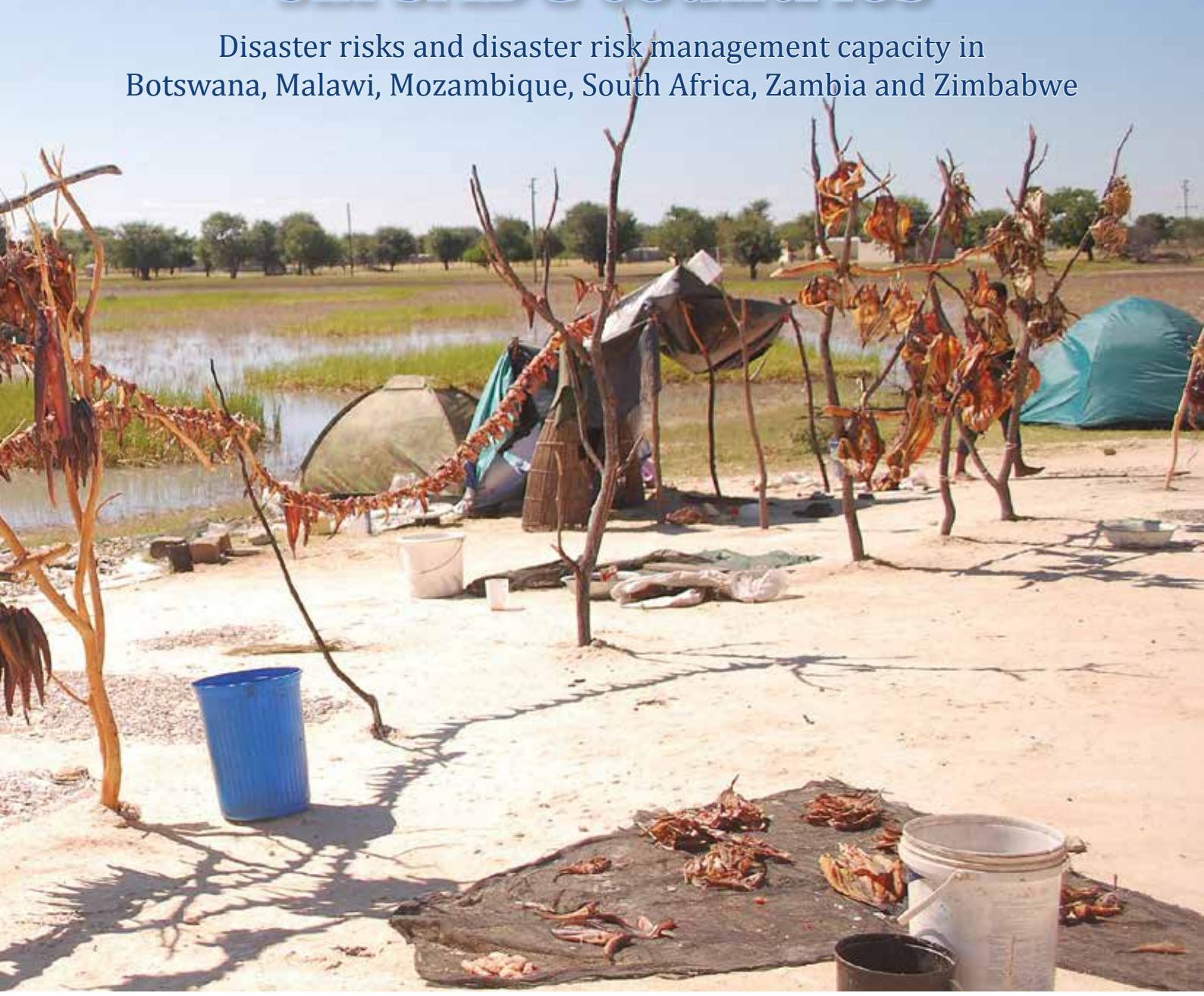
Spaces of vulnerability and areas prone to natural disaster and crisis in six SADC countries

Disaster risks and disaster risk management capacity in
Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe



65 YEARS
International Organization for Migration
The UN Migration Agency

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Desk review

International Organization for Migration
The UN Migration Agency

Foreword

The world is changing. The twenty-first century marks an era of great achievements in terms of development, yet a number of challenges are standing at our doorstep. Natural disasters are increasing in both frequency and intensity, exacerbated by climate change and posing threats to lives and livelihoods as well as development progress made thus far. Income inequalities, uneven development and poverty have left people behind, and continued deprivations of basic human needs and rights place people in state of vulnerability to daily life as well as to external shocks.

The twenty-first century has so far been characterized by new levels of population movement – the number of people displaced by conflict is unprecedented, and displacement caused by natural disaster is on the rise and has since year 2008 affected equivalent to one person every second. Migration as an adaptation mechanism to climate change and disaster as well as a means to seek economic prospects and opportunities for human development continues to shape our globalized world. The movement trends also point towards increased rural-to-urban and urban-to-urban migration, where population growth and urbanization are taking place at a high pace. This contributes to development on the one hand, while bringing new challenges to the urban space on the other hand. Governance structures are of great importance in shaping the world that we want.

Understanding the dynamics of our world is key to reducing risks and channelling the opportunities that the twenty-first century brings towards positive development for humankind. The International Organization for Migration (IOM) remains committed in contributing towards this development. In Southern Africa, this work is closely undertaken in partnership with national governments, regional bodies such as the Southern African Development Community (SADC), United Nations agencies, international cooperating partners and other national stakeholders.

With this review, it is envisaged that light can be shed on some of the current dynamics in the region, focusing on spaces of vulnerability and the exposure to different kinds of hazards in six SADC Member States, namely, Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe. It is further hoped that the findings can contribute towards a regional approach to disaster risk management as well as national risk reduction efforts, integrating lessons learned, experiences and best practices from neighbouring countries, and shaping a region resilient to the challenges of tomorrow.

Charles Kwenin
Regional Director
IOM Regional Office for Southern Africa

Survivors of floods evacuate to a safer location. © IOM

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Executive summary

In light of national, cross-border, transboundary and regional hazards of various type in Southern Africa, a desk review was undertaken by the International Organization for Migration (IOM) in order to enhance the understanding of disaster risk and spaces of vulnerability (i.e. exposure to hazards) in terms of natural disaster and/or crisis situations in Southern Africa, and map the current disaster risk governance structure and preparedness capacity in the region. Six countries in the Southern African Development Community (SADC) region – namely, Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe – were targeted.

Based on existing hazards, vulnerability and resilience, the concept of spaces of vulnerability (i.e. areas with higher exposure to risk), the review identifies spaces of vulnerability in the region to include the following elements:

1. Location of national or transboundary hazards and hazard-prone areas, including but not limited to the Zambezi, Limpopo and Okavango river basins; the Indian Ocean coastline; the East African Rift Valley; dry lands; and areas experiencing particularly unpredictable weather patterns.

2. Areas with increased level of vulnerability, including but not limited to:

    a. Rural areas with high poverty levels; depending on rain-fed agriculture and subsistence farming; with inadequate housing and/or access to basic services such as water and sanitation; at distance to or absence to health-care facilities;

    b. Urban areas not properly planned and/or informal settlements; with high poverty levels, unemployment, income inequality and social exclusion; with inadequate housing and/or access to basic services such as water and sanitation and/or otherwise poor infrastructure; with high population density; with a diverse community living in discord with each other and/or facing social tension;

    c. Border areas with a high level of cross-border population movement, or border areas where communities face transboundary hazards;

    d. Specific vulnerabilities faced by population groups or individuals, including but not limited to migrants and particularly undocumented migrants and “people of concern”; people living with HIV/AIDS; people with special needs; people disadvantaged by or living in the margins of a community/society.

3. Areas with little or no disaster risk management capacity – including absence of comprehensive planning for prevention, preparedness, response, recovery and mitigation activities.

As such, disaster risk reduction and resilience initiatives adapted to national, cross-border, transboundary and regional hazards; development challenges and vulnerabilities; and disaster risk management systems are required, mainstreaming relevant regional dynamics such as sustainable development, climate change, urbanization, and migration into disaster risk management frameworks and operational mechanisms.









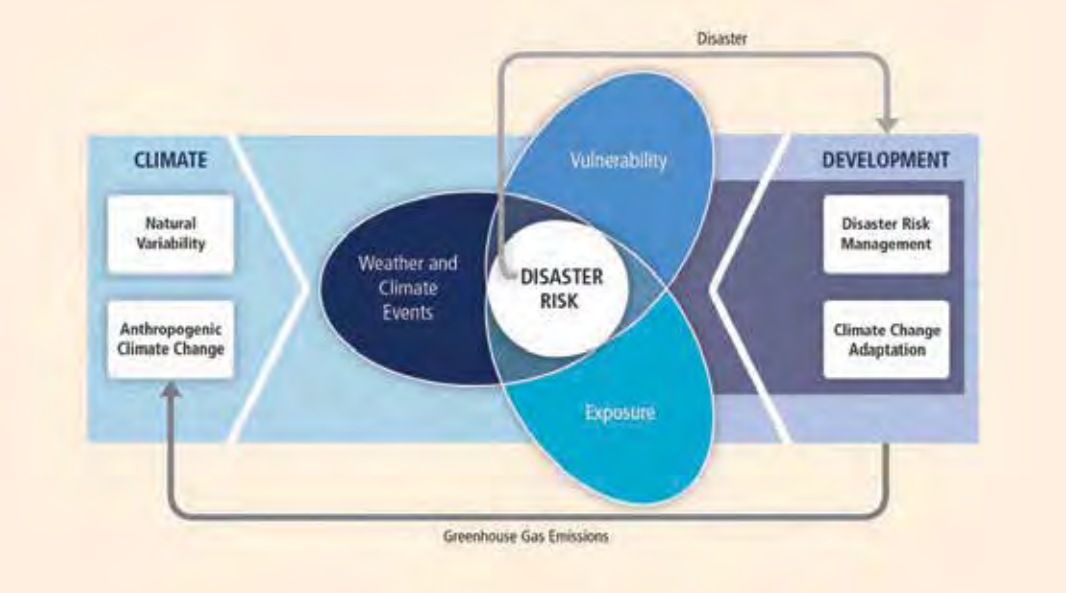

WE'VE
GOT
YOUR
BACK!

1. Introduction

Southern Africa is a region vulnerable to a range of hazards, currently experiencing one of the worst drought disasters and food security crisis in modern history. Subject to development challenges, including economic and human development, the region's vulnerability to disasters is further exacerbated and threatening already gained development achievements.

Features of the twenty-first century – including the sustainable development agenda, climate change, urbanization and migration – are adding new dimensions to existing hazards and vulnerabilities and forcing countries to expand the traditional understanding of risk. Climate change is increasingly affecting the region, causing more extreme weather events and increased frequency and intensity of disaster events. A growing number of factors and dynamics – illustrated in Figure 1 – are thus melting together and becoming of relevance to understand the full spectrum of disaster risk and disaster risk management.[1]

Figure 1: Core concepts of Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX)



Source: Intergovernmental Panel on Climate Change (IPCC), "Summary for policymakers", *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (C.B. Field, et al. (eds.)) (Cambridge and New York, Cambridge University Press, 2012), p. 4.

To enhance the understanding of the specific disaster risks in Southern Africa, the International Organization for Migration (IOM) conducted a desk review to explore key concepts of hazard, exposure, vulnerability and resilience. This report presents the findings from the review and is divided into a global chapter, a regional overview of Southern Africa specifically focusing on the Southern African Development Community (SADC), and six country chapters elaborating the findings from the six target countries of the desk review, namely, Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe. Each country chapter includes a hazards and vulnerability map as well as sections on hazards, development challenges and vulnerabilities, migration trends and patterns, and disaster risk management and governance systems. The report ends with an analysis and conclusion as well as recommendations.

[1] Intergovernmental Panel on Climate Change (IPCC), "Summary for policymakers", *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (C.B. Field et al. (eds.)) (Cambridge and New York, Cambridge University Press, 2012). Available from www.ipcc.ch/pdf/special-reports/srex/SREX_Full_Report.pdf

1.1. Methodology

The overall objective of this study is to enhance the understanding of disaster risk and spaces of vulnerability (i.e. exposure to hazards) in terms of natural disaster and/or crisis situations in Southern Africa, and map the current disaster risk governance structure and preparedness capacity in the region – specifically targeting Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe.

The study was undertaken with the purpose to develop an information tool and at the same time lay a foundation for future programme development and partnership-building with national government stakeholders, the SADC Secretariat and other key partners for disaster risk reduction in Southern Africa.

The structure and analytical framework was built on the formula defining risk. This includes variables of hazards, vulnerabilities and exposure, and resilience and capacities to manage risks.

$$\frac{\text{HAZARD} \times \text{VULNERABILITY} \times \text{EXPOSURE}}{\text{RESILIENCE}} = \text{RISK}$$

The term "spaces of vulnerability" is, for the purpose of this study, to be understood as geographical spaces – "at risk" – with increased exposure to hazards and vulnerabilities and/or with limited resilience.

The specific questions for review of the study are as follows:

- What does the primary hazard profile look like for the Southern African region as well as for the six targeted countries, namely, Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe?
- What development indicators and vulnerability factors – with specific attention to migration trends and patterns – can be identified in Southern Africa as well as in the six targeted countries, namely, Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe?
- What does the disaster risk management system look like and what capacities exist at the national and regional levels, with specific focus on disaster risk governance structures and contingency planning?
- What type of spaces of vulnerability (i.e. exposure) can be identified for Southern Africa?
- Which are the major gaps in terms of effective disaster risk management and how can resilience be strengthened and capacity enhanced at the national level as well as across borders in the region of Southern Africa and the SADC?

A number of indicators have been chosen to better reflect the key concepts. The quantitative indicator for risk has been derived from the INFORM Global Risk Index 2017,[2] which measures risk based on hazards and exposure, vulnerability and capacities of a country. Complementary indicators have further been applied to expand the understanding of risk.

The region of Southern Africa has a multi-hazard profile, which includes risks ranging from traditional natural disasters to technical and industrial disasters as well as risks of social violence and human-made crisis and conflict. This study has mainly focused on the primary natural hazards that

[2] Index for Risk Management (INFORM), *Inform Global Model: Interpreting and Applying – Guidance Note* (2017). Available from www.inform-index.org/portals/0/inform/2016/Guidance%20Note%20-%20Interpreting%20and%20Applying%20the%20INFORM%20Global%20Model.pdf

historically occurred in the six target countries more than five times during the period 2000–2016 according to the Emergency Events Database (EM-DAT), an international disaster database.[3] From this, a hazard profile of droughts, earthquakes, epidemic outbreaks, floods, landslides, storms and cyclones, and wildfires has been created. To this list of hazards, social violence and xenophobia have been included as human-made crises due to their relevance in Southern Africa, in particular in light of the large-scale migration flows in the region as well as the outbreaks of xenophobic violence in South Africa in 2008 and 2015. For each country, hazards reflected in relevant disaster risk management documents and existing national hazard profiling have been cross-referenced and used as a validation of findings.

In addition, climate change has been included as an expansion of the concept of hazards. The Global Climate Risk Index 2017[4] developed by Germanwatch has been used to reflect the dimension of current climate change vulnerability and the extent and impact of "weather-related loss events". There are, however, some limitations in the interpretation of the Index as it only measures direct impacts, whereas slow-onset weather-related events such as drought and food crises – disaster events that frequently occur in Southern Africa – are not included. The Index should thus be understood in light of its limitations and can, for the purpose of this review, serve as a complementary red flag for future climate change risks.

The concept of vulnerability has been derived from most recent development indicators and socioeconomic factors, including first and foremost determinants of human development found in the *Human Development Report 2016*.[5] Specific attention has been given to understand migration trends and patterns due to the intraregional migration trends in Southern Africa as well as the specific vulnerabilities faced by migrants in times of crisis. In light of rapid urbanization and increased population density, the aspect of urban disaster risk and resilience has been included to reflect the level of exposure and risk of damage and destruction faced by a greater number of people.

Resilience can, to some extent, be understood in light of vulnerability. In this study, the focus on resilience has, however, rather been on resilience and capacities from a disaster risk management and governance perspective. The legal and policy framework of disaster risk management and priorities and planning at the regional as well as the national and sub-national levels have served as an indication of resilience and capacity to mitigate future disaster risk.

In the analysis and recommendations, a number of gaps and priority areas have been identified – derived from the combined understanding of disaster risk, hazards, vulnerability, exposure and resilience in Southern Africa. Aspects of particular relevance to the SADC and/or for transboundary or regional purposes have been specifically highlighted.

The study was conducted as a qualitative desk review of primary and secondary information sources. The study included a review of existing and publicly available disaster risk management, development and migration legislation, policies, strategies, protocols, regulations research and reports, as well as other related documents. Quantitative data, such as statistics on migration, disaster and displacement data, and human development indicators were also analysed.

For each country, a hazards and vulnerability map was developed based on the following information:

- Hazard-prone areas from a meteorological and geophysical perspective;
- Incidence of historical disaster events in 2000–2016, recorded on EM-DAT;

[3] D. Guha-Sapir, R. Below and Ph. Hoyois, Emergency Events Database (EM-DAT): The CRED/OFDA International Disaster Database. Université Catholique de Louvain, Brussels. Available from www.emdat.be

[4] S. Kreft, D. Eckstein and I. Melchior, *Briefing Paper – Global Climate Risk Index 2017: Who Suffers the Most from Extreme Weather Events? Weather-related Loss Events in 2015 and 1996 to 2015* (Berlin and Bonn, Germanwatch, 2017).

[5] United Nations Development Programme (UNDP), *Human Development Report 2016: Human Development for Everyone* (New York, 2016).

- Administrative division at the provincial and/or district level, depending on country;
- Population size at the provincial and/or district level;
- Main urban locations;
- Refugee camps and settlements;
- Main border posts.

Baseline data for the mapping was obtained from the global ArcGIS Online mapping tools website,[6] which includes administrative division, natural features, water bodies and transport infrastructure, among others. Location data was verified with Google Maps/Google Earth. Small settlements, residential roads or minor streams were omitted to keep the maps as clear as possible. Additional information was derived from humanitarian response reports, census data, country profiles, and relevant government ministries and UN agencies. Population size depicted has been limited to the provincial level and therefore does not give exact information about population density at local levels (city/town/village). Affected populations are limited to those recorded on the EM-DAT database for the period 2000–2016.

Important to note is that the maps in this report are not warranted to be error-free and do not imply the expression of any opinion whatsoever on the part of IOM concerning the legal status of any country, territory, city or area, or of its authorities or concerning the delimitations of its frontiers or boundaries.

