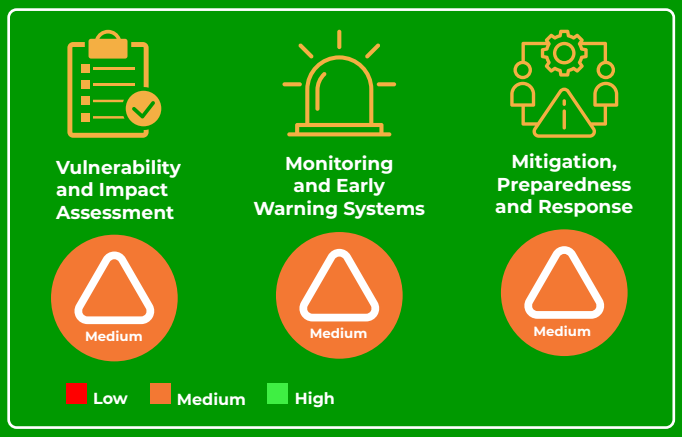
COUNTRY OVERVIEW

Zimbabwe is one of the world's most drought-prone countries which experiences frequent and severe droughts. Severe drought episodes were observed in 1991-1992, 1994-1995, 2002-2003, 2015-2016 and 2018-2019. Drought vulnerability and exposure vary substantially within the country with the south-western provinces of Matabeleland North and South showing high vulnerability and exposure levels. Of late, droughts have been crippling the nation and have contributed to the already low life-expectancy levels and high levels of emigration. The country also faces numerous development challenges that exacerbate its vulnerability to drought, including high levels of food insecurity, competition over scarce resources and ongoing political instability. Chronic food insecurity affects 10% of the population, even in years with sufficient rains. The poor rainfall season in 2019-2020, with the late start of rains in most districts of Zimbabwe, resulted in a delayed or no green harvest, and reduced water availability for livestock (leading to high livestock mortality) and households. It also forced many households to become more reliant on markets to access staple food. High prices of food items and other basic commodities mean that for many rural households normal purchases are no longer possible, and reliance on external assistance and social networks for food has become the norm. This has also led to fewer casual labour opportunities and an increase in labour migration to South Africa and other countries. The country is also prone to mid-season droughts, even in a rainy season (non-drought years). This is one of the most critical challenges for smallholder farmers who practise rain-fed agriculture, and are greatly impacted by mid-season droughts.



The Integrated Drought Risk Management Framework highlights a three-pillar approach centered around interconnected, multi-disciplinary, multi-institutional activities. These are 1) Vulnerability and impact assessment; 2) Monitoring and early warning systems (EWS); and 3) Mitigation, preparedness and response. This country Drought Resilience Profile contains drought information based on these three pillars.

This profile provides an overview of Zimbabwe's drought resilience capacity in the three pillars. Zimbabwe's vulnerability and impact assessment capacity is categorized as medium. In spite of the Zimbabwe Vulnerability Assessment (ZIMVAC) report published annually, and the role of the public agricultural innovation system (AIS) in Zimbabwe, together with the Department of Research and Specialist Services (DR-SS) in conducting research to ensure that farmers and urban populations are resilient to drought, there is a lack of comprehensive drought risk assessments at the national level that consider spatially- and temporally-consistent hazard information complemented by drought exposure and vulnerability factors.

In terms of its capacity in drought monitoring and EWS, Zimbabwe is classified as medium, as currently the national structures set up to facilitate drought monitoring and EWS are in place but lack technical capacity and financial resources to fully operationalize it, relying heavily on external structures such as the SADC Regional Early Warning Unit and the USAID-funded Famine Early Warning System (FEWSNET).

Additionally, while drought monitoring has received increased attention in Zimbabwe, the drought hazard in the country is quantified largely with precipitation records, weather stations are not homogeneously distributed in Zimbabwe, and they do not provide spatially- and temporally-consistent records that make multi-decadal analyses possible.

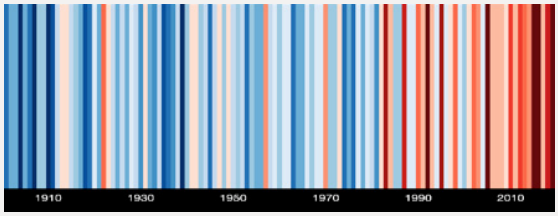
Finally, Zimbabwe has relatively well-established drought response mechanisms, but may wish to consider strengthening its coordination mechanisms for better information flow, and scaling critically important initiatives such as the Harmonized Cash Transfer Program (HSCTP). Strengthening local capacity for drought preparedness and management, including contingency plans at local and national level, is also key. It is therefore categorized as medium.

This document provides a brief overview of drought risk issues. The key resources at the end of the document provide more in-depth country and sectoral analyses. The contents of this report do not necessarily reflect the views of the World Bank, CIWA, SADRI, NDMC or IWMI.

Historical climate

- The #ShowYourStripes 'warming stripe' graphic for Zimbabwe in Fig. 1, shows that the stripes turn from blue to red in more recent years, showing the rise in average temperature since 1901.
- Drought frequency may be increasing. There was one drought in the 1980s, two in the 1990s, two in the 2000s, and three in the 2010s (Table 1).
- The average annual temperature was 21.33°C for the period of 1901-2016. Average annual temperature has increased by 0.01°C per year from 1901 to 2016.
- The northern and southern parts of the country experience warm temperature compared to central areas, hence are more vulnerable to drought.
- There has been an increase in the frequency and length of dry spells during the rainy season.
- The mean annual precipitation was 669.94mm for the period of 1901 to 2016, but exhibited temporal variability from year to year.
- Eastern parts of the country tend to experience the highest amount of precipitation (above 1000 mm) and southern parts generally receive the least (below 400mm).

