.

## Anticipated crisis impact

**Food and livelihoods:** Below-average rainfall has a severe impact on food security and livelihoods in Nicaragua, where close to 70% of the total population depend on agriculture for their livelihoods (WFP as of 22/07/2019). While the sowing for the Primera season of 2019 seems to have been carried out without major delays, a prolonged period of dryness will negatively affect the harvest in August (FEWS NET 30/06/2019). About 90% of crops are rainfed while only 10% are cultivated in Nicaragua (GoN, WB, GFDRR 31/01/2019).

Food stocks are expected to deplete and staple food prices (maize, beans) will further increase (FEWS NET 06/2019). Subsistence farmers are anticipated to depend on food markets to meet their food needs and are likely to resort to negative coping strategies amid the lack of livelihood opportunities, particularly for unskilled labour. A drought might push vulnerable people into temporary internal or cross-border displacement. Reduced water availability will also affect livestock, which could have long-term effects on livelihoods and food security, especially if temperatures continue to rise. During the 2016 El Niño, up to 90% of maize and 60% of bean crops were lost (DW 12/06/2019). The loss of staple foods in 2018 has depleted food stocks and increased the food insecurity of the rural population in the Dry Corridor (FAO/WFP 25/04/2019). The impact of the abnormal dryness on food security will be less pronounced on the coasts, in areas where alternative sources of income and livelihoods, such as (commercial) fishing, exist.

**Health and nutrition:** Deterioration of the nutritional situation is highly likely. Chronic malnutrition already affects 17% of all children under five years, and is even higher in the northern departments of Nueva Segovia and Madriz, currently affected by rainfall shortages (WFP as of 22/07/2019). During previous drought periods, families reduced food intake to one to two meals per day and consumed less nutritional foods (DW 12/06/2019; FEWS NET 06/2019). Children are particularly vulnerable to malnutrition; as their nutritional situation is likely to worsen (FAO/WFP 25/04/2019).

Other health related issues are very likely, particularly waterborne diseases, because of high levels of contamination of surface waters and reduced resilience due to poor health conditions. Despite a lack of health information pertaining to the current drought in Nicaragua, a series of health related issues have been identified in connection to climate change in Central America, such as increase in mortality and morbidity indices, increase in infectious and non-infectious, vector-borne and non-vector-borne diseases (malaria, dengue, etc.); increase in malnutrition and dehydration indices; psychosomatic effects such as post-traumatic disorders and depression, caused by the climatological phenomenon (ECLAC 08/2018).

Drought can also have secondary effects on public health in relation to displacement of those affected to small, unsanitary spaces (ECLAC 08/2018).

**WASH:** A scarcity of drinking water increases the risk of dehydration. Below-average rainfall is reducing water availability and is likely to increase the contamination of groundwater and surface water (Viruses, protozoa, bacteria) (CDC accessed 23/07/2019). As only 67.8% (2011) of the rural population use improved water sources in Nicaragua, people getting their drinking water from wells are exposed to a higher risk of waterborne diseases (UNICEF accessed 23/07/2019; WHO accessed 23/07/2019). In drought conditions, the use of recycled water to irrigate agricultural land can contaminate food items.

At the same time, reduced water availability can impact hygiene practices, such as reduced hand washing, in the affected areas; this increases the risk of infectious diseases including acute respiratory and gastrointestinal illnesses (CDC accessed 23/07/2019). Only 37% of the rural population have access to improved sanitation facilities; it is unclear how drought conditions may impact this situation. There is no data available on current WASH needs in the affected area.

**Protection:** In previous droughts, a deterioration of the socio-economic situation and loss of livelihoods led to an increase of child labour (DW 12/06/2019). It is also possible that people will be forced to look for water sources further away from their houses, which exposes particularly women and children to higher risks of being assaulted when walking alone to look for water.

## Vulnerable groups affected

The impact of an abnormal and prolonged dry-spells is likely to be more pronounced in **female headed households** who often face greater challenges to access agricultural markets given the persistence of a gender gap in rural areas (WFP May 2019).

A loss of crops will have a devastating impact on **subsistence farmers**. Cyclical prolonged dry periods have resulted in a lack of food stocks. Unable to meet their own food demands, these households are highly likely to be lacking assets to access markets to meet their food needs and access other basic services (EWEA FAO 07/2019). The sale of productive assets including farming tools and livestock means that the impact of the current dry period is going to be felt long-term. Increasing food prices as demand increases will exacerbate the situation (DW 12/06/2019).