The desk review covered global resources, instruments and guiding documents as well as resources particularly related to Southern Africa and the SADC region, and the target countries themselves, namely, Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe. A detailed list of references and key resources can be found at the end of this report.

As part of the validation of findings, a final draft was shared internally with IOM offices and externally with national and regional disaster risk management counterparts – policymakers and practitioners – in the six target countries, including government and humanitarian partners and the SADC Secretariat. While the validation response rate was very low, the feedback received was duly incorporated in the final version. Participants of the Migrants in Countries of Crisis (MICIC) workshop and training facilitated by IOM and held in South Africa in May 2017 also had a chance to discuss and provide comments on initial findings.

1.2. Limitations of the study

The study is subject to several limitations that should be understood in light of time and resource constraints as well as the chosen methodology and the availability of and access to data and information relevant to the study findings.

First and foremost, with reference to the IOM project "Addressing irregular migration flows in southern Africa, phase VII", the desk review is limited in focus to the six target countries of the project, namely, Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe. This implies limitations in the comparability between countries in Southern Africa and the SADC region. As such, generalizations on the broader regional perspectives should be made with caution. The regional chapter, however, gives an outline of the broader dynamics of disaster risk and disaster risk management found at the SADC level.

Limitations in comprehensive, comparable and reliable information for the six countries have also been a challenge, including variability in national-level data and public availability of and access

[6] Refer to www.arcgis.com/

to information. To mitigate this and strengthen the review to the extent possible, multiple and complementary data sources have been used as a way of triangulation. In the case of hazards, for example, EM-DAT has been used as the primary reference. EM-DAT includes information on disasters, defined based on one of four criteria: 1) 10 or more people dead; 2) 100 or more people affected; 3) the declaration of a state of emergency; and 4) a call for international assistance. While this may underestimate the full hazard profile of a country and discard the diversity of prevalent small-scale and everyday hazards, EM-DAT is still assumed to give a good indication of the prevalence of disaster events in modern history and is a sufficient source used in complement with other available information.

By virtue of the applied methodology, the analysis of disaster risk management frameworks and existing plans has been limited to mere desk review and therefore does not fully consider the implementation capacity of and total resilience in the six target countries.

Conclusively, a number of considerations are advised in the interpretation of the study findings, bearing in mind the above-identified limitations in the desk review. Nonetheless, findings and recommendations can be understood as indications of existing and growing key dynamics as well as possible initiatives that can strengthen disaster risk management capacity and resilience.

Botswana in February 2017. © Tutume Sub-District

Houses are immersed in floodwater. Small boats are used by affected people to save each other's lives. © IOM

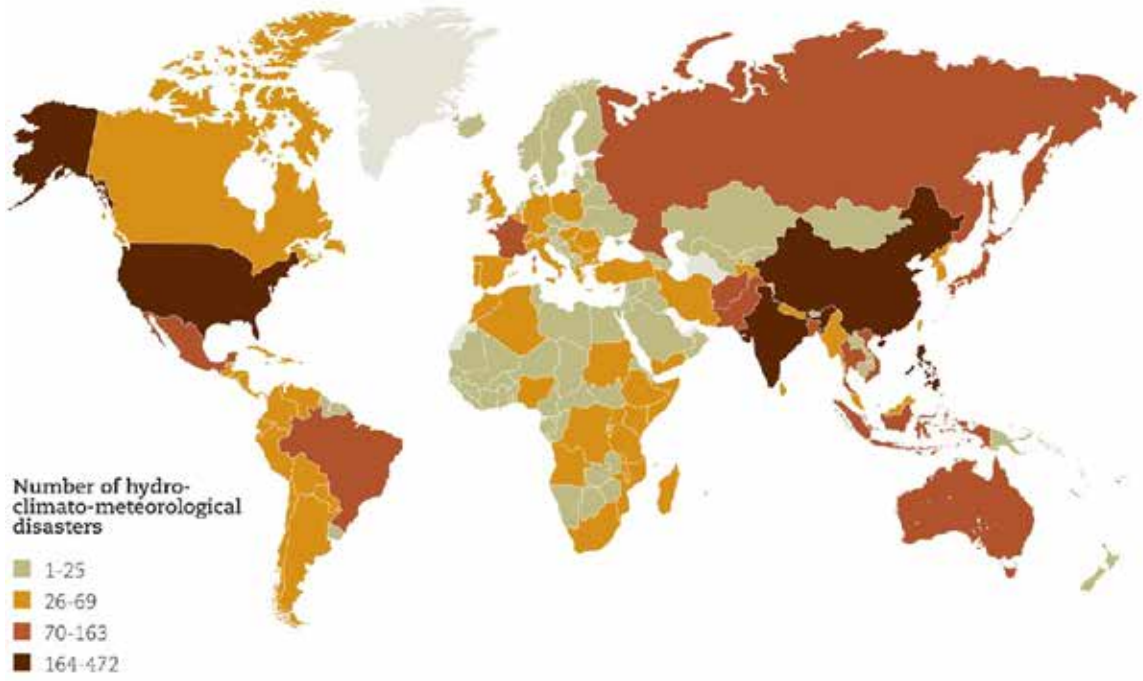
2. Setting the scene: A global glance at disaster risk

2.1. A world of hazards and increasing risks

Natural hazards are not new to humanity, and since time immemorial humankind has lived with these hazards, over time learning to adapt and mitigate the risks in various ways. With climate change, the risks are increasing and disasters are likely to increase in frequency as well as in intensity. New emerging vulnerabilities add to the complexities of disasters and their impact on affected populations and societies. A disaster, according to the United Nations International Strategy for Disaster Reduction (UNISDR),[7] refers to " a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources." Disasters can be viewed as unexpected external shocks to a society.

A glance at the number of disaster events during the period 1995–2015 gives a picture of the distribution of weather-related – hydro-climato-meteorological – disaster events across the globe.[8]

Number of weather-related disasters reported per country, 1995–2015



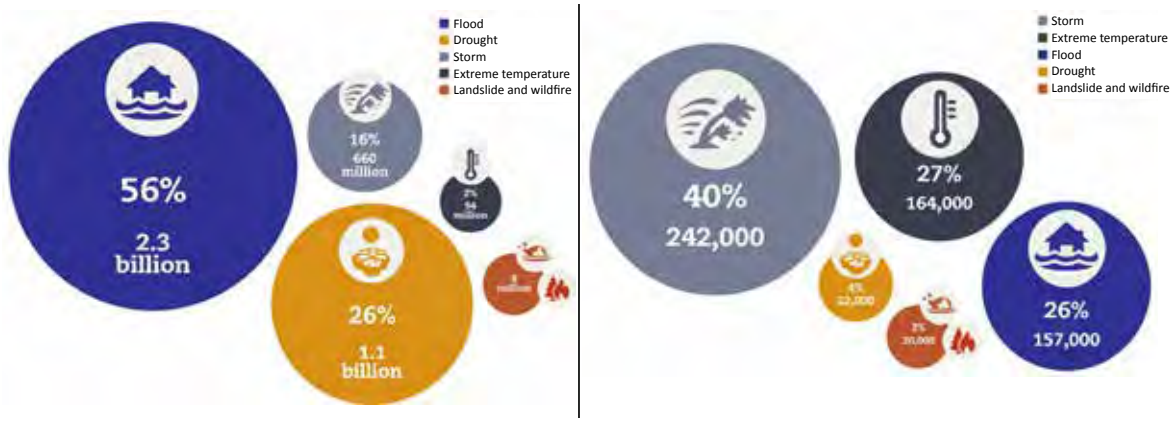
Source: Centre for Research on the Epidemiology of Disasters (CRED), "What is the human cost of weather-related disasters (1995–2015)?" *CRED Crunch*, issue no. 42 (April 2016).

[7] United Nations International Strategy for Disaster Reduction (UNISDR), "Terminology". Available from www.unisdr.org/we/inform/terminology (accessed 20 July 2017).

[8] Centre for Research on the Epidemiology of Disasters (CRED), "What is the human cost of weather-related disasters (1995–2015)?", *CRED Crunch*, issue no. 42 (April 2016).

According to the Centre for Research on the Epidemiology of Disasters (CRED), the type of disasters that affected the largest populations from 1995 to 2015 were floods (56%) and drought (26%); whereas storms, extreme temperatures and floods were the types of disaster that took the greatest toll on human lives (40%, 27% and 26%, respectively). The occurrence and impact of disasters tend to be unevenly distributed, within countries and between countries. Low- and middle-income countries are especially vulnerable even when exposure to hazard is the same. The number of deaths per cyclone disaster event has historically been higher in low-income countries although the proportion of the population living in cyclone-prone areas is higher in high-income countries. In terms of economic losses, exposure of high-income countries is greater in absolute terms, whereas the relative impact on the economy and development is far more destructive in middle- and low-income countries and puts development progress at risk.[9]

Number of people affected (left figure) and dead (right figure) by weather-related disaster type, 1995–2015



Source: CRED, "What is the human cost of weather-related disasters (1995–2015)?" *CRED Crunch*, issue no. 42 (April 2016).

Hazards such as drought, floods, storms, earthquakes, fires, infectious diseases, and human-made social crisis and conflict threaten lives and livelihoods and pose risks of material and economic damage. The humanitarian landscape is however changing, natural disasters are increasing in scale, and impact and new risks are emerging. Natural disasters and crises are increasingly occurring in the urban areas as opposed to the more traditional rural incidence. Some of the most significant large-scale urban disasters of the twenty-first century include the Haiti earthquake, the Sichuan earthquake in China, hurricane Katrina in the United States and the South Asian tsunami. Densely populated areas increase exposure and risks. The urban space – a symbol of development and prospect – is thus becoming a hotspot of disaster risk.[10]

In addition to technological disasters, urban populations face risks of floods and drought, earthquakes, windstorms, landslides, extreme temperatures and fire, as well as commonly associated disasters such as food insecurity and epidemic outbreaks. Human-made crisis, social unrest and violence are other hazards more prevalent in urban areas with higher concentration of people. In 2010, UN-Habitat estimated that approximately 60 per cent of urban dwellers in developing countries had experienced urban violence and crime over a period of five years. Violence can be *economic* and driven by poverty and economic inequality, *social* and driven by social and economic exclusion and spatial segregation, and/or *political* and driven by weak formal governance or dysfunction in the judicial systems.[11]

[9] Ibid.

[10] International Federation of Red Cross and Red Crescent Societies (IFRC), *World Disaster Report 2010: Focusing on Urban Risk* (Geneva, 2010).

[11] The United Nations Conference on Housing and Sustainable Urban Development (Habitat III), "New urban agenda: Draft outcome document for adoption in Quito, October 2016" (September 2016). Available from http://habitat3.org/the-new-urban-agenda/

Disaster events often lead or contribute to additional associated catastrophic events – compound disasters – where multiple vulnerabilities reinforce each other and create a secondary disaster event. Food crisis caused by, for instance, (successive events or protracted situations of) floods and drought affecting agricultural production and food prices is one example of a compound disaster with risk of escalating into large-scale food insecurities. Communicable diseases and epidemic outbreaks such as cholera and waterborne diseases generally tend to correlate with inadequate water, poor sanitation and hygiene, and population density. Compound disasters are to be distinguished from complex emergencies, defined by multiple causes of natural and human-made origin, resulting in humanitarian crisis in the absence of functioning government authorities.[12]

According to the Intergovernmental Panel on Climate Change (IPCC), climate change will further exacerbate existing disaster risks: on the one hand, through slow-onset disasters such as rising sea levels, increasing temperatures, acidification of the oceans, melting glaciers and related impacts, land and forest degradation, coastal land erosion, loss of biodiversity and desertification; and on the other hand, through extreme weather events that cause more rapid onset disasters such as floods and their associated impacts. With less predictable temperatures and rainfall, as well as diminishing clean water sources and arable land, climate change poses additional threats to food security and water availability for millions of people. Climate change is also likely to vary the locations of disaster events, adversely affect the scarcity and distribution of resources, and make it more difficult to anticipate and evaluate probabilities and consequences of extreme weather events and disaster risks. Climate change is also likely to cause conflict – politically and as a means for survival – over natural resources.[13]

A range of factors, including but not limited to physical, social, economic and environmental vulnerabilities in hazard-prone areas, determines the effects of disasters on people and society. Disaster risk management and governance structures determine the resilience and ability to anticipate, absorb, accommodate and recover from the effects of a disaster event in a timely and efficient manner. Well-established and developed societies tend to be more resilient to disaster risks, whereas less developed societies are more susceptible to the external shocks. As such, there is a fine line between disaster resilience and development.

2.2. Sustainable development and vulnerabilities in the twenty-first century

Physical, social, economic and environmental factors – all linked to sustainable development – are determinants of vulnerability.

Physical vulnerability is materially oriented and includes location, environment, and material for critical infrastructure and housing, as well as land use and rural/urban planning, settlement and population density. Social vulnerabilities are closely linked to the level of well-being of individuals, communities and societies, acknowledging the uneven exposure to vulnerability among different groups of the population, such as disadvantaged and/or marginalized populations, ethnic minorities, migrants, women, children and the elderly, and people with specific needs and/or disabilities, among others. Social power relations and social insecurities also increase vulnerability. Economic factors further take into account the economic status of individuals, communities and countries as these generally tend to determine the potential risk of being affected by, as well as a capacity to adapt and recover from, external shock. More than 90 per cent of the deaths related to natural disasters occur in developing countries. Basic socioeconomic infrastructure, such as transportation, water, sewage and health-care facilities, is important in reducing exposure

[12] M. Liu and M.C. Huang, "Compound disasters and compounding processes: Implications for disaster risk management", input paper prepared for the Global Assessment Report on Disaster Risk Reduction 2015 (Geneva, UNISDR, 2014).

[13] A. Lavell et al., "Climate change: New dimensions in disaster risk, exposure, vulnerability, and resilience", in: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (C.B. Field et al. (eds.)) (Cambridge and New York, Cambridge University Press, 2012), pp. 25–64.

to disaster risk. Environmental vulnerability includes the ecological systems and care for nature, land and the environment, as well as access to clean and safe air, water and sanitation, and proper waste management. The four categories of vulnerability are multidimensional and reinforce each other.[14]

According to the UNDP *Human Development Report 2016*,[15] human development in the world has increased considerably – including in terms of income, health and education – and absolute poverty levels globally have decreased over the past 25 years. Human development is measured through the Human Development Index (HDI), integrating three basic dimensions of development: 1) life expectancy at birth and the ability to lead a long and healthy life; 2) de facto and expected years of schooling and ability to acquire knowledge; and 3) gross national income per capita and the ability to achieve a decent standard of living. These three dimensions are further reflected in the light of inequality, gender development and women empowerment, and multidimensional (non-income dimensions of) poverty.

Today more people have access to basic services and there has been an overall improvement in quality of life, more children have access to education, and health indicators have improved. Access to water and sanitation has improved significantly and the Millennium Development Goal of halving the proportion of the population without access to safe drinking water was reached five years ahead of schedule. Nonetheless, human development progress has been unevenly distributed, within countries and between countries across the world. Deprivations of basic needs are still lingering, for instance, while one third of the world's food is wasted, people still live in food insecurity and suffer malnutrition, poor nutrition being the cause of almost half (45%) of all deaths of children under five years. At the same time, income inequalities are deepening and wealth is increasingly concentrated to a few. New development challenges are emerging, including violent extremism. The global population is growing and projected to continue its growth to just under 10 billion in 2050. Coupled with climate change, epidemics, migration and widespread urbanization, as well as protracted poverty, this will severely challenge the world of tomorrow.[16]

External shocks to society risk undermine or further cause stagnation in development progress. Vulnerable and marginalized people are normally those hardest hit. At the individual level, characteristics such as economic status and financial means, gender, age, education and skill level, social network and social class all affect the level of vulnerability. So do the human capabilities that people possess and their active participation in processes that shape their lives. These factors are closely intertwined with sustainable development achievements.[17]

Targeted governance initiatives are key to addressing these development challenges. The UNDP *Human Development Report 2016* identifies four key strategic points for policymaking. Polices need to be universal to reach everyone – conceptually and practically – including those traditionally left out or unevenly targeted. Attention to special needs of groups of people – such as those marginalized, subject to discrimination and people with specific needs, among others – need to be reflected and pragmatically addressed. Resilient policies are fundamental to protect progress and avoid setbacks in achievements even in the face of risks, vulnerabilities and external shocks. For polices to bring real empowerment, participatory processes, human rights approaches and mechanisms for accountability are equally important. National development policies thus need to consider the complexity and multiple dimensions of sustainable development, integrating aspects of disaster risk reduction and resilience as much as disaster risk management policies need to integrate the development perspective.[18]

[14] United Nations Inter-Agency Secretariat of the International Strategy for Disaster Reduction (UN/ISDR), *Living with Risk: A Global Review of Disaster Risk Reduction Initiatives*, 2004 version, vol. 1 (Geneva, 2014). Available from www.unisdr.org/files/657_lwr1.pdf

[15] UNDP, *Human Development Report 2016*.

[16] Ibid.

[17] Ibid.

[18] Ibid.

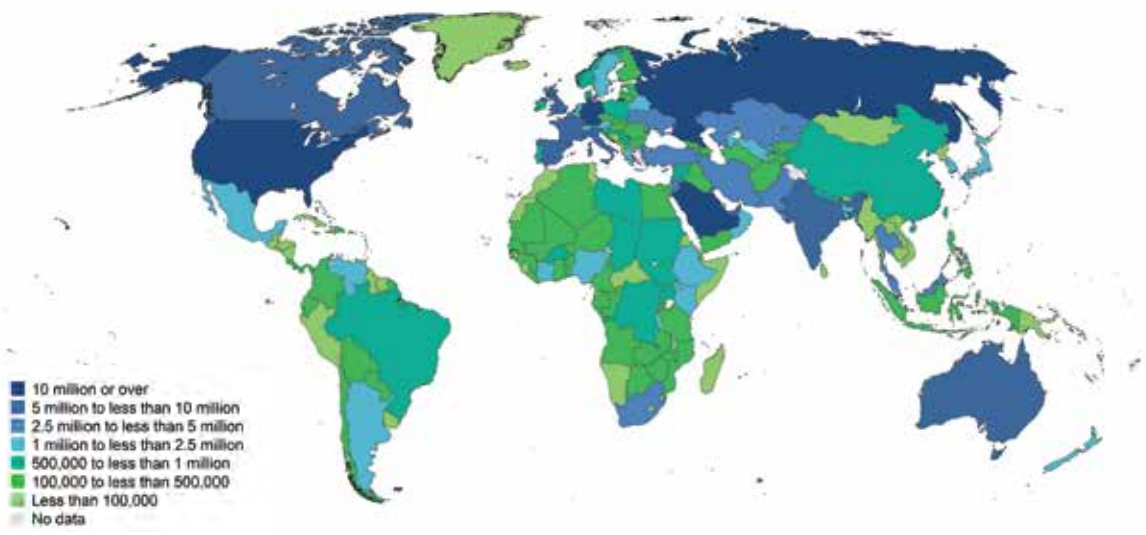
The challenges of the twenty-first century have forced affected or at-risk populations to apply adaptation strategies for short- and long-term mitigation. Population movement and migration is – and has always been – fundamental in this regard. The increasingly globalized world of today, characterized by both internal and cross-border movement, requires a solid understanding of the dynamics of population movement and migration, in particular in light of disaster risk and disaster risk management.