Fig 1. Temperature change in Zimbabwe, 1901-2019



Source: Berkley Earth/#ShowYourStripes

Future climate

- The mean annual temperature is expected to increase by 2.16°C in 2040-2059.
- By 2080-2099, the annual temperature is projected to increase by 1°C (RCP 2.6) and 5.1°C (RCP 8.5).
- More variable precipitation is expected, with some models projecting an increase in the long-term, and others projecting a decrease.
- Some models predict increased rainfall in the north and east; reduced rainfall in the south and west.
- Dry spells are expected to last up to 13 days longer than the average current duration between 2040 and 2059 (USAID, 2019).

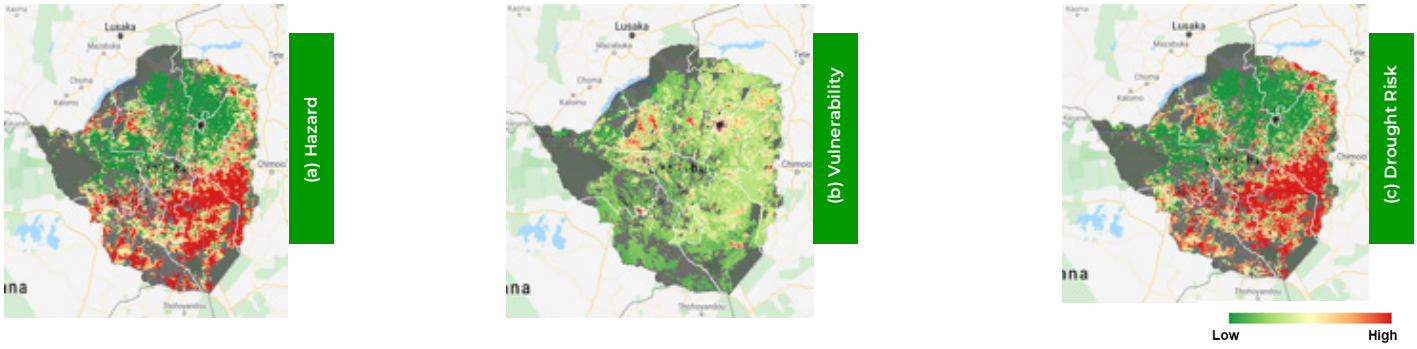
Table 1. Major droughts in Zimbabwe (Source: EM-DAT, 2020)

Year	Location	Affected Population
1981	Central, South, East and West	1.9 million
1990	No data*	110,000
1998	Southern (Matabeleland)	800,000
2001	Central, North, South and West	3 million
2007	Central and East	1.9 million
2010	Manicaland, Mashonaland Masvingo, Matabeleland, Midlands	254,000
2013	Manicaland, Masvingo, Matabeleland, Mashonaland Central, Midlands	3.7 million
2019	No data*	1 million

* No data provided from source

Vulnerability and Impact Assessment

Fig 2a-c. Drought hazard, vulnerability and risk maps for Zimbabwe



The above maps (Fig 2a-c) depict drought hazard areas (a), areas of vulnerability (b) and drought risk (c). Drought risk is defined by characterizing hazard and exposure to vulnerability and the lack of adaptive capacity, using multisource information from satellite-derived drought indices and socio-economic conditions. In terms of components, hazard is defined through meteorological and agricultural drought i.e. Integrated Drought Severity Index (IDSI); and exposure and vulnerability expressed through population density, human modification index, water risk and irrigated systems.

Agricultural production (agricultural practices i.e. irrigated area, food production as provided on HarvestChoice) was used to define levels of vulnerability which were finally combined with all three components to define levels of drought risk at the country level, referred to as the National Drought Risk Index (NDRI). The drought risk profile is therefore based on the probabilistic estimation of hazard and vulnerability to assess the drought risk in the exposed areas.

Among the drought prone areas in Zimbabwe, the NDRI indicates that the south-western provinces of Matabeleland North and South show high levels of drought risk and vulnerability (maps generated by IWMI). Zimbabwe has a high probability of experiencing severe drought, and a great exposure to the risk of drought, especially in the south-western provinces. However, the impacts of drought are not the same across all sectors or socio-economic groups. That is, droughts frequently occur with changing patterns across Zimbabwe.

Water resources

Table 2. Surface water resources of Zimbabwe's main catchments

Catchment	MAR	Potential Storage	Potential Yield 10%	Present Commitment		Use
	x10⁶MI	x10⁶MI	x10⁶MI	Storage (x10⁶MI)	10% Yield (MI)	%
Gwayi	1.8	3.7	0.9	0.2	98,144	11.2
Manyame	3.3	6.6	2.0	2.6	942,849	46.6
Mazowe	4.6	9.2	2.8	0.3	488,384	17.6
Mzingwane	1.8	3.4	1.2	1.3	330,329	27.1
Runde	2.1	4.3	1.2	2.5	481,259	41.0
Sanyati	3.9	7.8	2.1	0.6	430,179	20.5
Save	6.1	12.2	4.4	1.2	804,368	18.3
Total	**23.7**	**47.2**	**14.5**	**8.7**	**3,575,476**	**24.6**

Source: World Bank, **2012**

Zimbabwe is a semi-arid country heavily reliant on regular rains, with low mean annual rainfall and many rivers in the drier parts of the country that are not perennial. Due to growing water scarcity in Zimbabwe, extensive investments have been made in small, medium and large dam development, though current utilization is only about 22 % of mean annual run-off (Davis & Hirji, 2014). Zimbabwe's renewable water resources are estimated to be 12.26km³ /year, of which 11.26km³ are surface water resources and 6km3 are groundwater resources.

