



THE ZIMBABWE CLIMATE CHANGE CONTEXT

Climate change presents the biggest threat facing mankind today. Zimbabwe is susceptible to an array of changes in temperature and precipitation with extreme events such as droughts, heatwaves, heavy rains accompanied by flash floods, strong winds and hailstorms becoming common. As such Zimbabwe will become both hotter and drier under climate change.

More hot and fewer cold days!

Zimbabwe is experiencing more hot and fewer cold days than before as a result of climate change and variability. The period from 1980 to date has been the warmest since Zimbabwe started recording its temperature (Figure 1).

The last 30 years have shown a trend towards reduced rainfall or heavy rainfall and drought occurring back to back in the same season. There has been an overall decline of nearly 5 per cent in rainfall across

Zimbabwe during the century (Government of Zimbabwe, 2015).

From Figure 2 the recent 2015/16 drought almost matched the 1991/92 drought by receiving an average seasonal rainfall around 400 mm. This had impacts on food security and nutrition; provision of water; sanitation and hygiene; and others. About 4.2 million Zimbabweans were deemed food insecure thus affecting human development.

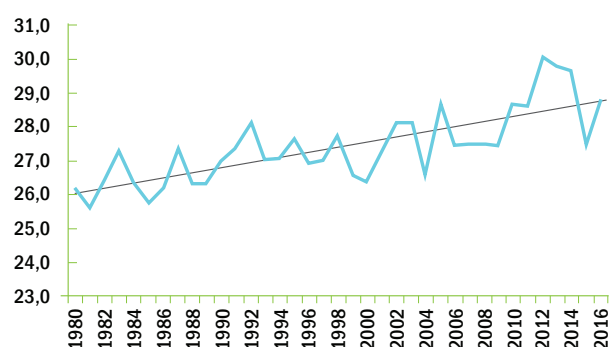


Figure 1 Zimbabwe's mean annual maximum temperature °C (1980 to 2016) - Source: Meteorological Services Department

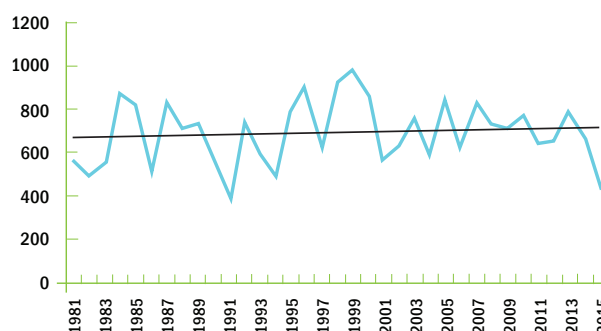


Figure 2 Zimbabwe average seasonal rainfall (mm) (1981-2015) - Source: Meteorological Services Department

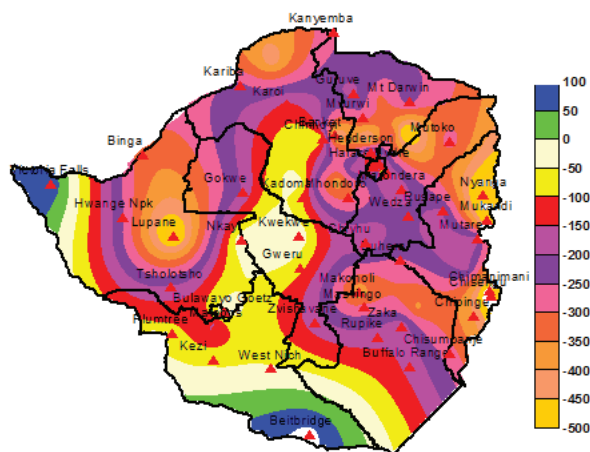


Figure 3 Spatial rainfall variations for season 2015/2016 relative to WMO climate mean (1981-2010) - Source: Meteorological Services Department

Erratic rainfall distribution

Rainfall distribution is erratic both in space and time across all the provinces (Figure 3). Such information is important as it can be used to determine for example crops to grow and livelihoods to undertake in the different regions of the country.