2.3. Global migration trends and patterns

Migration is defined by IOM as the "movement of a person or a group of persons, either across an international border, or within a State. It is a population movement encompassing any kind of movement of people, whatever its length, composition and causes; it includes migration of refugees, displaced persons, economic migrants and persons moving for other purposes".[19]

Migration is a defining feature of the twenty-first century. According to the Population Division of the UN Department of Economic and Social Affairs (UN DESA), in 2015 the international migrant stock, the total number of persons living outside of the country where they were born, reached 244 million. This equals approximately 3.3 per cent of the world's total population. The majority is of intraregional character, that is, migration is taking place between countries that are located within the same major area or region. The number of internal migrants, persons living within their country of birth but residing outside of their habitual place of origin, was estimated to be 763 million in 2015. In addition, migration can also be irregular – often undertaken with the help of smuggling networks or on individual account. The number of irregular, undocumented migrants in the world is however not included in official international estimates.[20]

International migrant stock, 2015



Source: UN DESA, Population Division, *International Migrant Stock: The 2015 Revision*.

The determining features of migration include push and pull factors. Push factors can be derived from different forms of hardship in the country of origin – be it political, economic, social or environmental. Pull factors are opportunities and conditions in the same, as well as other benefitting factors that attract people to move. For example, lack of economic prospects and high

[19] International Organization for Migration (IOM), *Glossary on Migration*, second edition, International Migration Law Series No. 25 (Geneva, 2011). Available from https://publications.iom.int/books/international-migration-law-ndeg25-glossary-migration

[20] United Nations Department of Economic and Social Affairs (UN DESA), *Trends in International Migrant Stock: The 2015 Revision*, United Nations database, POP/DB/MIG/Stock/Rev.2015 (New York, United Nations, 2015); UN DESA, UN-ESA statistics, "Cross-national comparisons of internal migration: An update on global patterns and trends", technical paper no. 2013/1; UN DESA, Population Division, "Trends in international migration, 2015", *Population Facts*, no. 2015/4 (December 2015).

unemployment trigger migration for better labour market opportunities; limited access to basic services such as health and education triggers migration for social safety and welfare; conflict and war prompt forced migration in hope of safety and security. Likewise, climate change, hazards and recurrent disaster events cause migration for adaptation purposes and greater resilience.[21]

The concept of environmental migration has gained grounds in recent years. IOM defines it as human mobility predominantly for reasons of sudden or progressive change in the environment that adversely affects the lives or living conditions of persons or groups of persons obliged to leave their habitual homes or who choose to do so, either temporarily or permanently, and move either within their countries or abroad. The key driver of environmental migration or forced environmental migration is however difficult to diffuse. It is usually divided into two types of causes: 1) rapid-onset trigger events such as floods or earthquakes, resulting in urgent movement of people and sometimes even displacement; and 2) slow-onset climate change such as recurrent dry spells and drought or land degradation, which affect population mobility patterns for the long-term perspective in a more subtle way. Migration can thus be voluntary or forced, caused by coercion or threats to life and livelihood arising from natural or [human]-made causes, can be temporary or permanent, and can be internal within a country of origin or international across borders and to a country other than usual residence.[22] The scale and nature of environmental migration largely depend on the effectiveness of existing formal adaptation policies at the local and national levels, or the mere absence of such policies.[23]

The magnitude of disaster-induced displacement, representing one of the biggest humanitarian challenges of the modern era, is estimated in the 2016 *Global Report on Internal Displacement (GRID 2016)* to have affected on average one person every second since 2008, reaching a total average of 26.4 million people per year. In 2015, new displacements were recorded at 8.6 million owing to conflict/violence and 19.2 million owing to natural disasters – some of these people being subject to recurrent displacement events. The vast majority of displacements took place in developing countries and approximately 85 per cent of these were the result of climate- or weather-related disasters. Population growth in areas particularly exposed to hazards, such as urban areas, cities and megacities, contribute to increased risk of disaster-induced displacement. Urban areas increasingly also tend to host displaced populations. Globally, it is estimated that cities represent 75 per cent of total displacement.[24]

The Nansen Initiative[25] is an international endeavour to address displacement and protection for "people displaced across borders in the context of disasters and the effects of climate change". The Initiative tackles the protection gap associated with environmental migration and was developed in the absence of existing international protection instruments similar to those articulating the protection of refugees or internally displaced persons (e.g. 1951 Refugee Convention and its 1967 Protocol, UN Guiding Principles on Internal Displacement, and national legislations protecting refugees and the internally displaced). The Nansen Initiative also attempts to find a common understanding of how to distinguish between voluntary and forced movement in the context of exposure to hazards and disaster risks. The implementation of the Nansen Initiative is undertaken under the Platform on Disaster Displacement,[26] created as a follow-up to the Nansen Initiative, and with the main task to address knowledge of and data gaps on climate change and disaster-induced displacement, enhance the use of existing national best practices, and mainstream human mobility challenges for policy and practice.

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21 IOM, *Glossary on Migration*, second edition.

22 D. Ionesco, D. Mokhnacheva and F. Gemenne, *The Atlas of Environmental Migration* (Oxford and London, Routledge/Taylor & Francis Group; London, Earthscan from Routledge; Geneva, IOM, 2017).

23 F. Gemenne, "Migration, a possible adaptation strategy?", *Synthèses*, No. 03/10 June (Paris, Institute for Sustainable Development and international Relations (IDDRI), 2010). Available from www.iddri.org/Publications/Collections/Syntheses/Sy_1003_Gemenne_Migration.pdf

24 A. Bilak et al./Internal Displacement Monitoring Centre (IDMC), *Global Report on Internal Displacement (GRID 2016)* (Geneva, IDMC, 2016), available from www.internal-displacement.org/globalreport2016/; and Global Challenges Foundation, *Global Challenges Annual Report: GCF & Thought Leaders Sharing What You Need to Know on Global Catastrophic Risks 2017 (Global Catastrophic Risks 2017)* (2017), available from https://api.globalchallenges.org/static/files/Global%20Catastrophic%20Risks%202017.pdf

25 Refer to www.nanseninitiative.org/

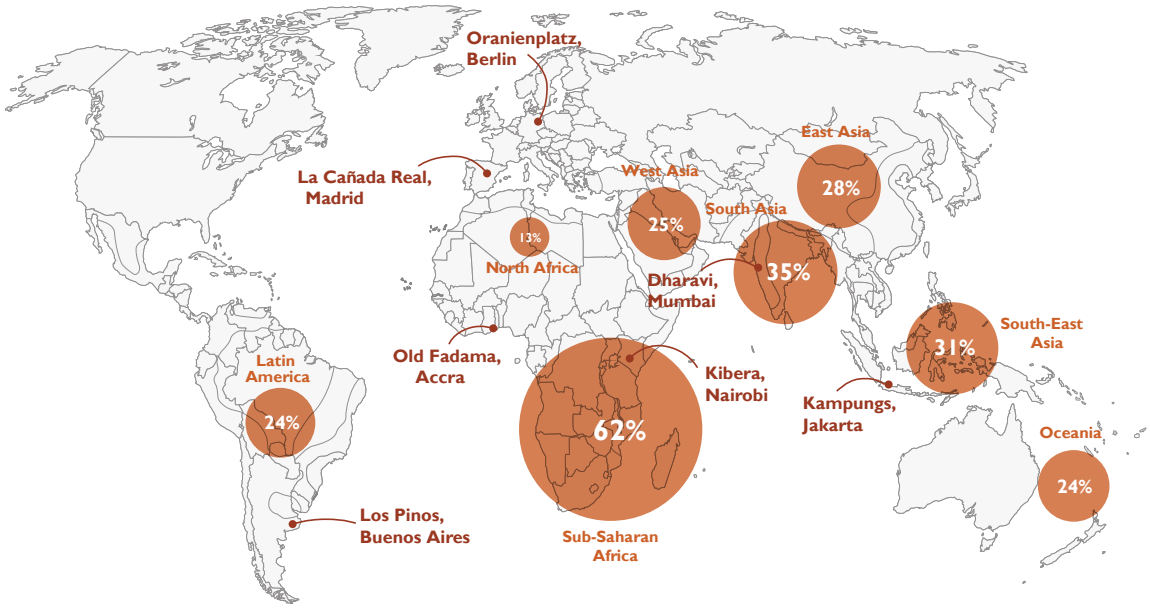
26 Refer to http://disasterdisplacement.org/the-platform/the-context/

The current migration trend reveals that rural-to-urban and urban-to-urban migration – be it internal or international – accounts for the majority of population movements. This migratory flow is one determining factor of the rapid urbanization in the world, combined with natural population growth as well as extensions of urban boundaries and emerging new urban centres. The process of urbanization has been particularly fast in low- and middle-income countries.[27]

According to the UNDP *Human Development Report 2016*, more than half of the world's population has been living in urban/peri-urban areas since year 2007. Rapid urbanization has resulted in growth of cities and megacities as well as informal settlements and slums. The latter has become the home of large proportions of urban populations, and it is estimated that approximately 880 million people worldwide live in informal settlements and slums. Informal settlements are where a large part of the urban expansion is predicted to take place in the future.[28]

While urban centres may provide hope for better lives and livelihood opportunities as well as safety and security from natural or human-made hazards, the unplanned and rapid urbanization is also creating new development and humanitarian challenges specific to the urban space. It is estimated that globally more than 1 billion people face below minimum-standard housing conditions and inadequate sanitation. Unplanned urbanization and increased pressure on infrastructure, scarce resources and services compromise the quality of life for many urban residents. Growing urban populations – local and migrant – and increased population density in combination with environmental degradation and overuse of urban land areas, inadequate water resource management, drainage systems and solid waste management are all significant risk drivers of particular concern for the urban space.[29]

Proportion of urban population living in slums per region



Source: IOM, *World Migration Report 2015 – Migrants and Cities: New Partnerships to Manage Mobility* (Geneva, 2015). Available from https://publications.iom.int/books/world-migration-report-2015-migrants-and-cities-new-partnerships-manage-mobility

For migrants, existing vulnerabilities are not uncommonly exacerbated by the mere virtue of being a migrant or as a direct result of the migration process itself either during travel or upon arrival. These vulnerabilities include but are not limited to risk of stigma, marginalization, and sometimes abuse and violence, as well as migrant-specific vulnerabilities associated with ethnic

[27] IOM, *World Migration Report 2015 – Migrants and Cities: New Partnerships to Manage Mobility* (Geneva, 2015). Available from https://publications.iom.int/books/world-migration-report-2015-migrants-and-cities-new-partnerships-manage-mobility

[28] UNDP, *Human Development Report 2016*.

[29] Habitat III, "New urban agenda". Available from http://habitat3.org/the-new-urban-agenda

background, language barriers, inadequate access to information and local knowledge, cultural barriers, and inadequate access to social protection and support networks. Legal status and migration policies, rights of migrants, access to basic services and adequate housing, obstacles to community engagement and public participation, and attitudes and sometimes violence directed towards foreigners and xenophobic sentiments of the host community further influence these vulnerabilities.[30]

The multidimensional challenges and interconnectedness of urbanization, sustainable development, and disaster risk have increasingly become internationally recognized. For example, the Sustainable Development Goals speak of inclusive, safe, resilient and sustainable cities; the Sendai Framework[31] recognizes the causality between urban planning and disaster risk; and the New Urban Agenda adopted under Habitat III sets a global standard for sustainable urban development. The Rockefeller Foundation and its initiative 100 Resilient Cities[32] have been supporting the urban resilience agenda since 2013, in response to economic, social and physical challenges of the twenty-first century. The aim is to enhance the capacity of cities to adapt and develop despite overhanging chronic vulnerabilities and regardless of external shocks such as earthquakes, floods and disease outbreaks, integrating environmental sustainability and disaster risk reduction in urban resilience planning in a holistic way.

Whereas urban resilience does include entire urban populations, migrant-specific vulnerabilities in times of disaster are not particularly accounted for. This has led to the establishment of the Migrants in Countries in Crisis (MICIC) initiative.[33] The initiative was launched as a government-led effort to improve the protection of migrants caught in natural or human-made disaster events. With MICIC, emphasis is on the migrants' rights as well as frameworks, policies, structures and practices in place for migrants' resilience in the pre-crisis phase; migrants' non-discriminatory access to assistance as well as needs-based emergency relief during the emergency phase; and migrants' recovery needs in the post-crisis phase. MICIC is limited to a primary focus on international migrants, as this is generally absent or limited in national disaster risk management systems, in particular when it comes to undocumented migrants.

The number of different existing initiatives illustrates the complexity of disaster risk in a world of multiple hazards and overlapping vulnerabilities, at the country level as well as at the level of at-risk and affected populations.

Effective disaster risk management needs to account for all dimensions of existing risk – including development challenges and vulnerabilities as well as relevant contextual dynamics – and is key to reducing risks and building resilience. Coping capacity and resilience depends, to a large extent, on the disaster risk management and governance structures. At the national level, the aggregate risks of a country are accounted for, whereas local disaster risk management structures need to be more specific in their approach. Not uncommonly though, local disaster risk management structures tend to be weak and sometimes are also subject to unclear mandates and/or inadequate funding.[34]

[30] L. Guadagno, "Reducing migrants' vulnerability to natural disasters through disaster risk reduction measures, including migrants in disaster prevention, preparedness, response and recovery efforts", *Migrants in Countries in Crisis (MICIC) Issue Brief*, October 2015.

[31] United Nations, Sendai Framework for Disaster Risk Reduction 2015–2030. Available from www.unisdr.org/files/43291_sendaiframeworkfordrren.pdf

[32] Refer to www.100resilientcities.org/

[33] Refer to https://micicinitiative.iom.int/about-micic

[34] Habitat III, "New urban agenda".

2.4. Global disaster risk management and governance framework

Humanitarian risks are closely related to sustainable development factors that are essential for resilience. Resilience can be referred to as "the ability of a system and its component parts to anticipate, absorb, accommodate or recover from the effects of a hazardous event in a timely and efficient manner (…)". Strategies for strengthening resilience or action to prevent or reduce the negative impact of disasters can be formal at the local, national, regional or global level, in complementarity to informal adaptation strategy initiated by people living with disaster risks.[35]

In times of disaster, national disaster risk management systems are at the core of their implementation and emergency relief is provided according to the needs of the affected population and disaster impact. The United Nations supports these efforts according to requests for humanitarian assistance. In 2005, humanitarian reform was introduced to ensure predictability, accountability and partnership in times of disaster. Part of the humanitarian reform was the Cluster Approach,[36] organizing the UN response in eleven clusters: Camp Coordination and Camp Management (CCCM); Early Recovery; Education; Emergency Telecommunications; Food Security; Health; Logistics; Nutrition; Protection; Shelter; and Water, Sanitation and Hygiene (WASH). Each cluster supports service delivery in its sector; undertakes needs assessments, gap analyses, awareness-raising and advocacy; coordinates planning and strategy development; and supports national capacity-building where needed.

A disaster risk reduction strategy aims at empowering people to take action and plan for potential risk factors and strengthen governments to prevent and mitigate risks. Increasingly, disaster events are showing us that hazards have no borders and risks are, by nature, transboundary and multidimensional. As such, effective disaster risk management systems capable of handling the challenges of the twenty-first century call for new alliances and hybrid organizations across governments and across borders, multi-stakeholder disaster risk management systems and cross-sectoral initiatives, and revision of roles, responsibilities and resources.[37]

The Sendai Framework for Disaster Risk Reduction 2015–2030, successor of the Hyogo Framework for Action 2005–2015, puts strong emphasis on multi-hazard, all-inclusive disaster *risk* management of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters. Sendai calls for the prevention of new risk, reducing existing risk and strengthening resilience through four priorities: 1) understanding disaster risk; 2) strengthening disaster risk governance to manage disaster risk; 3) investing in disaster risk reduction for resilience; and 4) enhancing disaster preparedness for effective response and "build back better" in recovery, rehabilitation and reconstruction.[38] Sendai calls for comprehensive disaster risk governance across the board, and for strengthened national, regional and global coordination and cooperation. There is however no one-size-fits-all approach, although some basic elements are needed for effective disaster risk reduction and resilience.

Supporting the disaster risk management efforts are the initiatives for climate change adaptation. The United Nations Framework Convention on Climate Change (UNFCCC) provides assistance to least developed countries in the prioritization of activities that, if further delayed, could increase vulnerability or lead to increased costs at a later stage. This is done through the National Adaptation Programmes of Action (NAPAs),[39] frameworks that focus on the vulnerabilities of current climate

[35] IPCC, "Summary for policymakers", in: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (C.B. Field et al. (eds.)) (Cambridge and New York, Cambridge University Press, 2012). Available from www.ipcc.ch/pdf/special-reports/srex/SREX_Full_Report.pdf

[36] Humanitarian Response. Refer to www.humanitarianresponse.info/en/about-clusters/what-is-the-cluster-approach (accessed 20 July 2017).

[37] P.N. Lal et al., "National systems for managing the risks from climate extremes and disasters", in: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (C.B. Field et al. (eds.)) (Cambridge and New York, Cambridge University Press, 2012), pp. 339–392. Available from www.ipcc.ch/pdf/special-reports/srex/SREX_Full_Report.pdf

[38] United Nations, *Sendai Framework for Disaster Risk Reduction 2015–2030*.

[39] United Nations Framework Convention on Climate Change, "National Adaptation Programmes of Action (NAPAs)". Available from http://unfccc.int/national_reports/napa/items/2719.php

variability and extreme events and areas where risks increase due to climate change, commonly linking aspects of climate change and disaster risk.