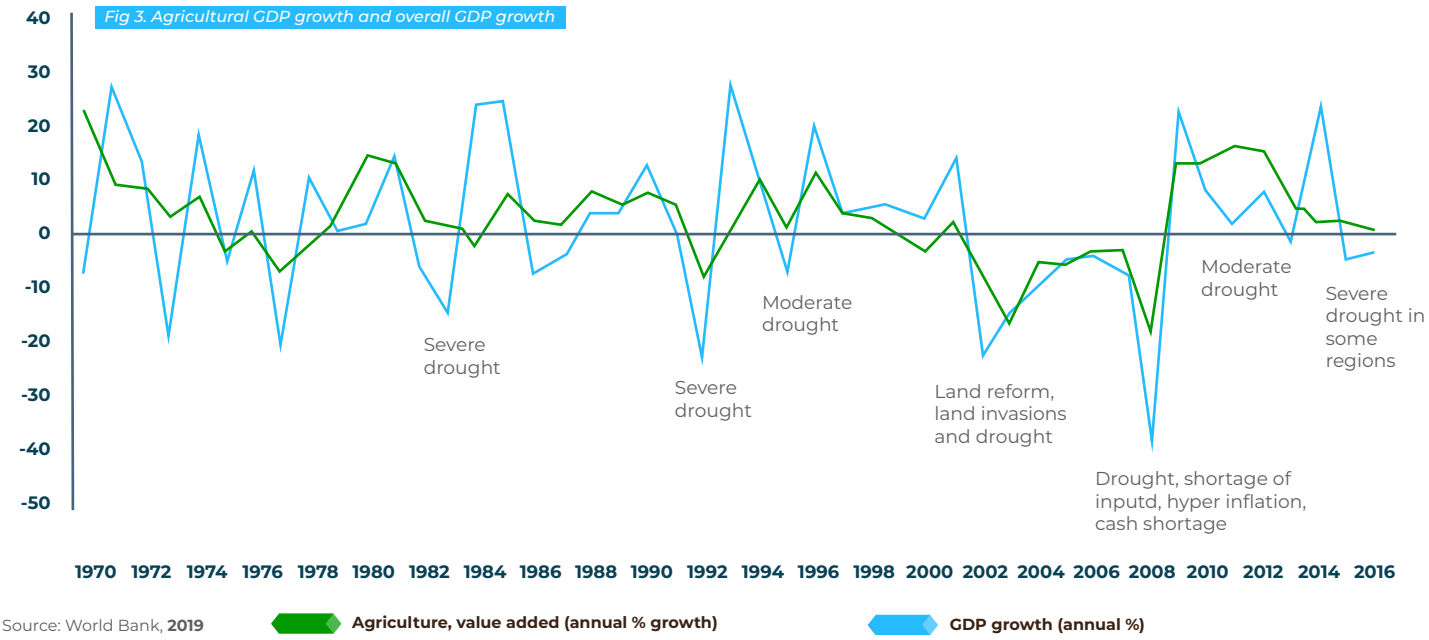
While the bulk of urban areas relies heavily on surface water to meet its needs (roughly 90%), groundwater is the main source of water for more than 70% of Zimbabwe's rural population. It is the principal source of water for both the communal and commercial sectors in rural areas, and acts as a principal source of potable water and a major source of water for irrigation, mining and tourism (Davis & Hirji, 2014). In recent years, urban demand for groundwater has also increased due to the increasing unreliability of water distribution systems. Projected higher temperatures and declines in mean annual precipitation reinforce a drying climatic outlook with reduced groundwater recharge (USAID, 2019). Reduced river and stream flows would also curtail electricity production from hydropower, which in 2014 contributed 51.4% of national power production.

Droughts drag macro-level agricultural growth

Fig. 3 shows the correlation between agricultural GDP and overall GDP growth. From the graph, it is evident that drought translates into volatility in agricultural GDP, which in turn affects the entire economy (World Bank, 2019). More specifically, it shows the impact of severe and moderate drought in slowing agricultural growth and growth in the economy.

While typically more resilient to climate variability and change than crops, livestock are also susceptible to heat stress, and their viability is affected by the productivity and availability of pasture, feed production, water availability and pest and disease dynamics. In Zimbabwe, livestock are a key source of food, income, capital, and draught animal power; ownership is important for the resilience of smallholder farmers in rural, semiarid regions.

Vulnerability and Impact Assessment



During the 2015–2016 drought, 27% of reported cattle deaths were drought-related due to poor grazing and lack of water (USAID, 2019). Decreased precipitation combined with heat stress also have negative implications for livestock health, creating conditions rife for livestock pest and disease outbreaks.

Vulnerability and impact assessment capacity

Zimbabwe's drought vulnerability and impacts are tracked and reported on every year through the Zimbabwe Vulnerability Assessment (ZIMVAC) report, which outlines the vulnerability areas most affected by drought. Droughts have been by far the most significant threat to Zimbabwe compared to other natural disasters with huge economic, environmental and social costs. In this regard, ZIMVAC conducts the Zimbabwe Rural Livelihoods Assessment; while the Crop and Livestock Assessment is carried out and funded by the Ministry of Lands, Agriculture, Water, Fisheries and Rural Resettlement (MLAFWRR).