**Ground/ surface water shortages:** Women and children are particularly affected by the impact of drought, especially regarding water shortages as they carry the burden of fetching water for domestic use, thus being exposed to higher risk of robbery, rape and other assaults. The poor population ends up being more affected by drought, particularly in relation to water availability, ending up drinking contaminated water due to lack of resources. People with disabilities face a higher impact due to challenges in collecting water. In the context of a drought and an increased scarcity of water, elderly people and children are also more vulnerable, as they can be impacted more quickly by lack of hydration, malnutrition, or heightened exposure to infectious diseases because of drought conditions.

## Humanitarian and operational constraints

No significant access constraints are reported. However, insecurity might impact humanitarian operations, although to a much lesser extent than in neighbouring

countries. There are some local criminal gangs (pandillas) and at least one transnational crime organisation active in the country (InSight Crime 15/06/2018).

Since the beginning of the socio-political crisis in April 2018, the security situation has worsened, with repressive government strategies and violence at the hands of parapolice members. Since the protests began, 325 people have been killed (the majority by government forces), and over 2,000 injured (OHCHR 22/11/2018; IACHR 18/10/2018). Although there are no indications how the socio-political crisis has impacted humanitarian operations in northern Nicaragua, operations by organisations associated with the catholic church are more likely to be disrupted (KI, 23/07/2019).

## Potential aggravating factors

### El Niño and climate change

El Niño is the warm phase of the El Niño Southern Oscillation (ENSO) and occurs when sea surface temperatures in the tropical Pacific Ocean rises to above-normal levels for an extended period of time, which as a result can lead to intense storms in some places and droughts in others (NIWA 27/02/2007). El Niño causes variations in rainfall patterns. Prolonged dry periods during the agricultural season can lead to large losses of crops. Heavy rainfall following extremely dry periods (associated with La Niña) conversely elevates the flood and landslide risk and can wash away seeds. Nicaragua is vulnerable to recurrent natural disasters, ranking sixth on the Long Term Climate Risk Index (Germanwatch, Climate Risk Index 2019).

### Natural hazards and disasters

The Central American Dry Corridor is extremely susceptible to climate change events due to its long dry season and risk of experiencing droughts even during the rainy season (FAO 01/06/2017). In addition to soil degradation, deforestation that reduced forest areas from 41.5% in 2000 to 30.7% in 2010 that has rendered the soil impenetrable to rain. Climate change in Nicaragua is also bringing more sudden and intense rainfalls that in combination with the soil conditions increasingly frequently leads to flooding that destroys livelihoods, drives food insecurity and displacement (INETER 2018).

Hurricanes, flooding and landslides are recurrent in Nicaragua and have a devastating socio-economic impact, regularly leading to the loss of human life (GoN, WB, GFDRR 31/01/2019). Due to El Niño, the tropical cyclone season in Central America is expected to be more active than normal between June and November 2019 (CRRH-SICA 24-25/04/2019). The tropical cyclone season is anticipated to be more active than usual over the eastern

Pacific and less intense than usual over the North Atlantic basin; between 9 to 13 tropical cyclones, including 3 to 6 hurricanes, are expected between June and November (FEWS NET 06/2019).

### Previous droughts

Nicaragua is regularly and increasingly experiencing droughts. A delay in rainfall led to the loss of up to 70% of first harvest crops in Central American countries in 2018, affecting 2.2 million people across the region (FAO/WFP 25/04/2019; EWEA FAO 07/2019). Dried up soils increase the risk for floods, that have become more frequent in the Dry Corridor as well (FAO 01/06/2017). Excessive rainfall in the 2018 Postrera agricultural period (September to December) destroyed up to 50% of crops (FAO/WFP 25/04/2019).

In October 2018, 24,000 people were affected by flooding in the departments of Managua, Granada, Rivas, Carazo, Masaya, Chinandega, León, Madriz, Matagalpa, Jinotega, Estelí, Boaco, and Nueva Segovia (OCHA 22/10/2018).

Besides soils erosion, these weather patterns decrease coping capacity of the affected population and increase poverty and food insecurity. Agricultural losses are compounded by the re-emergence of some crop pests, such as the “gorgojo” (Southern Pine Beetle) (El Nuevo Diario 16/03/2019; INETER as of 15/07/2019).