Disaster risk *governance* refers to the system of institutions, mechanisms, policy and legal frameworks that guide, coordinate and oversee disaster risk reduction and related risks. This means ensuring that sufficient levels of capacity and resources are made available to prevent, prepare for, manage and recover from disasters. Institutional, policy and legal frameworks are particularly important, as they set the parameters for the national disaster risk management system.[40]

Disaster risk *reduction* is conceptual and defines goals and objectives, aiming to systematically reduce the risks of prevalent disasters and increase resilience by understanding drivers behind hazards, risks, and vulnerabilities and by minimizing these while avoiding or lessening the adverse effects of disasters through prevention, mitigation and preparedness. Disaster risk reduction builds resilience and strengthens capacity to cope with disasters in the broader context of sustainable development.[41]

Disaster risk *management* is understood as the implementation – practical application – of disaster risk reduction policies and strategies, through systematic processes, administrative decisions, and planning with set goals and specific objectives of resilience, reduction of risks and reduction of disaster losses. Effective national disaster risk management plans correspond to different levels of a country's administrative responsibilities and are adapted to the context and existing circumstances. Understanding how disaster risk management impacts on sustainable development and vice versa is of essence in disaster risk management planning. It is the risks that are to be managed, rather than the disasters per se. Underlying drivers of risks include but are not limited to poverty, inequality, poor economic and urban planning and development, environmental degradation and climate change. It is thus also important to mainstream and integrate disaster risk management into development plans and development financing, as its success and that of adaptive societies depend on sustainable economic and social processes.[42]

Translating the conceptual frameworks for disaster risk reduction and disaster risk management into action requires planning and operational capacity. Disaster response plans are general and paint the picture of a multi-hazard context as well as the challenges and opportunities to resilience. Contingency plans are more specifically focusing on disaster events and identify humanitarian needs, actions, resources, constraints, and gaps based on different realistic scenarios. Contingency plans are usually developed through consultative processes, engaging multiple stakeholders; they generally include a hazard profile, possible disaster scenarios, and operational response procedures based on risks, vulnerabilities and capacities of relevance to the context. Contingency plans are usually limited to a given time frame. A contingency plan aims to answer the questions of what is going to happen, what needs to be done when it happens and what can be done in advance to be better prepared.

[40] UNISDR. Refer to www.unisdr.org/we/inform/terminology#letter-d (accessed 20 July 2017).
[41] Ibid.
[42] Ibid.

In general terms, a contingency plan includes the following contents:[43]

- Estimated number of persons at risk/in need.
- Situation and risk analysis including the country context, the risks included in the plan, and potential locations and possible triggers for disasters. The type and extent of humanitarian needs and the vulnerabilities and coping mechanisms/resilience of the population are outlined together with the response and operational capacity of the country, including government capacity as well as that of partners and other stakeholders. A mapping of gaps, constraints and possible obstacles in the provision of humanitarian assistance and protection are also included.
- Planning figures for humanitarian assistance.
- Response strategy including the type of relief to be provided, immediate response action and relief capacity with current existing resources. A section detailing the operational delivery is commonly also inserted to identify the action needed for immediate response (who does what and when) as well as the preparatory measures for rapid immediate response.
- Coordination mechanisms and roles and responsibilities.
- Inventory of operational support framework and existing resources such as standardized and endorsed rapid needs assessment, logistical capacity mapping, information-sharing platforms and others.
- Preparedness gaps and capacity.
- Funding requirements and overall estimates of resources needed to implement the preparedness and response plan.

Integral of, or complement to, contingency plans is an evacuation plan in order to save and protect the lives of people directly affected, with timely and rapid response mechanisms. This entails a plan on movement of people living in, working in and visiting a disaster-affected area – from imminent danger to safer locations and temporary shelter. An evacuation plan is always adapted to context-specific risks and scenarios. The global humanitarian CCCM Cluster has developed a comprehensive guide for planning mass evacuation in natural disasters, *The MEND Guide*, as a reference document merging emergency planning and humanitarian considerations with a practical approach. Effective contingency planning leads to effective disaster response, which equals time – and lives – saved when a disaster occurs.[44]

The following chapter elaborates on the specific characteristics of Southern Africa and how disaster risk management systems are currently being organized in one of the world's most hazard-prone regions.

[43] Adapted from: Inter-Agency Standing Committee (IASC), "Contingency plan template" (2015), available from www.humanitarianresponse.info/en/coordination/preparedness/document/iasc-contingency-plan-template; IFRC, *Contingency Planning Guide* (2012), available from www.ifrc.org/PageFiles/40825/1220900-CPG%202012-EN-LR.pdf

[44] Global Camp Coordination and Camp Management (CCCM) Cluster, *The MEND Guide: Comprehensive Guide for Planning Mass Evacuations in Natural Disasters* (2014). Available from www.globalcccmcluster.org/system/files/publications/MEND_download.pdf

IOM conducting the Displacement Tracking Matrix data collection in Chikwawa. © IOM

3. Regional overview: Southern Africa

3.1. Southern African Development Community

Africa hosts some of the world's most hazard-prone countries and at-risk populations. In recent years, the region has experienced a rising number of disasters. This regional overview focuses on the case of Southern Africa, herein defined and referred to as the Member States of the SADC.[45] The SADC consists of 15 countries: Angola, Botswana, the Democratic Republic of the Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, the United Republic of Tanzania, Zambia and Zimbabwe.

The region is diverse in terms of peoples and demographic profiles, economic and social development, languages, and the environment and landscape. With a glance at the history of disaster events in Southern Africa, the hazard profile of the region reveals itself just as diverse. Some of the main hazards are associated with the natural geographical characteristics of the region, many of which are of cross-border nature.

The Zambezi River is the longest east-flowing river in Africa (2,574 km). It starts in Zambia and ends into the Indian Ocean via Angola, Namibia, Botswana, Zambia, Zimbabwe and Mozambique. It is the cause of cyclical flooding as well as recurrent outbreaks of waterborne and vector-borne diseases in the region. The Limpopo River is the second longest east-flowing river in Africa (1,750 km), originating along the border between South Africa and Botswana and ends in the Indian Ocean via Zimbabwe and Mozambique. Okavango River is another major river system, running through Angola, Namibia and Botswana. These rivers are also the cause of recurrent flooding and pose threats to the at-risk populations along the river basins. Risk of flooding is further exacerbated by storms and tropical cyclones, often associated with heavy rainfall. The coastal countries as well as Indian Ocean islands such as Madagascar and Mauritius often suffer the greatest adversities of these events.

A number of natural processes that affect weather and climate conditions increase the risk and frequency of disaster events. El Niño and La Niña – creating the El Niño and the Southern Oscillation (ENSO) fluctuation in temperatures between the atmosphere and the ocean – normally cause opposite weather conditions. El Niño causes extreme temperatures, dry spells and drought, while La Niña results in excessive rainfall and subsequent flooding. In recent history, this has resulted in more extreme, often regional or transboundary, disaster events and caused both flooding and drought of high intensity in Southern Africa.[46]

[45] Refer to www.sadc.int/

[46] See, for example: IPCC, available from www.ipcc.ch/publications_and_data/ar4/wg1/en/ch3s3-6-2.html

In addition, the SADC region is home to parts of the East African Rift Valley – resulting from a split in the African Plate into two and currently one of the largest seismically active rift systems in the world. The rift passes through Ethiopia, Kenya, Uganda, Rwanda, Burundi, Zambia, the United Republic of Tanzania, Malawi and Mozambique as well as the offshore coast of Mozambique. Movement in the African plate has caused earthquakes across the region as well as in countries beyond the rift valley itself.

The region's exposure and vulnerability to disaster events is also linked to climate change as well as factors of artificial geographical features – human-made and often derived from human settlements – and fuelled by sustainable development challenges, in particular in areas of low or socioeconomic development.

3.2. Hazards and disaster risk in Southern Africa

The SADC region faces a range of hazards; and levels of risk, exposure to hazards and vulnerabilities vary among Member States, as do their resilience and coping capacity. According to the 2017 INFORM Global Risk Index,[47] the top three SADC countries in terms of overall risk are the Democratic Republic of the Congo, Mozambique and the United Republic of Tanzania.

The Global Risk Index is based on three key risk dimensions:[48]

1. **Hazard and exposure**, reflecting the probability of physical exposure to specific hazards by accounting for the number of people living in such hazard-prone areas as well as the frequency of disaster events. Hazards include natural disasters and human-made hazards, the latter being indexed in light of sociological hazards of crime, civil disorder, terrorism and war.
2. **Vulnerability**, understood as economic, political and social development characteristics of a society that can be destabilized in the event of disaster. Reflected herein are development indicators such as human development, multidimensional poverty, income inequality, gender and aid dependency. Other dimensions of vulnerability included are the individual characteristics of the population as well as the specific vulnerabilities of uprooted groups such as refugees, internally displaced persons (IDPs) and returnees.
3. **Lack of coping capacity**, measuring the governments' efforts to increase resilience of society and success in the implementation of capacity-building efforts, which may be manifested, for instance, in the ability of a country to cope with disasters in terms of formal, organized activities led by the government, as well as in the existing disaster risk reduction infrastructure.

2017 Global Risk Index	
Angola	4.9
Botswana	2.9
Democratic Republic of the Congo	7.0
Lesotho	4.2
Madagascar	5.0
Malawi	4.8
Mauritius	2.1
Mozambique	6.0
Namibia	3.7
Seychelles	2.2
South Africa	4.3
Swaziland	3.4
United Republic of Tanzania	5.7
Zambia	4.1
Zimbabwe	4.9

Important to remember about the Index is that it is measured at the aggregate level and does not reveal pockets of higher or lower risk within a country. For example, specific development challenges, such as income inequality, pose greater risks within low-income households. Sector-specific vulnerabilities to climate change and disaster risk are also inadequately reflected in the INFORM Risk Index. Namibia is a good example of a country with low INFORM Risk Index but at the same time ranked among the most at-risk countries in the world in terms of climate-induced

[47] The INFORM Risk Index is the first global tool for understanding risk of humanitarian crisis – considering hazard profile, development factors and vulnerability, as well as disaster risk management capacity. The Index is the result of collaboration between the IASC Task Team for Preparedness and Resilience and the European Commission.

[48] INFORM Index for Risk Management (2017).

agricultural production losses with high risks specifically in terms of food insecurity, health and impoverished livelihoods.[49]

Beyond the INFORM Risk Index, Southern Africa is exposed to a range of hazards and disaster risk. Major hazards identified in the SADC Disaster Preparedness and Response Strategy and Fund 2016–2030 include floods; drought; snow; volcanic eruption; landslides; tsunamis; tropical cyclones; storms; wildfires; earthquakes; epidemics such as malaria, cholera and other diarrhoeal diseases; malnutrition and stunted growth; as well as risk of animal diseases such as foot and mouth disease and anthrax.[50]

As this review is being undertaken, the current situation in Southern Africa is shaped by the 2015/2016 El Niño cycle, assumed to be the strongest cycle in 50 years and causing the worst drought in 35 years in Southern Africa. A weak La Niña and tropical cyclone Dineo, resulting in patches of severe flooding in 2017 in countries such as Mozambique, Namibia and Zimbabwe, followed El Niño. Consecutive failed agricultural harvests, food and water shortages, and subsequent rises in food prices have resulted in a food crisis with consequences felt by all sectors. Historically, humanitarian impact tends to be greater when El Niño follows immediately after La Niña and vice versa, as multiple subsequent shocks erode coping capacities and exacerbate existing vulnerabilities.[51]

In June 2016, the SADC Secretariat – based on the Regional Vulnerability Assessment Analysis – declared that 41 million people had been assessed as food insecure, of whom 21 million were in need of urgent humanitarian assistance, and 2.7 million children were suffering from acute malnutrition. Many countries in the region is already struggling with food insecurities and existing chronic malnutrition. Young children, pregnant and lactating women, the elderly, people living with tuberculosis and/or HIV, and people living in poverty are among the most vulnerable. Nearly half a million drought-related deaths of livestock were reported in Botswana, South Africa, Swaziland and Zimbabwe alone. Public health and disease outbreaks – in particular related to water and sanitation – and a hampered health-care system also pose threats to the affected communities. Disease outbreaks of cross-border nature have also been reported, for example, cholera outbreaks in Zambia and the United Republic of Tanzania, and yellow fever spreading in Angola and into the Democratic Republic of the Congo. Migration patterns from rural to urban areas, in search of alternative livelihoods in cities and towns, as well as across borders, have been observed. The protracted humanitarian situation reveals some of the disaster risk challenges faced by the region.[52]

According to the EM-DAT international disaster database,[53] a total of 530 disasters were recorded between 2000 and 2016. Disasters on EM-DAT are defined based on one of the four criteria: 1) 10 or more people dead; 2) 100 or more people affected; 3) the declaration of a state of emergency; and 4) a call for international assistance.

[49] UNDP Namibia, "PIMS 4711: Scaling up community resilience to climate variability and climate change in Northern Namibia, with a special focus on women and children". Available from https://info.undp.org/docs/pdc/Documents/NAM/Prodoc%20Final%20Revised%20SCORE%20Prodoc%20(Updated%20February%205,%202015).pdf

[50] SADC, "SADC Disaster Preparedness and Response Strategy and Fund 2016–2030: Enhancing coordination for effective disaster preparedness, response and resilience", draft (July 2016).

[51] Regional Inter-agency Standing Committee (RIASCO), *RIASCO Action Plan for Southern Africa, May 2016–April 2017 (2016);* SADC, *Regional Humanitarian Appeal June 2016* (Gaborone, 2016).

[52] Ibid.

[53] D. Guha-Sapir, R. Below and Ph. Hoyois, EM-DAT. Available from www.emdat.be

Historical data on disaster events that occurred in the SADC region, 2000–2016

Disaster type (2000–2016)	Occurrence	Total deaths	Injured	Affected	Homeless	Total affected[a]	Total damage (USD)[b]
Drought	46	576	0	73,842,258	0	73,842,258	2,108,000,000
Earthquake	15	66	763	169,286	26,395	196,444	515,000,000
Epidemic	161	21,101	27,476	1,310,874	0	1,338,350	0
Extreme weather	2	33	20	0	0	20	0
Flood	198	3,974	2,666	15,721,948	417,745	16,142,359	2,424,204,000
Insect infestation	2	0	0	2,300,000	0	2,300,000	0
Landslide	6	104	7	0	1,460	1,467	0
Storm	87	1,746	7,005	4,540,611	850,296	5,397,912	858,722,000
Volcanic activity	2	200	400	0	110,000	110,400	9,000,000
Wildfire	11	156	548	59,503	8,745	68,796	440,000,000
Total	**530**	**27,956**	**38,885**	**97,944,480**	**1,414,641**	**99,398,006**	**6,354,926,000**

Source: D. Guha-Sapir, R. Below, Ph. Hoyois, Emergency Events Database (EM-DAT). Available from www.emdat.be

Notes: a Total sum of *injured* (people suffering from physical injuries, trauma or an illness requiring immediate medical assistance as a direct result of the disaster), *homeless* (people whose house is destroyed and therefore need shelter after a disaster event), and affected (people requiring immediate assistance during a period of emergency, that is, basic survival needs such as food, water, shelter, sanitation and immediate medical assistance).

b Estimated damage to property, crops and livestock. Value is given in US dollars, corresponding to the damage value at the year/moment of the disaster event (i.e. not adjusted value).

During the same period, the list of disaster events includes floods, epidemic outbreaks, storms and droughts, as well as earthquakes, wildfires, landslides, extreme weather, volcanic activity and insect infestations. Important to note is that the list is not exhaustive but rather gives an indication of the main hazards historically affecting Southern Africa.

Of the recorded disasters, **drought** is the hazard in the SADC region that affects the greatest number of people. Drought is commonly a slow-onset event emerging based on below-average rainfall or as a result of protracted dry spells. The SADC countries have outlived four major droughts in modern history – 1991–1992, 1994–1995, 2000–2001 and 2005–2006 – all of which were results of ENSO in the Pacific Ocean. The risk of drought is further exacerbated by land degradation, desertification and climate change.[54]

The most frequently occurring disaster in Southern Africa is **flooding**, defined as "temporary inundation of land that is not normally under water", to a large extent, owing to overflowing of large river basins like the Zambezi and Limpopo as well as heavy rains or tropical cyclones. In 1999–2000, Southern Africa experienced one of its worst floods, causing a transboundary regionwide disaster situation with more than 1 million people affected, half of whom were displaced as a result. Land degradation and erosion of soil and other natural flood protection, as well as poor water drainage systems, increase the risk of flooding further.[55]

[54] See, for example: United Nations Economic Commission for Africa (UNECA), *Assessment Report on Mainstreaming and Implementing Disaster Risk Reduction in Southern Africa* (Addis Ababa, 2015).

[55] Ibid.

After drought and floods, **storms** and **cyclones** are the disasters that affect most people in the SADC region. Storms, or tropical cyclones, originate from the south-west Indian Ocean and peak between the months of October and April. Cyclones often go hand in hand with heavy rainfall and subsequent flooding events. Storms can be brutal with strong winds of over 2,000 km/hour, causing death and damage to livelihoods and property. In the SADC, Madagascar is by far the most at-risk country and experiences the highest frequency of storm disaster events. Mozambique is also largely affected.[56]

Other natural hazards of defining character in Southern Africa include **landslides**, which are a form of mass movement. Although historically a landslide is not a frequently occurring or high-impact disaster, climate change, environmental degradation and land degradation may cause an increase in incidences of landslides. Rapid urbanization and the emergence of informal settlements also present a risk factor. Poor urban planning, poor housing options often built in hazard-prone areas or as temporary makeshift shelters, and inadequate water drainage systems are all vulnerability factors that increase the risk for landslides.[57]

Earthquakes and **volcanoes** are the main geophysical hazard in the SADC region. Particularly vulnerable to this are countries along the East African Rift Valley and on the Indian Ocean islands. An earthquake is a sudden movement of the earth's surface that causes shaking or trembling of the ground. This can result in quite an extensive damage, depending on population density as well as the infrastructure and property in the epicentre and surrounding affected areas. Earthquakes at sea can cause tsunamis. In recent history, Malawi experienced an unexpected earthquake in 2009 caused by movement within the East African Rift Valley, displacing over 15,000 people. Active volcanoes in the SADC region are found in the Democratic Republic of the Congo, the United Republic of Tanzania and South Africa. Mount Nyiragongo and Mount Nyamuragira in the Democratic Republic of the Congo are among the most active in Africa, and eruptions of which have caused large-scale displacement as well as loss of lives and livelihoods and economic damage. In 2002, Mount Nyiragongo displaced over 400,000 people.[58]

Wildfire is a disaster type associated with dry spells and also closely related to environmental degradation such as deforestation, pollution and mining. Wildfires – caused by natural events or being human-made – have become a more and more frequent phenomenon with negative toll on life and livelihoods. With increased urbanization, the risk of settlement fires is also on the rise.[59]

Epidemic outbreaks in the SADC are not uncommon, with cholera being the number one cause. In 2007, the World Health Organization (WHO) estimated that cholera incidents in sub-Saharan Africa accounted for over 90 per cent of total cases worldwide. In the SADC region, cholera is described as endemic in Angola, Malawi, Mozambique, Zambia and Zimbabwe. Often following flood disasters, epidemic outbreaks occur as compound disasters. As a result of the 2010–2011 and 2014–2015 floods, cholera cases increased and put cholera and cholera-related disasters on the Southern African hazard mapping. Epidemic outbreaks tend to spread with human mobility, and increased risks are found in border areas with high cross-border movement as well as in areas with high population density, poor public health facilities, and vulnerable population groups such as in urban/peri-urban areas and informal settlements. The refugee camps and other temporary shelters that may be established in times of crisis and following displacement are also at risk of epidemics for the same reasons. Increasingly, epidemic outbreaks are becoming a risk of cross-border nature.[60]

[56] Ibid.
[57] Ibid.
[58] Ibid.
[59] Ibid.
[60] Ibid.