Zimbabwe has policies and strategies in place that support disaster risk management and financing. The National Climate Policy and National Climate Change Response Strategy (NCCRS) provide an opportunity to integrate climate change and climate risk management policy. The NCCRS provides a comprehensive and strategic approach to disaster risk management through the pillar that focuses on Adaptation and Disaster Risk Management (World Bank, 2019). Zimbabwe also developed the National Policy and Program for Drought Mitigation, a policy that recognizes the effects of drought on rural communities and encourages strategies that aid communities in adapting to climate change.

In terms of education and research support on drought impacts, the public agricultural innovation system (AIS) in Zimbabwe together with the Department of Research and Specialist Services (DR-SS) is responsible for conducting research to ensure that farmers and urban populations are resilient to drought. DR-SS works closely with the Agricultural Research Council, whose role it is to prioritize and coordinate agricultural research countrywide. The Agricultural Technical and Extension Services (AGRITEX), have a responsibility of providing extension services; agricultural education for technical training.

Despite some progress, there is a lack of comprehensive drought risk assessments at the national level that consider spatially- and temporally-consistent hazard information complemented by drought exposure and vulnerability factors. To a great extent, the management of drought vulnerability in Zimbabwe depends on the adaptive capacity of smallholders, yet they are often the most vulnerable, and lack the resource to reduce such risks on their own. It would be beneficial for Zimbabwe to continue its efforts in supporting individuals affected by drought in strengthening their resilience and also by providing timely disaster response support after high-impact events. The capacity of the public sector to provide the necessary support appears weak (World Bank, 2019).

Monitoring and Early Warning Systems

Table 3 represents a summarized traffic light checklist to illustrate the state of monitoring and EWS capacity in Zimbabwe. It summarizes key aspects needed for a strong monitoring and EWS framework, most notably, whether there is an official definition of drought used in the country; whether drought indicators are used, and if so, which ones; whether there is a drought early warning system (DEWS) in place; and if so how functional it is; and whether the country makes use of seasonal forecasting.

Drought monitoring in Zimbabwe is carried out by the Ministry of Environment, Climate, Tourism and Hospitality Industry (MECTH) through the Meteorological Services Department (MSD) and the MLAFWRR, through Agriculture Research and Extension Services (AGRITEX). The two organizations are mainly responsible for systematic observation and monitoring of hydro-meteorological parameters, provision and publication of information, forecasts, products and services related to weather and climate (Nangombe, 2015). The MSD uses the globally accepted Standardized Precipitation Index which qualifies the severity of droughts in drought monitoring, whereas AGRITEX mainly use the Water Requirement Satisfaction Index (WRSI) in drought monitoring.

Further, the two institutions have to supply data related to drought-relevant parameters, indices and indicators.

Monitoring and early warning systems capacity

Table 3. Summarized checklist of monitoring and EWS capacity

Official definition of drought	Yes
Drought indicators used	Yes
Existence of a DEWS	Limited
Capacity to tailor EWS messages to end-user needs	Limited
Effective communication of early warnings with built-in feedback mechanisms	No
Use of most salient communication channels to reach women/youth/disenfranchised communities	Limited
Use of community relays, extensions services, local media to communicate EWS and reach at risk communities promptly	Limited
Seasonal forecasting	Limited

Yes No Limited

AGRITEX also does drought monitoring by concentrating more on the water requirement for crops and livestock through the use of temperature, soil quality, evapotranspiration and rainfall. These two institutions provide updates to the government on the country's drought status and are both members of Zimbabwe's National Early Warning Unit (NEWU) which facilitates coordination and dissemination of information (Nangombe, 2015).

The potential of remote-sensing techniques for drought monitoring has not been fully explored in Zimbabwe, but has enormous potential to provide spatially- and temporally-consistent drought and early-warning information (Frischen et al., 2020).Until recently, there was no known DEWS at the national level. However the need for a national DEWS has received increased attention in Zimbabwe. Commonly, the drought hazard in the country is quantified with precipitation records; however, weather stations are not homogeneously distributed in Zimbabwe, nor do they provide spatially- and temporally-consistent records that make multi-decadal analyses possible (Frischen et al., 2020). A similar trend observed in several other SADC countries has seen the gradual decline of hydro-met capacity due to insufficient meteorological and hydrological observing stations to adequately and accurately monitor the current state of the climate and hydrology; and a deterioration of existing infrastructure over time due to inadequate financial resources for either appropriate levels of maintenance or for replacement and expansion of the capital stock of equipment. A pilot Flood and Drought Monitor (ZFDM) for the country was launched for the management of potential flood and drought risks by UNESCO G-WADI and Princeton Climate Analytics, with a 0.05° (~5 km) resolution. The system is based on the continental African Flood and Drought Monitor (AFDM), which has been updated to a higher resolution near real-time system using a combination of existing datasets used in the operational AFDM and newly available datasets. The product is intended to provide advance warning of impending floods and droughts. In addition, local station data have been incorporated into the system and are available from the online interface. While developed, the system is yet to be rolled out to the entire country and the benefits of this platform are therefore, still to be realized.

In addition, the hydrological model provides daily, freely accessible historic data and forecast ensembles for several key hydrological variables, including soil moisture, evaporation, runoff, and streamflow. The meteorological forecasting derived by merging a wide range of station, satellite, and atmospheric model data to obtain the best possible predictions across all climate zones in Zimbabwe. The runoff estimates from HBV are routed downstream using a highly computationally efficient RAPID discharge routing scheme, which increases the resolution and robustness of the streamflow predictions.