The timing (Figure 4) and amount of rainfall received in Zimbabwe are becoming increasingly uncertain and affects the farming calendar.

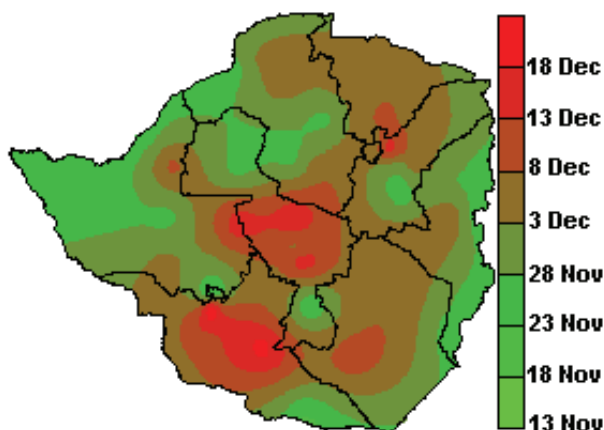


Figure 4 Onset of the 2012/2013 rainy season in Zimbabwe- Source: Government of Zimbabwe (2013)

More frequent droughts...

Drought is one of the natural disasters that frequently occurs in Zimbabwe, and given Zimbabwe's heavy reliance on rain-fed agriculture and livestock, it has serious implications on food security and livelihoods and other aspects of human development and sustainable development. Drought also has impacts on water availability for domestic and industrial use and power generation affecting cities and non-agriculture sectors (UNDP, 2016b). Results of the hazard mapping process show that drought is a recurrent feature of climate change that occurs virtually in all climate zones of Zimbabwe, from wet to very dry (Figure 5).

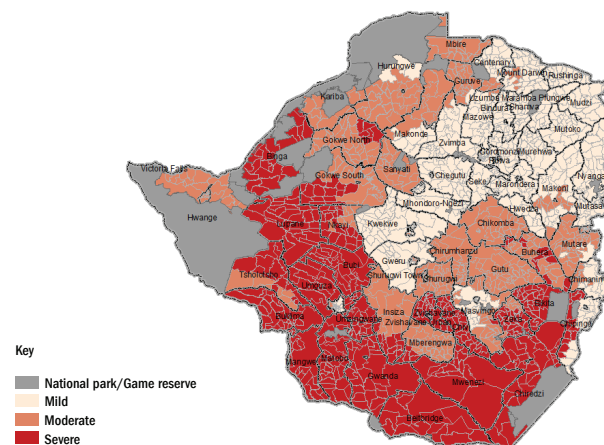


Figure 5 A map showing drought proneness in Zimbabwe - Source: UNDP (2016b)

Figure 6 shows the mid-season dry spell that occurred starting with the third week of January in 2013.

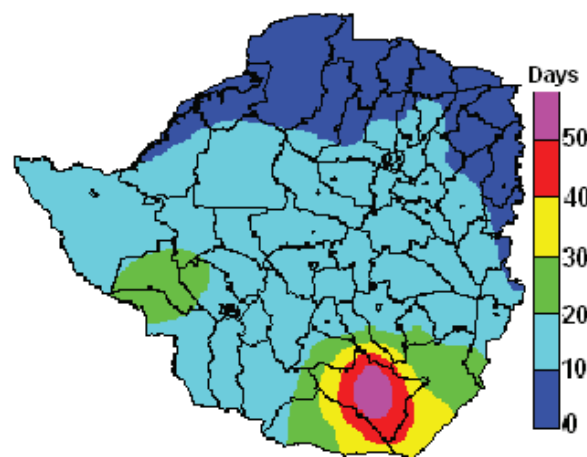


Figure 6 Length of mid-season dry spell beginning of 3rd week January 2013 - Source: Government of Zimbabwe (2013)