Another compound disaster risk is **food insecurity**, often a secondary cause following floods or drought, adversely affecting the agricultural production. With more than two thirds of the SADC's total population depending on agriculture for food, income and employment, disaster-induced agricultural shocks pose severe risks in the region. This was recognized by the Member States already in 2004 when the Dar-es-Salaam Declaration on Agriculture and Food Security in the SADC Region was adopted with a commitment to "promote agriculture as a pillar in national and regional development strategies and programmes". The Declaration included short-, medium- and long-term goals with a horizon of 2010, including aspects of crop production and crop resilience, water management, sustainable use of natural resources and disaster preparedness.[61] Since 1999, the SADC's Regional Vulnerability Assessment Committee (RVAC) and its national equivalents (National Vulnerability Assessment Committees) have been undertaking vulnerability and food security analyses on a regular basis. In 2002, 2008 and 2015/2016, during the protracted drought situation, the region experienced severe food crises.[62]

In addition to natural disasters, the SADC region has a history of **human-made crises**. The civil war in Mozambique and Angola ended in 1992 and 2002, respectively. During the period 2000–2016, protracted sociopolitical conditions prevailed in Zimbabwe (from 2002 until the present), and forced urban migration/resettlement in 2005/2006.[63] With the growth of densely populated urban areas, in particular in developing countries, **urban violence** is on the rise and has become a defining feature of urbanization. The biggest risks are found in informal settlements without adequate access to basic services, home to almost 1 billion people worldwide; for instance, in sub-Saharan Africa, where approximately 62 per cent of the urban population lives. In the context of rapid urbanization, urban poverty and deprivation of basic needs, tensions between host communities and rural and/or international migrants competing for the same scarce resources are fuelled. Forced eviction, violence, and harassment and abuse are common threats. In 2008 and 2015, South Africa experienced urban violence primarily targeting foreign nationals, known as **xenophobia outbreaks**. In 2008, the violence was targeting black African foreign nationals and poor and disenfranchised South Africans in informal settlements. This resulted in over 100,000 people displaced and even higher numbers of people affected.[64]

Climate change is likely to spur the risk of these natural and human-made hazards further. Diminishing water availability, deforestation, land degradation, desertification and drought, food insecurities and other resource scarcities, unsustainable consumption and waste management will all fuel the impact of climate change and disaster risk in Southern Africa. Population growth and population density, urbanization and socioeconomic vulnerabilities, in combination with climate change, are pushing people to settle, sometimes unplanned, in environmentally hazardous areas.[65]

According to the 2017 Global Climate Risk Index, 1996–2015 ranking, the top three vulnerable countries in the SADC are Madagascar, Mozambique and Namibia. If only looking at the 2015 ranking, Mozambique and Malawi are number one and number three, respectively, globally. The Index, however, does not give a complete picture of the climate change vulnerabilities but is rather an indication of the level of and exposure to extreme weather events based on direct impact experienced historically.[66]

2017 Global Climate Risk Index 1996–2015

Angola	106.67 (119)
Botswana	141.50 (155)
Democratic Republic of the Congo	132.67 (145)
Lesotho	118.83 (134)
Madagascar	42.50 (19)
Malawi	79.00 (80)
Mauritius	103.67 (117)
Mozambique	43.33 (22)
Namibia	69.50 (63)
Seychelles	159.33 (172)
South Africa	83.33 (89)
Swaziland	107.83 (120)
United Republic of Tanzania	103.50 (116)
Zambia	130.17 (143)
Zimbabwe	79.00 (80)

[61] SADC, Dar-es-Salaam Declaration on Agriculture and Food Security in the SADC Region (2004).

[62] RIASCO, *RIASCO Action Plan for Southern Africa*.

[63] A. Holloway et al., *Humanitarian Trends in Southern Africa: Challenges and Opportunities* (Regional Inter-Agency Standing Committee, Southern Africa; Rome, Food and Agriculture Organization of the United Nations (FAO), 2013).

[64] IOM South Africa and UNDP South Africa, "Draft report on project implementation sites (community mapping/profile report): Support to the South African Government to strengthen communities of diversity and peace" (January 2012).

[65] D. Lesolle/University of Botswana, *SADC Policy Paper on Climate Change: Assessing the Policy Options for SADC Member States*, SADC Research and Policy Paper Series 01/2012 (Gaborone, Botswana, SADC, 2012).

[66] S. Kreft, D. Eckstein and I. Melchior, *Briefing Paper – Global Climate Risk Index 2017*.

Already, conflicts over resources, such as fishing in the Zambezi River and the water along the main river basins, have sparked off incidentally. A reduction of arable land, water shortage, and increased incidences of flood and drought disasters are likely to create conflict over scarce resources. Deforestation in the region is causing land degradation and soil erosion, and is increasingly becoming a growing concern as the natural protection features of key flood plains, such as the Zambezi, Kunene, Okavango, Cuando rivers, are eroding. In Seychelles, the protective reef barrier is at risk and the rising sea levels are threatening with environmental damage as well as economic and infrastructure losses in the coastal areas. The heavy reliance on rain-fed agriculture and the dependency of the agriculture sector of approximately 70 per cent of the region's population make Southern Africa particularly vulnerable to changes in the timing and duration of temperatures and rainfall. As such, changing weather patterns are already altering lives and livelihoods, forcing people to consider new livelihoods, pushing more and more people – especially subsistence farmers – into towns and cities, and further contributing to faster urbanization. Already, countries like Botswana are abandoning crop production in favour of bigger settlements and greater economic prospects. Climate variability and weather-related disaster events in the region are expected to continue increasing in frequency and intensity with climate change.[67]

The Southern African hazard profile is as diverse as the region itself, with multiple existing disaster risks as well as the overhanging threat of the impact of climate change. The risk profile of the region is closely related to its development challenges and associated vulnerabilities.

3.3. Development indicators and vulnerability factors in Southern Africa

Physical, economic, social and environmental factors of vulnerability in Southern Africa define the disaster risk management agenda. Human development indicators provide good overviews of development status and challenges that may create, or exacerbate already existing, vulnerabilities. Disasters and their adversities place the SADC Member States at risk, be it through affected populations at the individual level or a more large-scale impact on societies at the national level.

A selection of indicators from the latest UNDP Human Development Report (2016)[68] highlights some of the key development achievements and/or challenges in the region.

The **Human Development Index (HDI)** is a composite index measuring a country's average achievement in terms of three basic dimensions of human development – a long and healthy life, knowledge and a decent standard of living – which are also displayed with the HDI ranking of each country for reference from a global perspective. In addition to human development, different complementary indicators illustrate the development in various areas and with a more in-depth analysis so that it can help identify potential risk factors, vulnerabilities and exposure in relation to prevailing hazards, and at the same time also impact the level of resilience of individuals, communities, and nations to natural disasters and human-made crises. In the SADC, Seychelles and Mauritius are among the countries with high human development; Botswana, South Africa, Namibia and Zambia are in the medium human development bracket; and Swaziland, Angola, the United Republic of Tanzania, Zimbabwe, Madagascar, Lesotho, Malawi, the Democratic Republic of the Congo and Mozambique are among the countries with low human development.

For each country, the HDI table shows **population size** and the proportion of population living in **urban areas**, as defined by the national criteria in respective countries. This gives basic information in relation to potential at-risk populations and a reference to the rural/urban dynamics. Estimates are further elaborated in the sections on migration trends and patterns in the region.

[67] D. Lesolle, *SADC Policy Paper on Climate Change*.
[68] Complete section derived from indicators in UNDP's *Human Development Report 2016*.

Economically, the region comprises a great deal of countries – ranging from upper and lower middle-income countries to low-income and least developed countries. The **GDP per capita** illustrates the gross value generated in the economy, expressed per person. Hence, it gives an indication of the average gross value added at the individual level. Economic growth in the region has been fairly stable, but, in many cases, it has been slowing down in the past years, in particular for those countries affected by recurrent disaster events. Economic growth also goes hand in hand with labour market opportunities and labour productivity. The **unemployment** level in a country gives information about the segment of the labour force aged 15 years and above that is available to the labour market and actively seeking opportunities but excluded from job opportunities such as paid labour or self-employment options. In the SADC, Lesotho, Swaziland, Namibia, South Africa and Mozambique all have unemployment rates higher than 20 per cent. Important to remember is that unemployment levels only reflect the formal labour market and not the informal sector, which is of great significance in many countries in Southern Africa. The de facto unemployment can therefore be both higher and lower than the value indicator given.

Economic growth in the region has not necessarily translated into employment opportunities and poverty reduction across the board. As a result, a relatively high level of income inequality in many of the countries has emerged. The **Gini coefficient** measures the income inequality in a country – ranging from absolute equality (0) to absolute inequality (1). Noteworthy are the middle-income countries and stronger economies such as Botswana, South Africa and Namibia in relation to their relatively high income inequality rates (Gini coefficients of 0.6 and higher). The Gini coefficient can also be understood as a measurement of relative poverty. Countries with low income inequality can therefore still suffer high poverty in absolute terms, only that it is not reflected in the Gini coefficient. The Democratic Republic of the Congo, the United Republic of Tanzania and Zimbabwe are examples of such countries in the SADC region. The same low value indicator can be recorded for countries with more evenly distributed wealth such as Mauritius.

In terms of disaster risk reduction, economic development contributes to increased resilience as a stable economy helps diversify risk and creates options and opportunities to avert risk. Uneven economic development or income inequality creates segments of the population with less capacity to diversify risk and thus more vulnerable to external shocks such as natural disasters.

The **Multidimensional Poverty Index (MPI)** highlights aspects of social sustainability in complement to the monetary understanding of poverty and reflects overlapping deprivations suffered by individuals at the same time (based on the HDI dimensions of health, education and standard of living). The table shows the percentage of the population that is living with a deprivation of 33 percent or more as well as the percentage of the population living below the international poverty line of USD 1.90 purchasing power parity (PPP), which, in some countries (e.g. Mozambique, the Democratic Republic of the Congo, Malawi, Madagascar) reach as high as 70 per cent and above. A deprivation of basic development factors means a greater vulnerability to hazards and risks. Globally, it is estimated that 1.5 billion people live in multidimensional poverty and 900 million people are living on the brink of poverty with risk to fall back into poverty in the event of shock (financial, natural or otherwise). Countries with high multidimensional poverty levels – including the SADC Member States – can use the MPI as a reference indicator for strategic sustainable development initiatives as well as in disaster risk reduction efforts.

To single out two basic indicators of social development, variables for health and education have been extracted. For **education**, the expected years of schooling reveals the number of years of schooling that a school-age child can expect to receive if prevailing patterns of age-specific enrolment rates exist throughout the child's life. In the SADC, the countries at the top are Mauritius, Seychelles and South Africa, followed by Botswana and Zambia who all fall above the world average of 12.3 years of schooling. The United Republic of Tanzania, Mozambique and the Democratic Republic of the Congo are at the bottom ranking. For overall **health** and standard of living, life expectancy at birth indicates the number of years a newborn could expect to live if prevailing patterns of age-specific mortality rates at the time of birth stay the same throughout the infant's

life. Mauritius and Seychelles are the two countries with the highest life expectancy, both above the world-average age of 71.6 years, whereas Swaziland, Lesotho and Angola are SADC countries with an expected life span of less than 53 years. Remarkable is South Africa – a middle-income country with medium human development – which has a life expectancy of 57.7 years, below sub-Saharan Africa's average and well below the life expectancies of other regional comparable countries such as Botswana and Namibia.

From a health perspective, and particularly relevant for Southern Africa, **HIV prevalence** rates can partially explain the life expectancies. They also add another dimension to the HDI and MPI value indicators. In the table, this is shown as the percentage of the population aged 15–49 years living with HIV/AIDS. Prevalence in Southern Africa, which is home to approximately 3.3 per cent of the world's population, accounts for one third of the total HIV prevalence worldwide and thus makes the subregion the HIV/AIDS epicentre in global terms. Among the SADC Member States, HIV prevalence rates in Seychelles, Madagascar, the Democratic Republic of the Congo and Mauritius are below the world-average rate (1.5% of the global population aged 15–49 years are estimated to be living with HIV). In contrast, Swaziland, Lesotho and Botswana all have recorded a prevalence rate of more than 20 per cent of the targeted population in the same age bracket, closely followed by South Africa with 19.2 per cent. The vulnerabilities of this group of persons with specific needs are particularly of concern in terms of risk factors, and, at the same time, they face proportionally greater adversities in terms of health conditions and health-care needs in disasters and times of crisis. For disaster risk reduction and contingency planning, it is important to consider these factors as a way of strengthening preparedness in relation to the needs of affected at-risk populations.

Understanding human development in light of gender and equality between men and women is provided when analysing gender development and gender inequality. The **Gender Development Index (GDI)** gives an indication of the woman-to-man ratio of human development and if development is equal or not. It does, however, not say anything about the actual development level. Absolute equality of human development is indicated by the value 1. In the SADC region, the Democratic Republic of the Congo and Swaziland have the lowest GDI values, below the sub-Saharan Africa average (0.877). Namibia has the highest level of gender development, at 0.986, together with some of the most developed countries with high human development. The **Gender Inequality Index (GII)** is another dimension of gendered development and reflects inequality in achievement between women and men. It indicates potential loss in human development based on empowerment, economic inequality and labour market disparities as well as disparities in reproductive health. The GII measures how women are disadvantaged. In Southern Africa, greatest hardship of women is felt in the Democratic Republic of the Congo, Malawi and Mozambique, where inequality levels are below the sub-Saharan Africa average (0.572).

Southern African Development Community development indicators

SADC Member State	2015 population (% urban)	2015 HDI value (rank)	2011 GDP/capita (USD PPP)	2015 unemployment rate (%)	Gini 2010–2015 income inequality	MPI 2005–2015 % in multidimensional povery	Expected years of schooling, 2015	Life expectancy at birth, 2015 (years)	2015 HIV prevalence rate (aged 15–49 years) (%)	2015 gender development and gender inequality
Angola	25,022,000 (44.1%)	0.533 (150)	6,937	7.6	42.7	n.a.	11.4	52.7	2.2	n.a.
Botswana	2,262,000 (57.4%)	0.698 (108)	14,876	18.6	60.5	n.a.	12.6	64.8	22.2	0.984 and 0.435
Democratic Republic of the Congo	77,267,000 (42.5%)	0.435 (176)	737	3.8	42.1	72.5%	9.8	59.1	0.8	0.832 and 0.663
Lesotho	2,135,000 (27.5%)	0.497 (160)	2,517	27.5	54.2	49.5%	10.7	50.1	n.a.	0.962 and 0.549
Madagascar	24,235,000 (35.1%)	0.512 (158)	1,373	2.2	42.7	77.0 %	10.3	65.5	n.a.	0.948 and n.a.
Malawi	17,215,000 (16.3%)	0.476 (170)	1,113	6.7	46.1	56.1%	10.8	63.9	n.a.	0.921 and 0.614
Mauritius	1,300,000 (39.7%)	0.781 (64)	18,333	7.9	35.8	n.a.	15.2	74.6	0.9	0.954 and 0.380
Mozambique	27,978,000 (32.2%)	0.418 (181)	1,116	22.3	45.6	70.2%	9.1	55.5	n.a.	0.879 and 0.574
Namibia	2,459,000 (46.7%)	0.640 (125)	9,801	25.5	61.0	44.9%	11.7	65.1	n.a.	0.986 and 0.474
Seychelles	93,000 (53.9%)	0.782 (63)	25,668		46.8	n.a.	14.1	73.3	n.a.	n.a.
South Africa	55,012,000 (64.8%)	0.666 (119)	12,390	25.1	63.4	10.3%	13.0	57.7	n.a.	0.962 and 0.394
Swaziland	1,287,000 (21.3%)	0.541 (148)	7,930	25.6	51.5	25.9%	11.4	48.9	n.a.	0.853 and 0.566
United Republic of Tanzania	53,470 (31.6%)	0.531 (151)	2,510	3.2	37.8	66.4%	8.9	65.5	4.7	0.937 and 0.544
Zambia	16,212,000 (40.5%)	0.579 (139)	n.a.	10.7	55.6	54.4%	12.5	69.8	12.9	0.924 ans0.526
Zimbabwe	15,603,000 (32.4%)	0.516 (154)	1,688	9.3	43.2	28.9%	10.3	59.2	n.a.	0.927 and 0.540
SADC	311,550,000 (39.1%)	0.574 (avg.)	7,133 (avg.)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sub-Saharan Africa	949,500,000 (37.9%)	0.523	3,493	7.8	n.a.	n.a.	9.7	58.9	5.1	0.877 and 0.572
World	7,346,706,000 (54.0%)	0.717	14,600	5.9	n.a.	n.a.	12.3	71.6	1.5	0.938 and 0.443

3.4. Migration trends and patterns in Southern Africa

The migration trends and patterns in Africa follow those observed worldwide. Intraregional migration in 2015 was 87 per cent, the highest in the world. This means that 87 per cent of international migrants originated from another country located in the same major area on the African continent.[69] Southern Africa is no exception, as it is also characterized by intraregional migration. In 2015, the region received over 4 million migrants, excluding the growing number of irregular migrants from the region as well as countries in Asia, such as Pakistan, Bangladesh, India and China. Since the early post-colonial era, migration trends have included labour migration, refugees and asylum seekers, cross-border displacement and the more recent dynamics of complex mixed migration movement.[70]

Regionally, South Africa hosts the biggest community of international migrants – estimated to be more than 3.1 million (5.8% of the population) – according to 2015 official statistics. The total figure of immigrants is however estimated to be higher due to irregular migration and the undocumented migrants in the country. It is estimated that 1.5 million are from Zimbabwe, which is one of the region's top-sending countries in terms of SADC emigrants. Growing work opportunities in countries like Botswana, Zambia, Malawi, Mozambique and oil-wealth Angola have started to diversify migrant routes and thus changed the status of these countries from countries of origin or mere transit countries to preferred countries of destination. South Africa is however the main destination country, in particular for migrants from East Africa and the Horn of Africa, mainly Ethiopia and Somalia. It serves as a transit point for regional and irregular migration to Europe, the United States and Australia. South Africa, followed by Botswana, has the highest net migration rate in the region, which is defined as the ratio of the difference between the number of inmigrants and the number of outmigrants to the average population, expressed per 1,000 people (2.3 and 1.9, respectively).[71]

The SADC Member States have agreed to work towards "the progressive elimination of obstacles to the movement of persons of the region generally into and within the territories" of the SADC. This is defined in the SADC Protocol on the Facilitation of Movement of Persons that was signed in 2005. Due to inadequate ratifications by the Member States, the Protocol is however not fully operational and visa exemptions are subject to bilateral agreements between countries. In 2014, the SADC Protocol on Employment and Labour was adopted as a step towards greater fundamental rights and social protection granted migrant workers and their families. The operationalization of the Protocol on Employment and Labour is, however, still in the very early stages.[72]

In terms of other people of concern – including refugees, asylum seekers, stateless persons, returnees, IDPs and other persons of concern – the SADC region, according to UNHCR, was host to more than 4.2 million people at the end of 2016. The majority are found in the Democratic Republic of the Congo, the United Republic of Tanzania and South Africa. The SADC is the home of nearly 400,000 refugees. Asylum seekers are not included in this data. The majority live in the Democratic Republic of the Congo, which is centrally located in the region and in proximity to conflicts in, for instance, Central African Republic, and in South Africa, which is the preferred southward country of destination in the SADC region. South Africa and Angola are the only countries in the region that do not have an encampment policy currently in place, allowing unrestricted movement and providing an opportunity for refugees to work and live freely in the two countries. Malawi, Mozambique and Zambia are increasingly becoming alternative countries of destination for refugees. Cross-border movement and intraregional asylum claims have also been registered in recent time. In March 2016, nearly 12,000 Mozambicans were displaced in Malawi. However, most of them have returned since.[73]

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69 UNDP, *Human Development Report 2016*; UN DESA, International Migrant Sock: The 2015 Revision.