The MSD is responsible to disseminate drought early warnings and forecasts to the public. However, the seasonal forecast is not generated by MSD but by climate experts in the Southern Africa regional forum called the Southern Africa Regional Climate Outlook Forum (Nangombe, 2015). There is a need for capacity strengthening within MSD to begin to provide these services.

In addition, granularity (spatial and temporal) of weather information is critically important as an input into key drought resilience and social safety net considerations. This means that the integration of drought risk into decision-making processes should be underpinned by improved hydro-met data collection and capacity to deliver relevant drought information services. There is currently limited capacity and resources to collect reliable weather data in the country. In addition, there is a need to fill spatial and temporal gaps in climate data that is needed for verifiable drought scenario modeling at sub-national /community levels. Key recommendation for Zimbabwe in its pursuit to improve its EWS and monitoring capacity would be to continue supporting investments for upgrading and providing critically needed new equipment, systems, and operator training for data collection and processing for improved hydro-meteorological and agro-meteorological forecasts, in order to ultimately enhance the availability and reliability of data for drought scenario modelling, risk analysis and warning systems, and knowledge sharing.

It is further recommended that data quality assurance be an institutional performance target of the key agencies involved in drought monitoring and management in both countries. For example, non-telemetered data need to be examined by office staff for consistency, and telemetered data need to be passed through a checking program to identify potential problems with data or sensors.

Finally, there is a need to move beyond sharing drought information and spreading awareness with target communities, to a focus on influencing changes in attitudes and promoting specific behavioral practices amongst targeted groups to adopt practical means of coping with drought.

Monitoring and Early Warning Systems

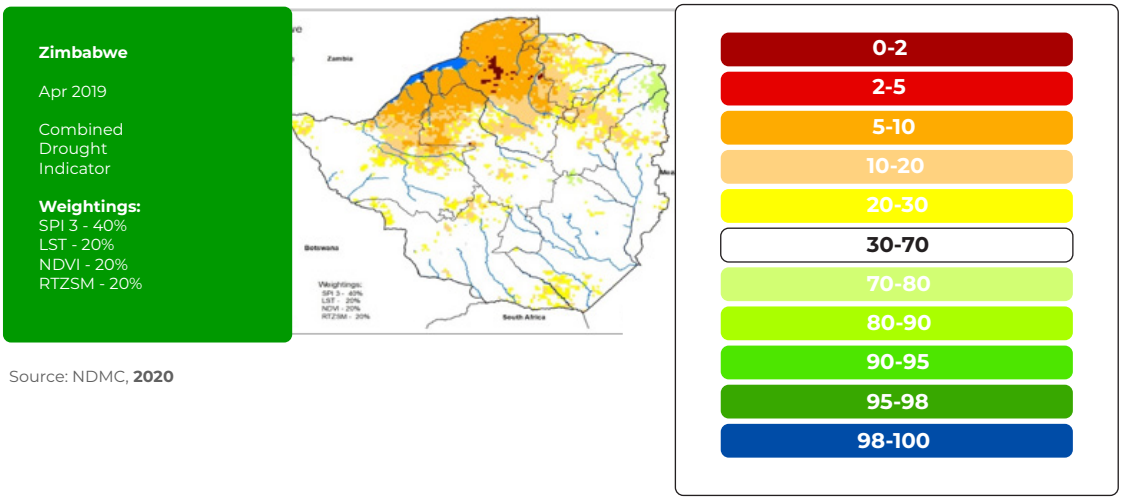
Combined Drought Indicator (CDI)

Similar to the ZFDM, but using a slightly different, combined drought indicator (CDI) approach, the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln, in partnership with the World Bank, has developed a Drought Monitor that represents a consolidation of indices and indicators into one comprehensive drought map.

The CDI map for Zimbabwe was created using a weighted combination of four indicators of drought: precipitation, vegetation stress, land-surface temperature and soil moisture. April 2019 was selected to depict the severity of the recent 2018/19 drought. April, being the start of the dry season when less rain is expected, provides an assessment of the drought's magnitude (duration and intensity), spatial extent, probability of occurrence, and impacts. The April 2019 CDI map shows much of the country moderately impacted by some degree of drought, with greater severity experienced in the south.

Without an effective drought monitoring and EWS to deliver timely information for early action, such as the CDI, effective impact assessment procedures, proactive risk management measures, preparedness plans aimed at increasing the coping capacity and effective emergency response programs directed at reducing the impacts of drought, the country will continue to respond to drought in a reactive, crisis management mode. In addition, it is important for the Government of Zimbabwe and local institutions to assess the benefits of multiple EWS and drought monitors, and scale the most appropriate and fit-for-use model for the country.

Fig 4. Combined Drought Indicator (CDI) for Zimbabwe, April 2019



Source: NDMC, **2020**

Mitigation, Preparedness and Response

Drought policy framework

Zimbabwe has relatively strong multi-sectoral institutional structures for prevention, mitigation, preparation and response to drought-induced disasters, however, there is a lack of technical capacity with most institutions, and they are heavily under-resourced. In addition, government-led coordination needs to be strengthened.

In terms of the policy framework, drought is embedded within the disaster risk management (DRM) policy framework. The institutional framework for DRM in Zimbabwe is guided by the Civil Protection Act (CPA) of 1989. It is also through this Act that the Civil Protection Organization (CPO) was established and it provides for the operation of civil protection services in times of disasters.