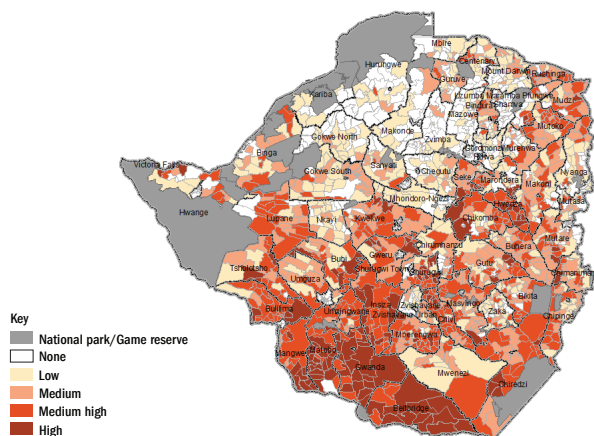


Figure 7 Map showing the mid-season dry spells in Zimbabwe in 2015 - Source: UNDP (2016b)

The frequency and length of dry spells during the rainy season have increased while the frequency of rain days has been reducing. The Ministry of Agriculture Mechanization and Irrigation Development with technical support from UNDP mapped the mid-season dry spells in Zimbabwe shown in Figure 7. Mid-season dry spells affect crops especially maize, the main staple cereal in Zimbabwe and in some seasons such as 2015/16 most crops in many regions of the country were a write off.

...and violent storms.

Another shock that occurs often is floods usually as a result of cyclones. Recent meteorological records indicate an increase in the frequency of violent storms sometimes with hail stones and strong winds that damage infrastructure, property, crops and



Photo 1 Floods after a heavy storm in Zvishavane - Source: E Moyo

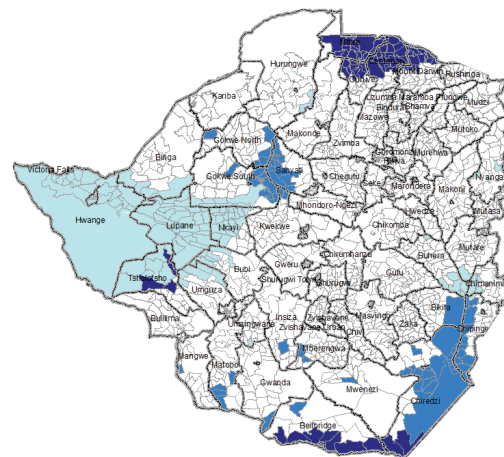


Figure 7 Map showing the mid-season dry spells in Zimbabwe in 2015 - Source: UNDP (2016b)

cause loss of human and livestock lives. Examples are the devastating floods occurring almost everywhere including traditionally 'storm-free' zones (Photo 1).

UNDP (2016b) mapped flood prone areas of Zimbabwe based on the recorded frequency of floods over a ten year period (Figure 8). Floods tend to occur in the northern and southern low lying areas of Zimbabwe, usually in the paths of cyclones and near confluences as well as upstream (as back-lash) and down- stream of major dams.

Winters are becoming severe and prolonged in some parts of the country, for example until September, affecting market gardening and small livestock. Tropical storms and cyclones intensities are increasing and predictability is more challenging. Heat waves are more frequent with Buffalo range recording 45°C in the recent past. Climate models predict that Zimbabwe's climate will be warmer than the 1961-1990 baseline with warming rates of 0.5-20 0C by 2030 (USAID, 2015). These projections point to a drying trend that will increase in intensity with time.

Extreme risk of Climate Change Vulnerability!!

Zimbabwe was ranked 9 among 16 countries with the "extreme risk" rating as per the Climate Change Vulnerability Index (CCVI), which assesses national vulnerabilities across three core areas that include: exposure to climate-related natural

disasters and sea-level rise; human sensitivity, in terms of population patterns, development, natural resources, agricultural dependency and conflicts; and thirdly, future vulnerability (<https://maplecroft.com/about/news/ccvi.html>).

The foregoing demonstrates that climate is changing in Zimbabwe and there is need for the country to build resilience in all its sectors.

The Government of Zimbabwe, led by the Ministry of Agriculture, Mechanization and Irrigation Development with the technical and financial support from the United Nations Development Programme, European Union and UK's Department for International Development have embarked on a resilience building programme to ensure that recurrent shocks and hazards do not undermine the progress being made to improve the overall well-being of Zimbabweans (UNDP, 2016b).