70 B. Frouws and C. Horwood, *Smuggled South: An Updated Overview of Mixed Migration from the Horn of Africa to Southern Africa with Specific Focus on Protection Risks, Human Smuggling and Trafficking*, Regional Mixed Migration Secretariat (RMMS) Briefing Paper 3 series, prepared for the Danish Refugee Council (DRC) and the RMMS Horn of Africa and Yemen (2017).

71 UNDP, *Human Development Report 2016*; UN DESA, *International Migrant Sock: The 2015 Revision*.

72 SADC Protocol on Employment and Labour is available from www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---migrant/documents/genericdocument/wcms_379411.pdf

73 UNHCR, "UNHCR statistics: The world in numbers", available from http://popstats.unhcr.org/datavizGT2016/index.html (accessed 20 July 2017); B. Frouws and C. Horwood, *Smuggled South*; ACAPS, "Malawi: Displacement from Mozambique", *Briefing Note*, 10 March 2016, available from http://reliefweb.int/report/malawi/malawi-displacement-mozambique-briefing-note-10-march-2016

Southern African Development Community migration in numbers

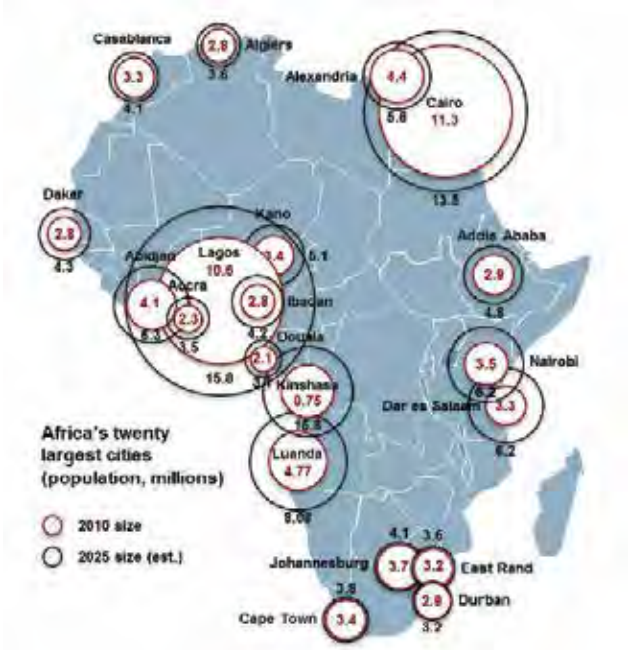
SADC Member State	2015 population	2015 % urban population	2015 international migrant stock (% population)	2007 % SADC immigrants	2007 % SADC emigrants	End-2016 people of concern	2015 refugees
Angola	25,022,000	44.1	106,845 (0.4%)	0.3%	0.7%	45,698	15,474
Botswana	2,262,000	57.4	160,644 (7.1%)	2.6%	1.8%	2,832	2,766
Democratic Republic of the Congo	77,267,000	42.5	545,694 (9.9%)	0.8%	2.8%	3,319,006	119,754
Lesotho	2,135,000	27.5	6,572 (0.3%)	0.0%	7.6%	48	44
Madagascar	24,235,000	35.1	32,075 (0.1%)	0.0%	0.1%	55	12
Malawi	17,215,000	16.3	215,158 (1.2%)	5.5%	3.7%	30,415	5,844
Mauritius	1,300,000	39.7	28,585 (2.2%)	0.1%	0.2%	n.a.	0
Mozambique	27,978,000	32.2	222,928 (0.8%)	9.6%	31.9%	38,534	4,445
Namibia	2,459,000	46.7	93,888 (4.7%)	1.4%	1.9%	3,490	1,519
Seychelles	93,000	53.9	12,791 (13.3%)	0.1%	0.0%	n.a.	0
South Africa	55,012,000	64.8	3,142,511 (5.8%)	58.4%	11.9%	309,342	112,192
Swaziland	1,287,000	21.3	31,579 (2.6%)	0.6%	1.6%	1,123	553
United Republic of Tanzania	53,470	31.6	261,222 (0.5%)	7.5%	1.1%	458,828	90,650
Zambia	16,212,000	40.5	127,915 (0.8%)	2.6%	2.2%	57,209	24,666
Zimbabwe	15,603,000	32.4	398,866 (2.6%)	10.5%	32.5%	10,064	5,397
SADC average	311,550,000	39.1	5,387,273 (1.7%)	n.a.	n.a.	4,276,644	383,316
Sub-Saharan Africa	949,500,000	37.9	18,993,986 (2.0%)	n.a.	n.a.	n.a.	3,638,433
World	7,346,706,000	54.0	243,700,236 (3.3%)	n.a.	n.a.	67,750,000	19,577,474

Forced migration in the region is caused not only by human-made crises but also by the combined effect of disaster events, climate change, and socioeconomic and political conditions. While internal displacement patterns are integral to the region and affect thousands every year, the number of IDPs in Southern Africa is relatively low and displacement is usually short-term, owing to patterns of regular temporary movement from high-risk to low-risk hazard areas as an adaptation strategy of at-risk populations in countries such as Namibia and Botswana. Malawi did, however, experience severe floods that displaced over 400,000 people in 2015, placing the country among the top 10 globally in terms of the number of natural disaster-induced displaced population for that year.[74]

Chronic food insecurity and an increasingly unpredictable agricultural production and subsistence farming push people from rural areas into urban areas and increase the number of informal settlers in search of alternative livelihoods and economic prospects. This form of environmental migration tends to be undertaken with a more long-term perspective in mind and is one of the key factors for urban population growth and high rural-to-urban and urban-to-urban migration internally and across borders.[75]

With the rapid urbanization and high urban population growth, in 2010, Southern Africa had six of Africa's 20 largest cities: Luanda (Angola); Dar es Salaam (the United Republic of Tanzania); and Johannesburg, Cape Town, East Rand and Durban (South Africa).[76]

South Africa, Botswana and Seychelles have the highest levels of urban population, all above 50 per cent. Countries like Malawi, Swaziland and Lesotho are, however, well below the sub-Saharan Africa average levels of urbanization, with less than 30 per cent of the population living in urban areas. Urbanization is expected to continue to rise in Africa, and by year 2050, the majority of countries in Southern Africa are projected to have at least half the population living in urban areas, with Angola and Botswana being on top with projected urbanization of 80 per cent.[77]



Source: United Nations Human Settlements Programme (UN-Habitat), *Sustainable Urban Development in Africa* (Nairobi, 2015).

Urbanization in Africa is expected to take place with lower GDP per capita than what has been the case for other regions. This increases exposure of the urban population to poverty, social exclusion, unemployment and inadequate access to basic services, fuelling existing development challenges. UNISDR further estimates that up to 90 per cent of people in urban areas in low-income countries live in unsafe exposed housing. Hence, the vulnerability to external shocks is greater. Important to keep in mind is that life in urban areas already requires economic means to meet the most basic needs of existence, such as water, food and shelter. People living in poverty tend to have a limited ability to build resilience and prepare for and protect themselves from hazards, mitigate the impact of these hazards and recover from disasters.[78]

[74] RIASCO, *RIASCO Action Plan for Southern Africa*.
[75] D. Ionesco, D. Mokhnacheva and F. Gemenne, *The Atlas of Environmental Migration*.
[76] United Nations Human Settlement Programme (UN-Habitat), *Sustainable Urban Development in Africa* (Nairobi, 2015).
[77] UNDP, *Human Development Report 2016; UN-Habitat, Sustainable Urban Development in Africa*.
[78] UN-Habitat, *Sustainable Urban Development in Africa*.

The rapid and unplanned urbanization in Africa, which has given rise to informal settlements and slums, is transforming the continent and the SADC region. Population in the SADC is projected to increase from about 250 million in 2015 to 550 million in 2050, the majority of whom will be living in urban areas. The new wave of urbanization and the urbanization of disaster risks unfolding in the region is thus demanding holistic disaster risk reduction and development planning. Urbanization that allows for social exclusion may leave long-term traces of income inequality and development challenges within the urban space. The diversity of inhabitants in urban areas and the variability in vulnerabilities and specific needs of at-risk populations and marginalized groups require urban planning and minimum standard living conditions that go hand-in-hand with resilience-building and sustainable development. Urban expansion and its effects on the environment calls for integral climate change adaptation. Here, national and local governments have a key responsibility to address urban development and disaster risk challenges. Efforts are needed at the national level by Member States as well as through bilateral agreements, cross-border cooperation and regional partnerships.[79]

3.5. Disaster risk management and governance in Southern Africa

Disaster risk governance and disaster risk management structures vary across the region and depend mainly on national systems in place as well as on assistance from international organizations and cooperating partners. Disaster risk reduction is a priority in Southern Africa as well as for the greater African continent. In 2004, with the continued incidence of disaster events as well as the increased number of affected people and economic losses impeding the sustainable development in Africa, the Africa Regional Strategy for Disaster Risk Reduction was introduced. The aim of the Strategy was to contribute to development and poverty eradication by linking disaster risk reduction and development efforts more closely. It called for increased political commitment to disaster risk reduction, improved identification and assessment of disaster risks, enhanced knowledge and strengthened governance as well as public awareness of disaster risk reduction and disaster risk management, and integration of disaster risk reduction into emergency response management.[80]

Disaster risk management in the SADC region builds on the goals of the Strategy for the entire African continent. As such, the SADC Secretariat has initiated efforts to strengthen the region's preparedness for and response to disaster risk as a whole, as well as in support of national efforts by Member States. In 2007, the SADC established a Disaster Risk Reduction Unit to coordinate regional preparedness and response programmes for transboundary hazards and disasters.[81] The SADC Disaster Preparedness and Response Strategy and Fund 2016–2030[82] (hereinafter referred to as the Disaster Preparedness and Response Strategy) has been developed in accordance with the Sendai Framework priorities; it builds on the humanitarian principles of humanity, impartiality, independence and neutrality to affected populations. The main focus is on the coordination of preparedness, response and recovery action in the region. The Disaster Preparedness and Response Strategy identifies population, urban development and economic growth as opportunities for the region, but it also recognizes that these factors can increase the region's exposure to hazards and risk of disaster and subsequent population displacement, loss of lives and livelihoods, and economic damage. Intraregional migration and cross-border movement, climate change and environmental degradation also pose transboundary threats. Hence, a regional approach is necessary.

The primary responsibility for protecting and assisting the affected populations still lies with Member States within their respective territories. Solidarity within the region and with people in need of humanitarian assistance is emphasized. The vision of the Disaster Preparedness and Response Strategy is to gradually strengthen the SADC's formal role and responsibilities as well as the regional capacities, aiming to build "a culture of safety and disaster resilience by strengthening

[79] IFRC, *World Disaster Report 2010*; African Development Bank Group, "The Bank Group's urban development strategy: Transforming Africa's cities and towns into engines of economic growth and social development".
[80] African Union, *Africa Regional Strategy for Disaster Risk Reduction* (2004).
[81] SADC Disaster Risk Reduction Unit, see www.sadc.int
[82] SADC, "SADC Disaster Preparedness and Response Strategy and Fund 2016–2030".

the preparedness and response for early recovery in the SADC region by 2030". Resilience is recognized as multi-stakeholder, multisectoral and in need of holistic disaster risk reduction initiatives including intertwining humanitarian and development approaches. The priorities of the Disaster Preparedness and Response Strategy are to increase the understanding of risk and disaster risk management systems, strengthen disaster preparedness and response planning, and establish a regional fund. The emerging challenges and specific characteristics of urban disaster risk and resilience are not particularly addressed.

The Disaster Preparedness and Response Strategy, developed in line with the Sendai Framework, is a first step towards a more regional disaster risk management framework. Its link to development is referred to in the SADC's Regional Indicative Strategic Development Plan for 2002, addressing the development agenda, including poverty eradication; combating of HIV/AIDS; increased gender equality; sustainable food security; and human, social, and environmental development. The disaster risk management strategy is, however, still merely conceptual, although it calls Member States to undertake a set of key activities under each priority area. It identifies actions needed for greater harmonization and a common understanding of risk reduction and resilience-building. Deployment of a roster of humanitarian experts and use of surge capacity are also envisaged, as well as regional capacity-building. Nonetheless, at the regional level, the implementation of disaster risk management is currently lacking and remains a major gap.[83]

The Disaster Preparedness and Response Strategy has limited consideration of migrants' specific vulnerabilities, needs and rights as well as the preparedness of the Member States' disaster risk management system in terms of addressing such needs. Explicit consideration of cross-border migration is also missing other than the Member States' responsibility for and solidarity with the "affected populations". The link between disaster risk management and migration is instead mentioned in the 2010 Revised Edition of the Strategic Indicative Plan for the Organ on Politics, Defence and Security Cooperation, but with more specific focus on irregular migration as well as mentions of refugees and displaced populations. The Plan acknowledges the need for aligned plans and policies as well as enhanced regional capacity in respect of disaster risk management for political, State and public security.[84]

In complement to the regional disaster risk management framework, other regional, multilateral and bilateral initiatives still exist. Four examples of different types of regional cooperation linked to risk reduction and resilience are the creation and work of the SADC Vulnerability Assessment Committee, the COMESA–EAC–SADC Tripartite Programme on Climate Change Adaptation and Mitigation in Eastern and Southern Africa, the Technical Centre for Disaster Risk Management, Sustainability and Urban Resilience (DiMSUR), and the Zambezi River Basin Initiative in response to the transboundary disaster risks and challenges of the Zambezi River.

The RVAC is an SADC committee created with the purpose of analysing capacity to deal with hazards at the individual level. Its focus is primarily on food security. The RVAC has national equivalents at the Member State level (i.e. NVACs), which annually conduct vulnerability assessments and analysis in a joint effort with multiple stakeholders.[85]

The COMESA–EAC–SADC Tripartite is a regional initiative that acknowledges the challenges posed by climate change in East and Southern African regions and aims to mainstream adaptation and mitigation into development planning to build economic and social resilience. The initiative is primarily linked to the agriculture and forestry sectors as well as other land uses. While the main focus is on climate-smart agriculture, reference is also made to the vulnerability of populations in Africa as well as "longer-term strategies for alleviating chronic poverty and building climate-

[83] SADC, *SADC Regional Indicative Strategic Development Plan* (2002); SADC, "SADC Disaster Preparedness and Response Strategy and Fund 2016–2030".

[84] SADC "SADC Disaster Preparedness and Response Strategy and Fund 2016–2030".

[85] For more information on the Regional Vulnerability Assessment Committee (RVAC), see www.sadc.int/sadc-secretariat/directorates/office-deputy-executive-secretary-regional-integration/food-agriculture-natural-resources/regional-vulnerability-assessment-analysis-programme-rvaa/ (accessed 20 July 2017).

resilient livelihoods based on an increasing understanding of trends and future impacts of climate change".[86]

The Zambezi River Basin Initiative was created as a partnership programme between Red Cross Societies in Angola, Botswana, Malawi, Mozambique, Namibia, Zambia and Zimbabwe. Its goal is to reduce the impact of disasters on the communities living along the Zambezi River basin. Of the approximately 32 million people living along Zambezi River, the Initiative targets the most vulnerable groups in terms of climate change.[87]

In 2014, the Government of Madagascar, the Government of Malawi, the Government of Mozambique and the Union of Comoros established the DiMSUR technical centre. The purpose of the centre is to develop capacities for reduced vulnerability and building resilience of communities to natural and other hazards in Southern Africa. The poor level of preparedness and capacity to reduce risks, build resilience and manage disasters at the municipality level is recognized, and, subsequently, DiMSUR serves as a catalyst for targeted resilience action planning and supports local authorities to become drivers in disaster risk management. DiMSUR is a subregional initiative supported by partners such as UN-Habitat, UNISDR and the SADC.[88]

In addition to national and regional initiatives, cooperating partners, the United Nations, and international and humanitarian organizations also support disaster risk management in Southern Africa in various capacities and according to mandates and the division of sector-specific responsibilities.