In addition, Zimbabwe has also put in place the emergency management system. The Department of Civil Protection (DCP) is responsible for coordinating all disaster management activities, working with the CPO. The CPO is a multi-sectoral government platform that constitutes line ministries/ departments, civil protection committees, state enterprises, private sector and NGOs whose regular activities are related to disaster risk reduction and community development. The role of this platform is to provide advice and coordination related to national disaster risk efforts as well as to make recommendations to the DCP on risk reduction (World Bank, 2019).

One of the challenges in Zimbabwe is that the 1989 CPA legislation and the structures it established remain focused on disaster response with limited recognition of opportunities for risk reduction through investment in preparedness and early warning. Currently, disaster response is divided among two coordination structures anchored in two different institutions:

- The National Civil Protection Committee (NCPC), mainly responsible for flood response and other rapid-onset disasters of natural or man-made origin. The NCPC comprises representatives from all line ministries, NGOs, and international organizations. The DCP, under the Ministry of Local Government, Public Works, and National Housing, plays a secretariat role to the NCPC.

- The National Food and Nutrition Council (NFNC), under the coordination of the Office of the President and Cabinet, oversees drought management and response. The NFNC works closely with the Meteorological Service Department, which provides early warning information, and the Ministry of Lands, Agriculture, Water, Fisheries and Rural Resettlement (MLAFWRR) which is the implementing arm of drought management and response activities.

The responsibility for the administration and implementation of the CPA lies with the Department of Civil Protection (DCP) which falls under the Ministry of Local Government Public Works and National Housing (MLGPWNH). The 1989 legislation has been reviewed and the updated drafts produced have been through several iterations to reflect international developments in DRM and innovations from the Hyogo and Sendai Frameworks. However, despite a number of consultation rounds, the 1989 legislation remains in force.

Table 4. List of timeline of policies/strategies related to drought

The Civil Protection Act (1989)
National Policy on Drought Management (NPDM)
National Policy and Programme on Drought Mitigation
The Irrigation Policy
The draft Disaster Risk Management Bill
National Climate Change Response Strategy
Zimbabwe Drought Risk Management Strategy and Action Plan (2017-2025)
Food Deficit Mitigation Strategy (2010)
Food and Nutrition Security Policy (2011)
National Water Policy (2012)
Second Science, Technology and Innovation Policy (2012)
The draft Comprehensive Agricultural Policy Framework (2012-2032)

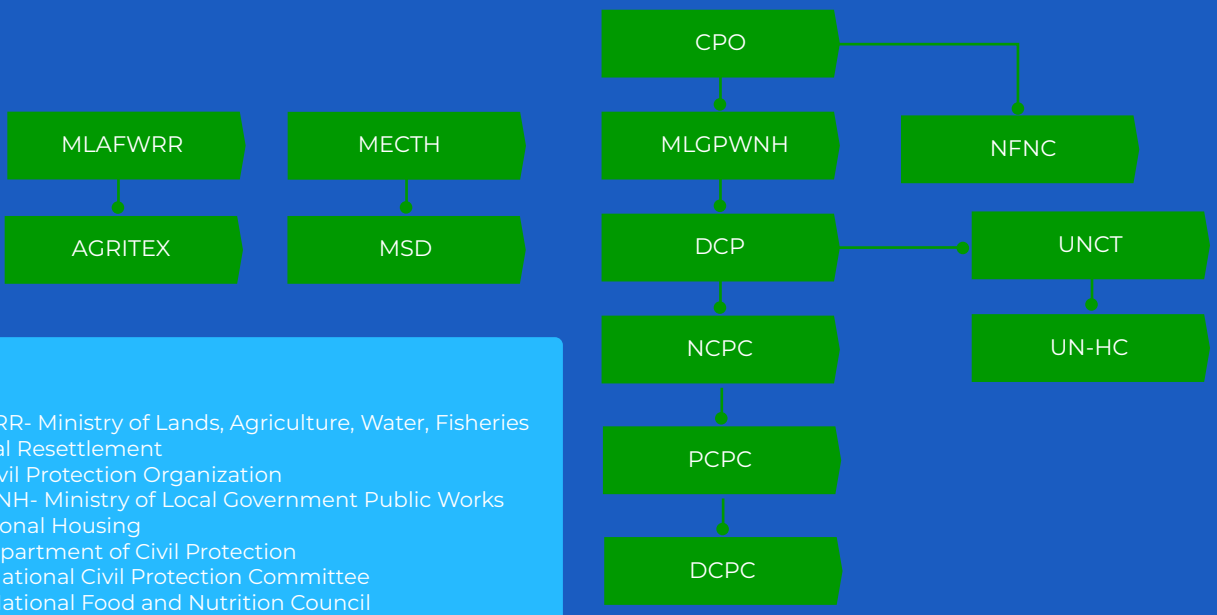
Institutions and coordination

Zimbabwe has a number of institutions which are well organized and which are coordinated at national and decentralized levels. As noted, the Government of Zimbabwe's DCP is mandated to coordinate the management of disasters and all relevant stakeholders through the NCPC. Permanent members of the NCPC are chosen from the Government Ministries/Departments, parastatals and NGOs while other members especially from the private sector are co-opted as needed. Provincial and District administrators are also given responsibility to coordinate any emergency-related activities in their different provinces and districts through the Provincial or District Civil Protection Committees, with the help of NGO partners in the districts. This multi-sectoral representation ensures better flow of information and interaction between local and national authorities, NGOs and the United Nations.