## Contextual information

### Political stability and socio-economic situation

The current political crisis began on 16 April 2018, when the Nicaraguan Institute of Social Security (INSS – Instituto Nicaragüense de Seguridad Social) approved reforms to the social security system, confirmed on 17 April by President Daniel Ortega that prompted a period of large-scale civil unrest characterised by protests, demonstrations, and strikes. One of the contributing factors for the social security reform was the drying up of Venezuelan financing through the Bolivarian Alliance (ALBA), due to the crisis in Venezuela (Plaza Publica 16/08/2016; Plaza Publica 24/04/2018). The reforms, among others, included a doubling of the pension fund contribution period from 750 weeks to 1,500 weeks, cancellation of retirement benefits for thousands of senior citizens, and reduced spending on medicines for retirees. The crisis has led some 62,000 people to flee the country, the majority (55,500) to Costa Rica (UNHCR 16/04/2019).

The political crisis has led to economic turmoil, with Nicaragua formally falling into recession in October 2018 for the first time since the global financial crisis of 2009. Unemployment has spiked, with an estimated 417,000 people losing their jobs between

April and November 2018 (ECHO 07/11/2018). In 2019, the economy is expected to decline by 5.6%, likely resulting in more job losses and a deterioration of the socio-economic situation of the population (IFRC 28/02/2019). The Nicaraguan Foundation for Economic and Social Development (FUNIDES) estimates that the unemployment rate will increase from 5.5% in 2018 to up to 8.5% in 2019 (FUNIDES 17/07/2019). 1.2 million Nicaraguans are estimated to be at risk of falling into poverty (100% Noticias 03/12/2018; FUNIDES 11/11/2018).

As livelihoods deteriorate, the already fragile agricultural sector and rural communities (in 2014, 50% of the rural population was living in poverty) will likely be particularly impacted in the long term (IFAD accessed 29/11/2018). The combined effects of drought, political crisis, and economic recession are likely to have a devastating long-term effect on rural communities' livelihoods, especially considering the pre-existing fragility of the sector, lack of infrastructure, skilled workforce, basic services, and transport facilities (FAO 20/11/2018).

## Negative coping strategies

In the Central American Dry Corridor, (82%) subsistence farmers often resort to negative coping strategies during droughts such as selling farming tools and livestock in order to afford food items (FAO/WFP 25/04/2019). During the lean season one of the coping strategies applied is the temporary migration to neighbouring countries to send remittances home. During past drought periods displacement to Costa Rica and Panama was observed. The location near the Honduran border suggests that rural population might cross the border to seek employment opportunities in Honduras. The departments of Chinangena, Leon, Esteli, Matagalpa and Nueva Segovia in the north of Nicaragua were among those departments that received the highest remittances in the first quarter of 2019 after the capital, Managua (FEWS NET 06/2019). Given the stagnant socio-political crisis since April 2018 and deterioration of the socio-economic situation, vulnerable households are likely to face more difficulties in finding livelihood opportunities in displacement sites.

## Tax Reform

In February 2019, the income tax for medium sized companies with higher income has increased from 1% to 2%, which reportedly led to an increase of production costs (Central America Data 09/07/2019). The reform has been felt in the agricultural sector as some agricultural activities were excluded from a tax exemption (Value Added Tax). Increasing production costs led to a decrease in productivity, an increase in unemployment, and food insecurity (Central America Data 04/07/2019).

## Key characteristics

- **Demographic profile:** Total population: 6,071,045 (Nueva Segovia: 243,014; Jinotega: 417,372; Madriz: 158,020; Esteli: 220,703; Chinandega: 423,062; Leon: 404,471; Matagalpa: 542,419). **Sex ratio:** 97.3/100 (m/f).
- **Urban vs rural:** In 2018, 58.5% of the total population lived in urban areas. The rural population has only limited access to basic services.
- **Population density** per km<sup>2</sup> in 2018: 52.2
- **Agriculture** makes up 17% of the GDP and is the main source of livelihood for 90% of the population.
- **Chronic malnutrition:** 17% of children between 6-59 months.
- 67.8% of the rural population and 97.6% of the urban population use **improved drinking water** sources (2011).
- 37% of the rural population and 63.2% of the urban population have access to **improved sanitation facilities** (2011).
- **Child labour (2002-2012):** 14.5% (17.6% for males, 11.2% for females).
- Total adult literacy rate (2008-2012): 78%

Sources: INIDE 2012 ; UN data accessed 23/07/2019 ; WFP May 2019; FAO 01/06/2017: UNICEF accessed 23/07/2019

## Response capacity

### Local and national response capacity

The national government has not declared a drought and no special response mechanisms have been triggered. The Ministry for Environment and Natural Resources (MARENA), in collaboration with other institutions including INETER and NOAA) is monitoring several climate change indicators that influence humanitarian needs of the affected population.