In conclusion, the disaster risk management structure at the SADC level is still in its early stages. Primary disaster preparedness, planning, response and recovery are as such undertaken as national initiatives, in response to country contexts and existing hazards, vulnerabilities and national disaster risk management frameworks.

[86] COMESA–EAC–SADC Tripartite, *Programme on Climate Change Adaptation and Mitigation in the Eastern and Southern Africa (COMESA-EAC-SADC) Region* (2011).

[87] IFRC Southern Africa, *Zambezi River Basin Initiative*. Available from www.ifrc.org/PageFiles/113731/Zambezi_River_Project_LR3_0.pdf

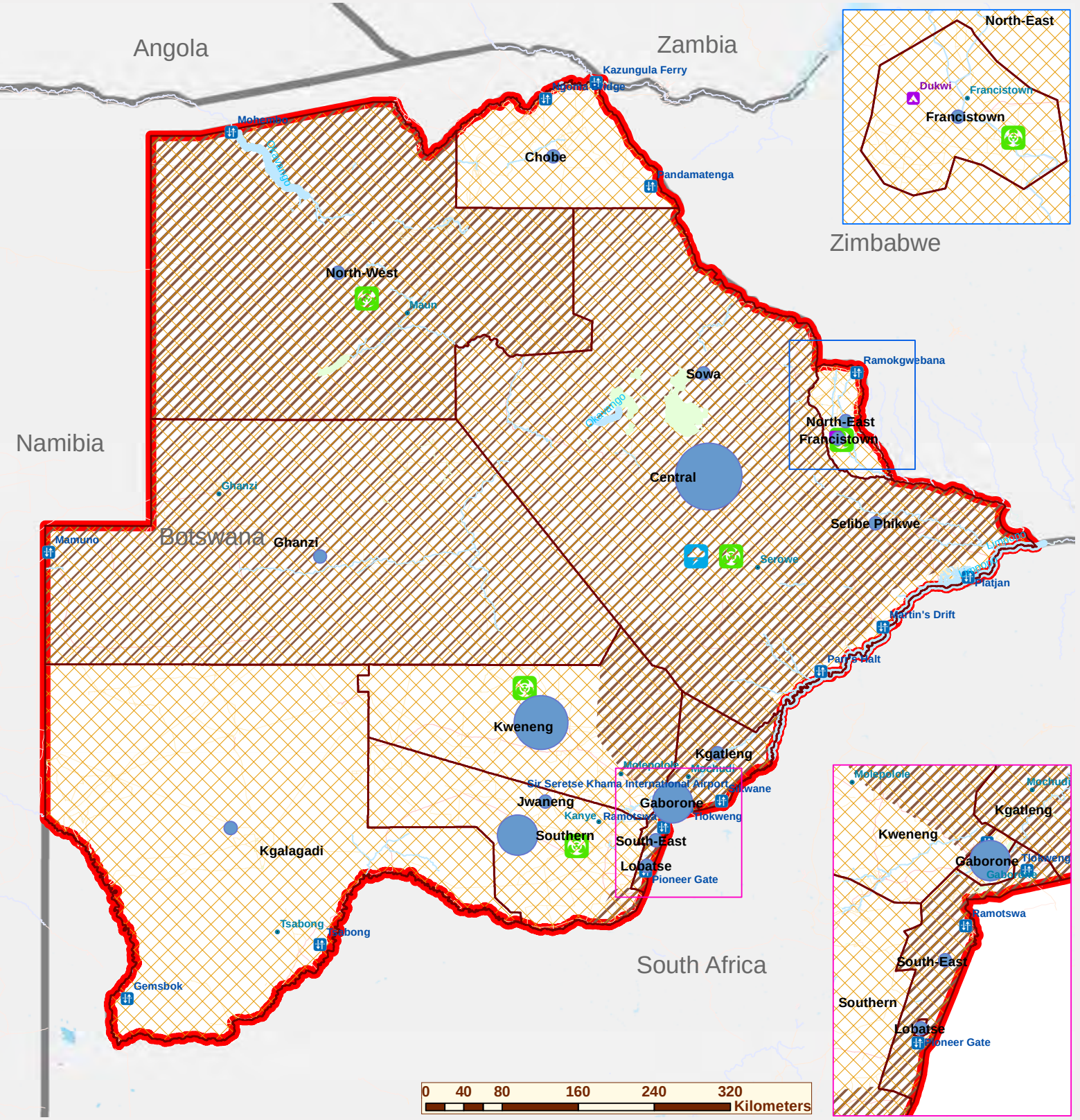
[88] DiMSUR, *DiMSUR Strategic Plan 2016–2026* (Maputo, DiMSUR; Nairobi and Maputo, UN-Habitat, 2015).

Displaced persons in Ba-an Camp in Phalombe District. © IOM

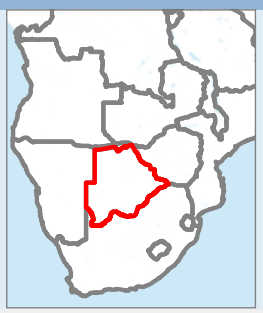
Emergency shelters constructed by IOM in one of the camps in Nsanje. © IOM

4. Country chapters

4.1. Botswana



BOTSWANA
HAZARDS AND VULNERABILITY



Legend

ADM0 Country Level
ADM1 District_Town Level
Southern Africa Country
City
Border Crossing
Refugee Camp
Cross Border River
Waterways
Waterbodies
Natural Feature
Roads
Flood Prone Area
Drought Prone Area

Population Density

0–100,000
100,001–150,000
150,001–300,000
300,001–400,000
400,000+

Botswana Hazards Impacts (From 2000–2016)

Hazard Type	People Affected
Drought	
Storm	400
Epidemic	22,279
Flood	152,602

Hazard profile and history of disaster events

Botswana, according to INFORM 2017 Risk Index,[89] is the third least at-risk country in the SADC (with a total index value of 2.9), after Mauritius and Seychelles. The Risk Index refers to the country's exposure to drought and floods as the primary hazards, and considers the levels of vulnerability that increase the risk, as well as the absence of coping capacity in terms of disaster risk management.

The National Disaster Risk Management Plan developed by the National Disaster Management Office (NDMO) of Botswana identifies hazards such as floods and drought as well as risks of storms, fires, earthquakes, epidemic outbreaks, and civil unrest and human-made crises associated with migration.[90]

According to the historical data on disaster events in Botswana, recorded on the EM-DAT database,[91] during the period 2000–2016, a total of 10 disaster events occurred in the country.

Year	Disaster type	Disaster subtype	Locations
2000	Flood	Riverine flood	Boteti, Bobirwa, Mahalapye, Palapye, Selibe-Phikwe, Serowe areas (Central District); Francistown (North-East District); Gabarone; Tlokweng, Lobatse, Mabutsane areas (South-East District); Kgatleng District; Kgalagadi District; Kweneng District
2004	Flood	Riverine flood	Ngamiland District
2006	Epidemic	n.a.	Francistown (North-East District); Palapye, Boteti and Tutume areas (Central District); Bobirwa and Selibe-Phikwe (North East District); Kweneng East (Kweneng District); Kanye (Southern District); Lobatse (South-East District); Mahalapye (Central District); Goodhope (Southern District)
2008	Epidemic	Bacterial disease	Ngamiland District; Central District; Kweneng District
2009	Flood	Riverine flood	Boteti, Bobirwa, Letlhakane, Mahalapye, Serowe, Palapye and Tutume areas (Central District); Molepolole, Sojwe and Leologane areas (Kweneng District); Chobe and Ngamiland Districts
	Storm	Convective storm	Mahalapye (Central District)
2011	Flood	Riverine flood	Chobe and Ngamiland Districts
2013	Flood	Riverine flood	Dukwi, Lephashe, Zoroga, Tsokootshaa, Nata, Tutume, Gweta, Senete, Ditladi, Masunga, Marapong, Sowa, Natale, Mandunyane and Borolong villages (Tutume Sub-district)
2015	Drought	Drought	Entire country

[89] INFORM country risk profiles for 191 countries: Botswana. Available from www.inform-index.org/Countries/Country-profiles/iso3/BWA (accessed 27 May 2017).

[90] Government of Botswana, National Disaster Management Office (NDMO)/Office of the President, National Disaster Risk Management Plan (2009).

[91] D. Guha-Sapir, R. Below and Ph. Hoyois, EM-DAT. Available from www.emdat.be

In Botswana, floods are the most frequently occurring disaster event, mainly caused by heavy rains and primarily affecting local communities in flood-prone areas. Disasters have historically been concentrated along rivers such as the Zambezi River, Okavango River and its delta, Boteti River and Limpopo River. Storms, typically emanating from tropical cyclones in the region, also manifest as heavy rains and flood disasters. With urbanization, more developed areas are turning into flood-risk locations in the absence of functioning water drainage systems. Urban areas such as Gabarone, Francistown, Molepolole, Selebi-Phikwe and Maun – the five biggest and most population-dense towns in Botswana – have already been affected by the incidence of flood disaster events.[92]

A recent national report outlining disaster events in 2016/2017 – not included on the EM-DAT database – elaborates on the impact of the experience of floods during the past year. It identifies affected districts, including the most heavily affected locations, namely, Tutume, Mahalapye, Serowe and Letlhakane. New and complementary to the EM-DAT list of locations are Gantsi, Letlhakeng, Moshupa, Ramotswa, Tonota and Mogoditshane, which were historically spared by major flood disasters. Some areas were hit by multiple or consecutive flood events during the year; as a result, affected populations lost their houses and were displaced, agricultural output was negatively impacted and purchasing power eroded, and key infrastructure such as roads, bridges and schools were damaged. To address the specific challenges of urban areas – such as damage to urban communities and informal settlements experiencing annual flooding due to heavy rains and inadequate water drainage systems (e.g. outside Sue Town) – the report notes that a more permanent solution and a comprehensive master plan are needed. The report recognizes that however desirable development may be, it is necessary that it goes hand-in-hand with disaster risk reduction measures.[93]

Drought is a frequent phenomenon in Botswana and has been so since time immemorial. In terms of hazard, the whole country is prone to drought owing to the semi-arid environment, recurrent dry spells and desertification. Reliance on cattle and livestock for livelihood makes the population vulnerable to drought, as overgrazing and depletion of an already fragile ecosystem has an impact on the environment. In 2015/2016, the country received normal to significantly below-normal rainfall in combination with high temperatures. The whole country was affected and suffered primarily in terms of food insecurity – the effects of which the population is still feeling. According to the SADC Regional Humanitarian Appeal, launched in July 2016, nearly 57,500 people were affected in total and 7 per cent of the rural population was then reported food insecure as a result – owing to agricultural food deficit, livestock mortality and increasing food prices.

Other hazards in Botswana include the epidemic, which is a hazard on its own and also tends to occur as a compound disaster. The main epidemics include malaria outbreaks as well as cholera, typhoid and other waterborne diseases, which are generally associated with flooding.[94]

The National Disaster Risk Management Plan of the Government also refers to wild land fires resulting from natural causes or human-made activities as commonly occurring during the dry months of April to November. These mainly affect the communal grazing areas. The risk of urban settlement fires is also on the rise as a result of urbanization and human-made fires spreading in densely populated settlements.[95]

The potential for earthquakes in Botswana exist although extremely rare and historically with minor impact on population and society. In April 2017, an earthquake with epicentre north-west of the capital Gabarone struck Botswana and was felt in neighbouring Southern African countries. The quake assumed to emanate from the movement in the tectonic plates shifting in the East African Rift Valley. No casualties or major damage was recorded, although the magnitude of 6.5

[92] Government of Botswana, NDMO/Office of the President, National Disaster Risk Management Plan.
[93] Government of Botswana, NDMO/Office of the President, *Disaster Management Report 2017-05-17 – Drought and Household Food Security Outlook* (2017).
[94] Government of Botswana, NDMO/Office of the President, National Disaster Risk Management Plan.
[95] Ibid.

was said to be the largest since 1952. As the country develops further and urban and population-dense areas emerge, coupled with poor housing options, greater exposure and damage owing to earthquakes are a potential risk.[96]

With increased irregular migration and higher numbers of undocumented migrants as well as asylum seekers in search of refuge and future prospects in Botswana, at the same time considering the small population size and being cognizant of the country's existing development challenges, civil unrest and human-made crisis are also factored into the National Disaster Risk Management Plan. Some minor incidences of xenophobia have also been reported in recent years.[97]

The long-term effect of climate change is attributed to a number of adversities. Almost two thirds of the country is covered by the Kalahari Desert. Botswana shares the Limpopo, Okavango, Orange and Zambezi river catchments with neighbouring countries, and the country's water shortages imply a dependency on these countries for Botswana's domestic water needs. Expected changes in weather patterns are thus likely to increase the country's vulnerability further. Unpredictable rainfall patterns and water scarcity, dry spells and desertification, and crop diseases put the agricultural production at risk, mainly exposing rural areas and subsistence farmers to unsustainable agricultural livelihoods, food insecurity and health vulnerabilities. This is likely to fuel rural-to-urban migration patterns and contribute to urban population growth.[98]

The Botswana hazards and vulnerability map depicts some of the above. As illustrated, the whole country is vulnerable to drought. The flood-prone areas stem from some of the main rivers in the country. Botswana hosts four of the region's transboundary rivers – Okavango, Orange, Limpopo and Zambezi – all four causing frequent flood disasters. Locations with high populations, such as Gaborone, the Central District and the Kweneng District, face multiple and overlapping hazards. In some areas, several risk factors melt together – for instance, in Francistown, a drought-prone province bordering Zimbabwe and one of the country's busiest border posts, with history of epidemic outbreaks, and host of the country's only refugee camp.

Hazard and exposure are exacerbated by vulnerability factors at the national level and among the population.

Development indicators and vulnerability factors

Botswana HDI 2015: 0.698 (Rank: 108)		
Population, 2015 (Urban %) Total: 2,262,000 57.4%	GDP/capita PPP USD, 2011 14,876	Unemployment, 2015 18.6%
Gini, 2010–2015 60.5	Multidimensional poverty 2005–2015 n.a.	Education, 2015 Expected years of schooling: 12.6 years
Health, 2015 Life expectancy: 64.8 years	HIV prevalence (ages 15–49), 2015 22.2%	Gender development and gender equality, 2015 0.984 and 0.435

[96] Ibid. See also: I. Akwei, "Botswana hit by 6.5 magnitude earthquake after tremor in South Africa", *Africa News* (4 April 2017). Available from www.africanews.com/2017/04/04/botswana-hit-by-65-magnitude-earthquake-after-tremor-in-south-africa/

[97] Government of Botswana, NDMO/Office of the President, National Disaster Risk Management Plan.

[98] D. Lesolle/University of Botswana, *SADC Policy Paper on Climate Change*; Government of Botswana, "Communication on intended nationally determined contribution for the development of the National Adaptation Plan on Climate Change", available from www4.unfccc.int/ndcregistry/PublishedDocuments/Botswana%20First/BOTSWANA.pdf

Botswana HDI 2015: 0.698 (Rank: 108)		
International migrant stock, 2015 (% of population) 160,644 (7.1%)	% of SADC immigrants, 2007 2.6%	% of SADC emigrants, 2007 1.8%
People of concern, end of 2016 2,832	Refugees, 2015 2,766	IDPs, 2010–2015 (new displacement) 3,450

Sources: UNDP, *Human Development Report 2016: Human Development for Everyone* (New York, 2016).

UN DESA, *Trends in International Migrant Stock: The 2015 Revision*, UN database, POP/DB/MIG/Stock/Rev.2015 (New York, United Nations, 2015).

UNHCR, "UNHCR statistics: The world in numbers". Available from http://popstats.unhcr.org/datavizGT2016/index.html (accessed 20 July 2017).

Internal Displacement Monitoring Centre (IDMC), "IDMC global figures 2016: New displacements". Available from www.internal-displacement.org/database/ (accessed 20 July 2017).

Oxford Policy Management, "Developing financing mechanisms to support the implementation of the draft ´Policy Framework for Population Mobility and Communicable Diseases in the SADC Region´: Situational analysis", unpublished (March 2015).

Botswana[99] is ranked as a country of medium human development. It is classified as an upper middle-income country and, over the past decades, has had one of the fastest annual economic growth rates in the world. Its population is small and the country has just over 2 million inhabitants.

As Botswana has been one of Africa's poorest countries prior to independence and before the extraction of diamonds and the mining boom, its economic growth has been uneven and not yet trickled down to all parts of the population. The country has today one of the region's – in fact, one of the world's – highest levels of income inequality, measured by the Gini coefficient (60.5). Botswana's unemployment is also among the higher in the SADC region (18.6%) and well above both world and sub-Saharan Africa average rates. Measures of multidimensional poverty do not exist for Botswana. According to estimates from the World Bank, poverty rates are just over 19 per cent across the country, with significantly higher rates especially in rural areas. This can, in part, explain the economic disparities between the rich and the poor, as well as between rural and urban areas. The push for rural-to-urban migration and rapid expansion of main urban areas has grown since Botswana's independence in 1966, now with the region's second highest urbanization rate of 57.4 per cent.

For education, expected years of schooling is 12.6 and is thus in the top five at the SADC level. Overall health, in this case understood as expected life expectancy, stands at 64.8 years, which ranks Botswana below countries with lower GDP per capita and HDI rank, such as Madagascar and the United Republic of Tanzania. Life expectancy has in fact been falling in Botswana, explained in part by the country's HIV prevalence rate of 22.2 per cent. In light of this, Botswana is facing great challenges in terms of mortality rates, young-age dependency and reduced economic productivity within the working-age population.[100] The gender development and gender equality indicators reveal a fairly even ratio between men and women when it comes to overall human development (0.984) and a world-average inequality level (0.435).

[99] Section derived from: UNDP, *Human Development Report 2016*; World Bank, Overview section, "The World Bank in Botswana", available from www.worldbank.org/en/country/botswana/overview#1 (accessed 27 May 2017).

[100] UNECA, *Assessment Report on Mainstreaming and Implementing Disaster Risk Reduction in Southern Africa*; World Bank, Overview section, "The World Bank in Botswana", available from www.worldbank.org/en/country/botswana/overview#1 (accessed 27 May 2017).