The resulting institutional system comprises the following structures:
- National Civil Protection Committee (NCPC)
- The Department of Civil Protection (DCP)
- The Food and Nutrition Council (NFNC)
- The Zimbabwe Vulnerability Committee
- Provincial Civil Protection Committee
- District Civil Protection Committee
- Emergency Services Sub-committee
- National Food and Water Sub-committee
- National Epidemics and Zoonotic Crisis Sub-committee
- National Resource Mobilization Sub-committee

The Government of Zimbabwe through the DCP and the United Nations-Humanitarian Coordinator (UN-HC) are responsible for coordinating the strategic response in collaboration with all humanitarian actors from the Government, UN and NGO community and the private sector where possible. The United Nations Country Team (UNCT) is the unit responsible to coordinate UN emergency preparedness and response to support government plans. The UNCT is responsible for effective and efficient implementation of Inter-Agency disaster risk management activities. The UNCT further allows for all UN entities with activities in Zimbabwe to work as a team in formulating common positions on strategic issues, ensuring coherence in action and advocacy.

Fig 5. Zimbabwe's drought institutional framework



Legend

MLAFWRR- Ministry of Lands, Agriculture, Water, Fisheries and Rural Resettlement
CPO- Civil Protection Organization
MLGPWNH- Ministry of Local Government Public Works and National Housing
DCP- Department of Civil Protection
NCPC- National Civil Protection Committee
NFNC- National Food and Nutrition Council
MECTH- Ministry of Environment, Climate, Tourism and Hospitality Industry
UNCT- United Nations Country Team
UN-HC- United Nations-Humanitarian Coordinator
AGRITEX- Agriculture Research and Extension Services
MSD- Meteorological Services Department
PCPC- Provincial Civil Protection Committee
DCPC- District Civil Protection Committee

Drought mitigation, preparedness and response capacity

At present, Zimbabwe has a number of drought mitigation programs that include the construction of irrigation schemes, establishment of dams for water storage and irrigation purposes, promotion of drought tolerant crop varieties particularly small grains, government agriculture input support schemes, conservation farming techniques promotion, and a strategic grain reserve, among others. However, its Drought Relief Fund (contingency fund) is not adequately funded to act as a proactive crisis modifier to mitigate against droughts, and thus cushion the extra number of vulnerable people in the event of a disaster.

Historically, response actions to previous droughts have also involved government-led cereal importation as well as international and humanitarian partners' donations following declarations of disasters. At present, the trigger for drought response action is more reactive than proactive which delays intervention actions. In most cases, assistance to the affected populations usually takes approximately eight months after the manifestation and realization of a drought disaster (GoZ, 2019).

The Government of Zimbabwe's Rural District Council (RDC), partnered with NGOs such as CARE Zimbabwe and the World Food Program to provide the Grain Marketing Board with storage facilities for the grain stocks during previous droughts. The importance of a grain reserve stock in case of moderate to severe drought is very important for drought response preparation. Furthermore, Government, in collaboration with other development partners, provide support through implementing projects that address drought conditions by providing food aid and water to affected communities. In the case of livestock, the Vet Field Services Department works in collaboration with the FAO in distributing supplementary feed for livestock to affected families. The MLAFWRR also plays a major role in emergency relief and drought response for livestock. Again, livestock that are ecologically viable and provide tillage, such as donkeys and goats, are usually promoted. In terms of water supply, Government also initiated a District Development Fund to erect boreholes in drought prone rural communities. These boreholes help both people and livestock in providing water during times of drought.

In terms of energy supply, Government also provides energy sources such as jelly oil and paraffin to affected families. People are also encouraged to use organic manure as fertilizer rather than relying on inorganic fertilizers which have negative effects on the quality of the soil.

In addition, the Zimbabwe Drought Contingency Plan, developed annually, highlights the details on drought risk, scenarios, planning assumptions and consequences for the identified hazards. The plan also summarizes the coordination and management systems by outlining institutional roles and responsibilities during assessment and coordination. The plan further identifies suitable activities undertaken by different groups of stakeholders in preparedness, emergency response and early recovery as well as information management assessment tools. Although the Drought Contingency Plan is multi-hazard, encompassing different disasters that affect the country, the disasters are prioritized into the most likely ones to affect the country in the next 12 months. Drought is one of the disasters that are prioritized on a yearly basis. Cascading the Drought Contingency Plan down to the sub-national level would be enormously beneficial in building appropriate community-level response strategies and adaptive capacity.

Mitigation, Preparedness and Response

In 2011, the Government, in collaboration with UNICEF, launched the Harmonized Cash Transfer Program (HSCTP). The program is coordinated by the Department of Social Services (DSS) and UNICEF. The program was implemented in all ten provinces of Zimbabwe covering one district per province with a total population of approximately 231,657 households, targeting labor constrained and ultra-poor households. Eligible households receive bi-monthly unconditional cash payments ranging between USD10-USD25 per month based on household size. The program covered 13 of the most drought prone districts in the country. The HSCTP can be scaled up both by increasing the cash amounts to existing beneficiaries and by adding potential beneficiaries on existing lists who narrowly missed the tight eligibility criteria for chronic poverty in earlier targeting exercises. In a nationwide drought emergency, the scale up of the HSCTP would be an important component of response but should not substitute the need for more conventional food/cash distribution emergency responses since it does not cover all districts.