### International response capacity

Several international organisations and NGOs have operational presence in the country. WFP and FAO are the biggest international organisations responding to climate-induced food insecurity in the Dry Corridor in Central America (FAO 25/04/2019). Within Nicaragua, WFP seems to focus on providing school meals. Other organisations (IOs, NGOs) that

work on related topics in Nicaragua are implementing resilience building activities and disaster risk reduction measures.

## Information gaps and needs

Information on humanitarian conditions and needs, especially regarding food security and WASH, is extremely limited in Nicaragua, especially on a department or municipality level. Recent assessment data by national or international humanitarian organisations is not publicly available.

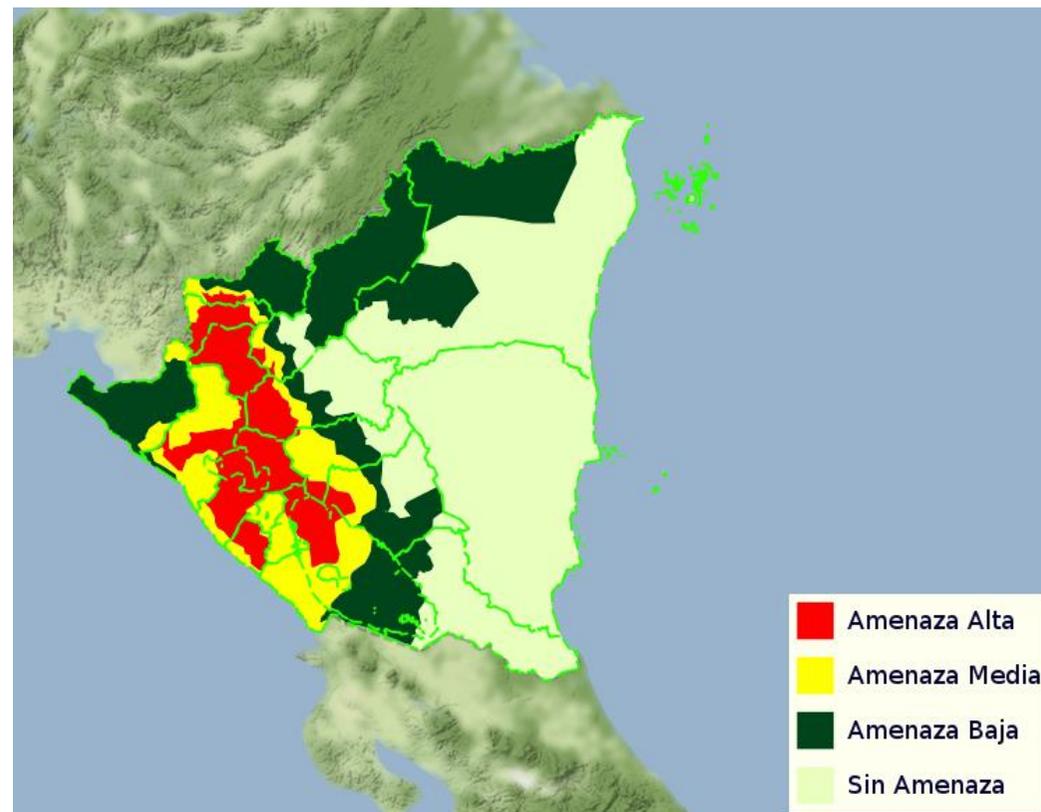
Lack of information regarding internal displacement.

## Lessons learned

- In the long-run, increase the cultivation of less water-dependent crops such as sorghum and tubers or short-cycle crops (FAO/WFP 25/04/2019).
- As in other countries in the Central American Dry Corridor, agreements should be put in place to allow temporary regulated migration for the people most affected by cyclical droughts (WFP-FAO 23/08/2018).

## Map: Areas exposed to drought risks

(High, medium, low and no threat)



Source: INETER accessed 22/07/2019