In addition to Government's response, international assistance is sought in extreme cases. Humanitarian actors can immediately access funding for life-saving activities using pooled funds managed by OCHA such as Emergency Response Fund (ERF) or the Central Emergency Response Fund (CERF). The ERF is usually the first port of call for small grants not exceeding USD250,00 for projects implemented in six months or less. The CERF provides grants to UN agencies who are expected to implement through national institutions.

In summary, the Government of Zimbabwe have relatively well established drought response mechanisms, but may wish to consider the scaling up of the HSCTP, strengthening its coordination model for better information flow; and investing in the implementation of the newly developed national DEWS. This means that the government may need to improve and expand its hydro-meteorological observation networks; promote training in drought vulnerability and risk assessment at all levels; and enhance the cooperation and networking between various hydro-agrometeorological sectors, other stakeholders and end-users of this data. Strengthening the capacities for drought preparedness and management, including contingency plans at local and national level is also key.

Recent drought resilience efforts by the international community

Table 5. Selected projects focused on drought, or some aspect of it, in Zimbabwe.

World Bank

SPF - Support to Zimbabwe Recovery and Resilience
Budget (USD): 2M
Time Period: 2020 -2021

Zimbabwe National Water Project
Budget (USD): 20M
Time Period: 2016 -2020

FAO

Strengthening livelihoods and food security of drought-affected households
Budget (USD): 390K
Time Period: 2017-2018

UNDP; GEF

Strengthening Biodiversity and Ecosystems Management and Climate-Smart Landscapes in the Mid to Lower Zambezi Region of Zimbabwe
Budget (USD): 57.4M
Time Period: 2018-2024

Building Climate Resilient Rural Communities in Zimbabwe
Budget (USD): 58.4M
Time Period: 2012 - now

UNDP; FCDO

Resilience Building Fund
Budget (USD): 55.6M
Time Period: 2015-2022

USAID

Amalima
Budget (USD): 43M
Time Period: 2013-2020

Feed the Future Zimbabwe Livestock Development Program
Budget (USD): 11.9M
Time Period: 2015-2020

WFP

Food purchase: WFP purchased over 160,000 mt of food
Budget (USD): 60M
Time Period: 2018

JICA

Project for Zimbabwe Smallholder Horticulture Empowerment and Promotion (ZIM-SHEP)
Budget (USD): 2M
Time Period: 2019-2023

FCDO

Zimbabwe Livelihoods and Food Security Programme
Budget (USD): 96.3M
Time Period: 2013-2021

Zimbabwe Resilience Building Fund Programme (ZRBF)
Budget (USD): 56.3M
Time Period: 2015-2021

References and data sources

1. Chitongo, L. (2019). Rural livelihood resilience strategies in the face of harsh climatic conditions. The case of ward 11 Gwanda, South, Zimbabwe. Cogent Social Sciences, 5(1), 1617090.
2. Davis, R., & Hirji, R. F. (2014). Climate change and water resources planning, development, and management in Zimbabwe (No. 103629, pp. 1-6). The World Bank.
3. Frischen, J., Meza, I., Rupp, D., and Wietler, K. (2020). Drought Risk to Agricultural Systems in Zimbabwe: A Spatial Analysis of Hazard, Exposure, and Vulnerability. Sustainability 12(3):752. DOI: 10.3390/su12030752
4. Government of Zimbabwe. (2019). National Drought Risk Capacity Operational Plan for Early Response.
5. Government of Zimbabwe, and United Nations (2013). 'Zimbabwe National Contingency Plan', (December 2012).
6. Government of Zimbabwe (1989). Civil Protection Act Chapter 10:06. Government of Zimbabwe, Zimbabwe.
7. Nangombe, S. S. (2015, August). Drought conditions and management strategies in Zimbabwe. In Proceedings of the Regional Workshops on Capacity Development to Support National Drought Management Policies for Eastern and Southern Africa and the Near East and North Africa Regions, Addis Ababa, Ethiopia (pp. 5-8).
8. Nilsson, A., & Hammar, A. (1996). Study of water resources in Zimbabwe. Publications on Water Resources: No 3. Swedish International Development Cooperation Agency (Sida).
9. UN (2017). Capacity Assessment of the Disaster Risk Management System in Zimbabwe.
10. UNDP (2017). Zimbabwe Human Development Report 2017: Climate Change and Human Development: Towards Building a Climate Resilient Nation. UNDP. Harare.
11. World Bank. (2019). Zimbabwe: Agriculture Sector Disaster Risk Assessment.
12. World Bank (2012). Water Resources Development and Management Background Paper. Towards a Water Secure Zimbabwe: Improving Governance and Utilization of Water Resources. World Bank, Washington DC.
13. ZIMVAC (2016a) (Zimbabwe Vulnerability Assessment Committee) (2016a). Urban Livelihoods Assessment Summary Report. Harare.
14. ZIMVAC (2016b). Zimbabwe Vulnerability Assessment Committee (ZIMVAC) 2016 Rural Livelihoods Assessment. Harare.

Data Sources:
Climate Data: CHIRPS
Drought Risk: International Water Management Institute (IWMI)
CDI: National Drought Mitigation Center at the University of Nebraska-Lincoln
Population Data: WorldPop
Livestock, GDP: FAO, World Bank

About the Southern Africa Drought Resilience Initiative (SADRI)

SADRI is a World Bank initiative supported by the Cooperation in International Waters in Africa Program (CIWA) that integrates across the energy-water-food-environment nexus to help lay the foundations for making southern African countries more resilient to the multi-sectoral impacts of drought. Its main objectives are to generate tools and dialogue for enhancing partnerships and capacity across Member States and to inform future national and regional investments in drought-related activities.