Migration trends and patterns

Cross-border movement and intraregional migration in Southern African are increasing in magnitude. Likewise, socioeconomic inequality, as well as conflict, is resulting in increased migratory flow, which has also affected Botswana. Botswana's migration profile has changed in character since the country gained independence in 1966 – from a country of origin to a transit country, and, recently, it has been transforming into a preferred country of destination, attracting skilled labour migrants to the mining and construction sectors, as well as refugees, asylum seekers and undocumented migrants entering the country through clandestine channels.[101]

It is estimated that approximately 160,000 international migrants reside in Botswana, equaling 7.1 per cent of the country's population, the highest proportion in the SADC. In 2015, the country hosted nearly 2,800 people of concern.[102] Estimates of irregular migration are, however, not certain and tend to vary widely depending on the source. The majority of migrants – documented and undocumented – are from the SADC region, predominantly Zimbabwe. Some of these have Botswana as their preferred country of destination, while others are merely passing through in transit towards the end destination South Africa.[103] It is also a source, transit and destination country in terms of trafficking in persons, classified as a Tier 2 country in the US Department of State *Trafficking in Persons Report June 2016*.[104]

The country has long been "open" to migration with unrestricted entry for most nationals from the region. With the increase in irregular migration, the challenges remain in terms of how to best manage the migration flows and curb irregular entry. In recent years, this has translated into stricter border control and border security, including building a 500-kilometre electric fence along the borderline to Zimbabwe. Amendments to Botswana's Immigration Act of 1966 introduced an increase in punitive measures against undocumented migrants, making it illegal to travel without adequate documentation as well as to assist any undocumented persons. Current migration policy dialogue recognizes the complex challenges of regulation and security of a country in terms of migration as well as responding to humanitarian needs. No country can do it alone, as the nature of international migration affects all countries in the world. While providing for some restrictions in immigration policies, protection of the rights of all migrants, in particular vulnerable groups, should also be addressed.[105]

Internal migration is high and still increasing, in part fuelled by rural poverty and also owing to the environmental effects of climate change.

Although the population faces recurrent risk of disaster-induced displacement, displacement data suggests a low number of IDPs in Botswana. Temporary migration between high- and low-risk areas is applied as a risk reduction measure, while complete abandonment of hazardous areas and rural-to-urban migration is increasing as a more permanent adaptation strategy applied by at-risk populations. This has resulted in rapid urbanization and expansion of main urban centres such as Gabarone, Francistown, Kweneng East and Selebi-Phikwe. Rural roots, however, still remain strong. By 2050, Botswana is projected to have one of the highest urbanization rates in Africa.[106]

[101] K. Lefko-Everett, "Botswana's changing migration patterns", Migration Policy Institute (MPI) (1 September 2004). Available from www.migrationpolicy.org/article/botswanas-changing-migration-patterns (accessed 27 May 2017).

[102] UN DESA, Population Division, *Trends in International Migrant Stock: The 2015 Revision*.

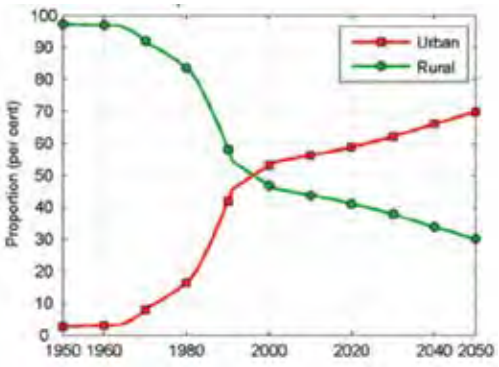
[103] C. Horwood, *In Pursuit of the Southern Dream: Victims of Necessity. Assessment of the Irregular Movement of Men from East Africa and the Horn to South Africa* (Geneva, IOM, 2009). Available from https://publications.iom.int/books/pursuit-southern-dream-victims-necessity

[104] US Department of State, *Trafficking in Persons Report June 2016* (Washington, D.C., 2016), pp. 103–104.

[105] B. Frouws and C. Horwood, *Smuggled South*; K. Lefko-Everett, "Botswana's changing migration patterns".

[106] UN DESA, Population Division, "Country profile: Botswana", World Urbanization Prospects: The 2014 Revision. Available from https://esa.un.org/unpd/wup/Country-Profiles/

Botswana urban versus rural population, 1950–2050 (%)



Source: UN DESA, Population Division, "Country profile: Botswana", World Urbanization Prospects: The 2014 Revision.

The 2011 labour statistics report of Botswana acknowledged that rapid urbanization had resulted in problems in housing, infrastructure, social services and unemployment. Urban centres in Botswana also tend to have higher HIV prevalence rates than the rural areas. Urban centres are not only homes to internal migrants but also to most of international migrants. Emerging in cities, towns and informal settlements – in particular in migrant-dense areas – are the xenophobic sentiments and aversion against foreign nationals, reportedly resulting in a sense of insecurity and impermanence among documented and undocumented migrants alike.[107]

The ongoing migration policy dialogue acknowledges the need to curb the rapid growth of informal settlements and high-risk housing. It suggests targeted support to internal migrant populations in the low-income bracket, with, for instance, affordable housing options. Attention is also given to disaster-induced displacement, migration health, HIV and other health risks where it is proposed that migrants irrespective of legal status should have access to health services. This is of high relevance in the context of reducing vulnerabilities. The policy dialogue further links migration and disaster risk management in terms of humanitarian assistance and protection – including relocation, rehabilitation and reintegration – as well as prevention and mitigation of the negative impacts of disasters and forced displacement and rather promoting migration as a sustainable adaptation strategy.[108]

Disaster risk management

While Botswana does not have any specific legislation on disaster risk management, emergency regulations and guidelines are derived from the Emergency Power Act. The disaster risk management system in Botswana builds on the National Policy on Disaster Management from 1996, which sets the foundation for underpinning principles of the disaster risk management system in the country.[109]

In line with the Policy, the National Disaster Risk Management Plan was developed in 2009, with the goal to enable achievements towards sustainable development by carrying out disaster risk reduction activities, reducing vulnerability and increasing resilience. The aim of the Plan is to provide a framework under which a coordinated and proactive disaster risk reduction and disaster management system can function. The Policy and the Plan both recognize the innate link between disasters and development and a population's vulnerability level. The Plan makes provision for mass care of a large number of affected persons and displaced populations as a result of disaster

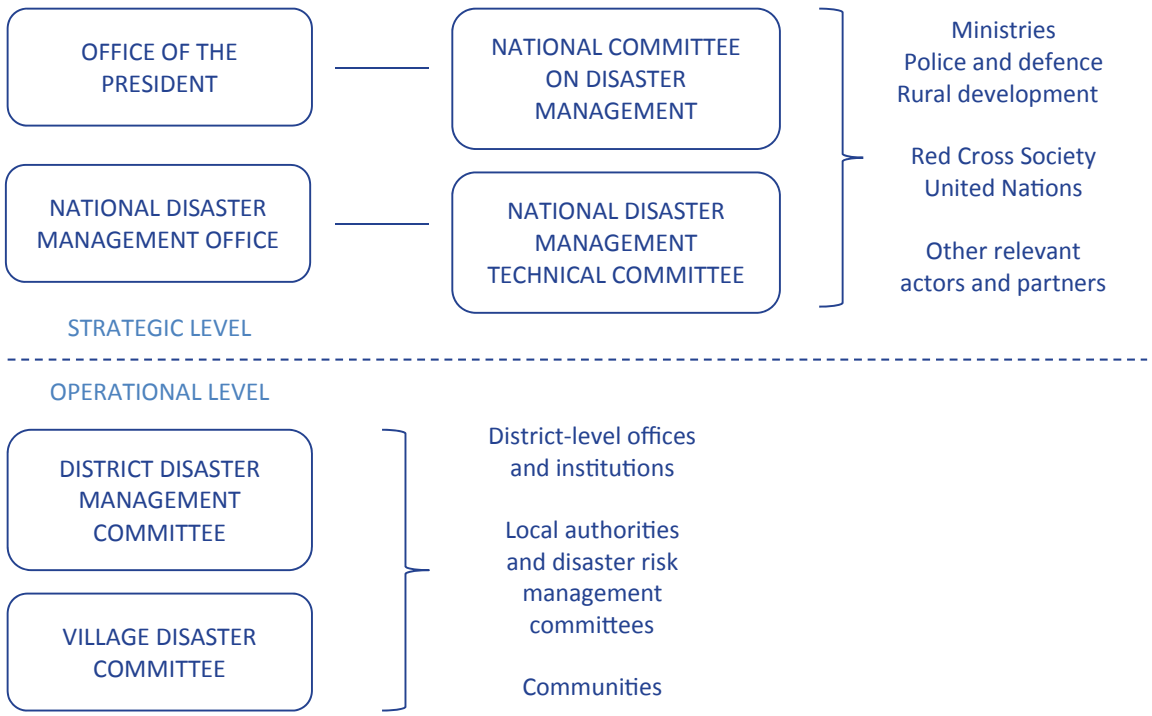
[107] IOM Regional Office for Southern Africa, "Briefing note on HIV and labour migration in Botswana" (Pretoria, 2009); K. Lefko-Everett, "Botswana's changing migration patterns".

[108] "National migration policy for Botswana, draft version (28 July 2016).

[109] Government of Botswana, Office of the President, National Policy on Disaster Management, Presidential Directive No. CAB 27/96 (August 1996); Government of Botswana, NDMO/Office of the President, National Disaster Risk Management Plan.

events, including temporary shelter and humanitarian assistance. No mention of cross-border displacement is, however, made.[110]

The structure of the disaster risk management system in Botswana is derived nationally from the Office of the President and the NDMO. The multisectoral, multi-stakeholder National Committee on Disaster Management is the principal policy and coordination entity in the country. The National Disaster Management Technical Committee is responsible for strategic planning, monitoring of activities and advice. The same type of multisectoral committee exists at the more operational level under the district administration (district/city/town). The committees at the village level are responsible for monitoring and reporting to the districts and capture the traditional and indigenous knowledge of disasters.[111]



In 2013, the NDMO developed the National Disaster Risk Reduction Strategy. Covering the period 2013–2018, the Strategy provides measurable indicators for the disaster risk reduction components of the National Policy on Disaster Management and the National Disaster Risk Management Plan. The vision is to enhance disaster resilience for all – through creation of coordination and integrated strategies and programmes for disaster risk reduction, stakeholder collaboration and innovative use of skills, technologies and resources.[112]

The Strategy calls for a specific legislative framework for disaster risk reduction, capacity enhancement at all levels, guaranteed disaster risk reduction funding at the national and district levels, and the implementation of the Strategy. It further prioritizes the mainstreaming of disaster risk reduction into development planning and outlines the main disaster risk reduction responsibilities of key ministries. The Strategy also highlights the importance of international and transboundary cooperation.[113]

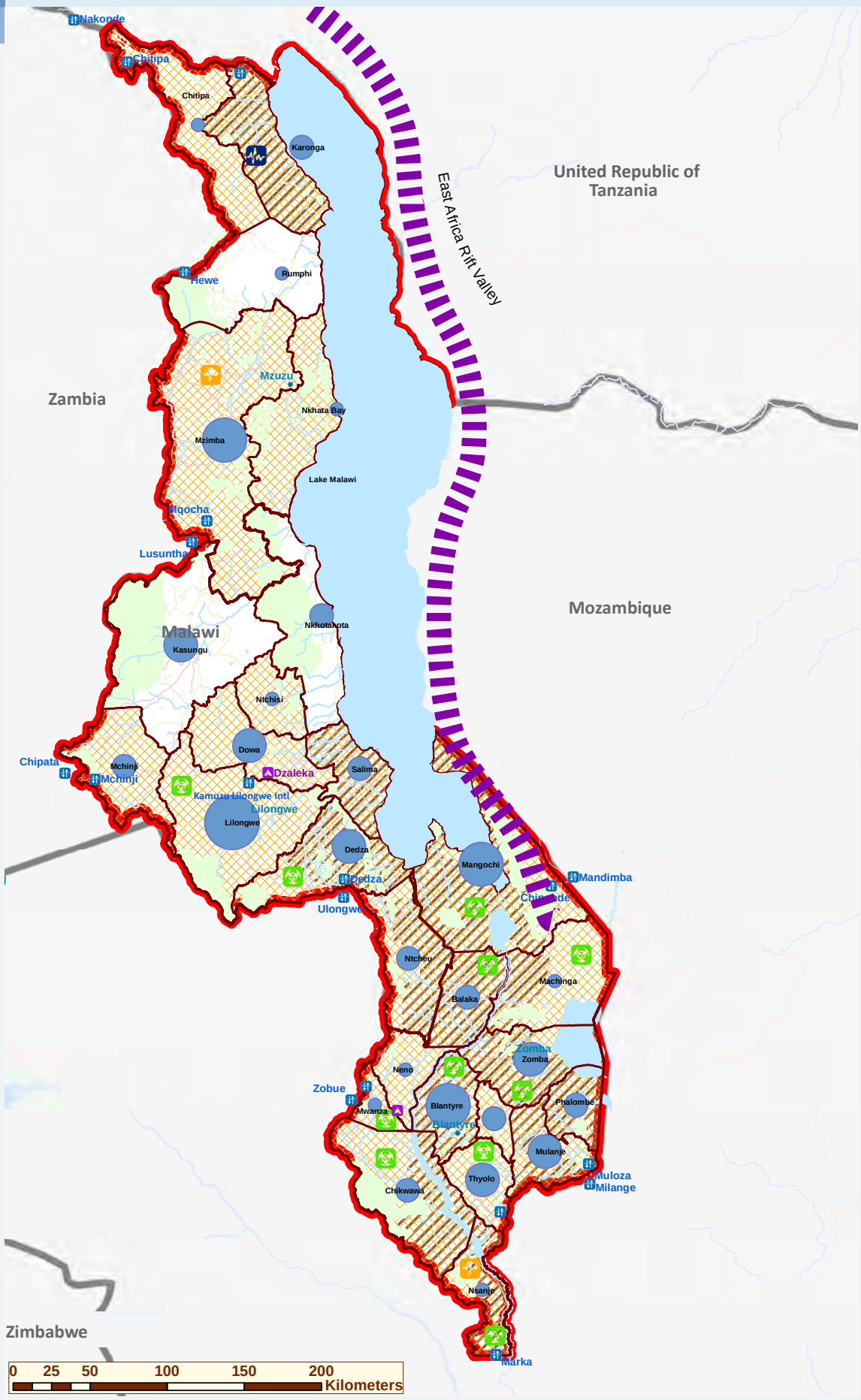
110 Government of Botswana, NDMO/Office of the President, National Disaster Risk Management Plan.
111 Ibid.
112 Government of Botswana, NDMO/Office of the President, *National Disaster Risk Reduction Strategy 2013–2018: Beyond Vulnerability – Towards Resilience* (Gaborone, 2013).
113 Ibid.

Contingency plans are developed on a regular basis. A national contingency plan for 2016/2017 has not been made available for the purpose of this review. Nonetheless, the Tutume Sub-District Disaster Contingency Plan 2017 was developed to prepare for a range of local disaster risks, including drought, floods, storms, heat waves, malnutrition, and human and other vector- and waterborne diseases, hazards related to agriculture (e.g. crop pests, animal production, and foot and mouth disease), wild and structural fires, and road traffic accidents. The Contingency Plan identifies the underlying factors of vulnerability and includes scenario planning for impacts relating to the needs of affected populations, adversities on the economy, and key sectors to be affected such as agriculture, water and sanitation, and health. It identifies priority actions for all phases of the disaster risk management life cycle and assesses timelines, the overall capacity level, responsible and supporting actors, and resources needed overall (e.g. transport, tents, manpower, funding). The details of the implementation are however not elaborated, neither are the financial resources needed and/or resource gaps for the Plan estimated.[114]

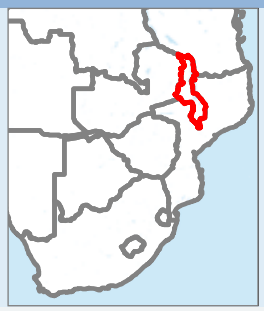
[114] Government of Botswana, Central District Council, Tutume Sub-District, Disaster Contingency Plan 2017.

4.2. Malawi

1 cm = 800 km



MALAWI
HAZARDS AND VULNERABILITY



Legend

- ADM0 Country Level
- ADM1 Region Level
- ADM2 District Level
- Southern Africa Country
- City
- Border Crossing
- Refugee Camp
- Cross Border River
- Waterways
- Waterbodies
- Natural Feature
- Roads
- Drought Prone Area
- Flood Prone Area
- East Africa Rift Valley Fever

Population Density

- 0–250,000
- 250,001–500,000
- 500,001–750,000
- 750,001–1,000,000
- 1,000,000+

Malawi Hazards Impacts (From 2000–2016)

Hazard Type	People Affected
Drought	16,849,435
Earthquake	20,736
Epidemic	62,637
Flood	2,090,992
Storm	6,358

Hazard profile and history of disaster events

According to the 2017 INFORM Risk Index, Malawi is assessed as a medium country in overall risk (4.8). Drought has the highest risk indicator of hazards, followed by flood. In terms of vulnerability and coping capacity, the country is facing greater risk dimensions, to a great extent owing to the overhanging development challenges as well as disaster risk governance.[115]

According to EM-DAT, an international disaster database[116], Malawi was struck by 44 disaster events during the period 2000–2016. These disasters affected nearly 19 million people and did not spare any person – whether from rural or urban, rich or poor.

Year	Disaster type	Disaster subtype	Locations
2000	Epidemic	Bacterial disease	n.a.
	Flood	n.a.	Chikwawa and Nsanje Districts (Southern Region); Karonga District (Northern Region); Nkhotakota District (Central Region)
2001	Epidemic	Bacterial disease	Lilongwe District (Central Region); Lake Chilwa, Mangochi District (Southern Region)
	Flood	Coastal flood	Chikwawa, Nsanje, Machinga, Blantyre, Phalombe, Zomba, Mangochi, Thyolo and Mwanza Districts (Southern Region); Dedza, Nkhotakota, Salima, Mchinji and Kasungu Districts (Central Region); Karonga District (Northern Region)
2002	Drought	Drought	Balaka, Blantyre, Chikwawa, Machinga, Mangochi, Mulanje, Nsanje, Phalombe, Thyolo and Zomba Districts (Southern Region)
	Epidemic	Bacterial disease	Nkhotakota District (Central Region)
	Flood	Riverine flood	Balaka, Blantyre, Chikwawa, Machinga, Mangochi, Nsanje, Phalombe and Zomba Districts (Southern Region); Dedza, Dowa, Kasungu, Nkhotakota, Salima and Ntcheu Districts (Central Region); Karonga and Rumphi Districts (Northern Region)
2003	Flood	Coastal flood Flash flood	Nyungwe-Wovwe area in Karonga District, Mzimba District and Rumphi District (Northern Region); Balaka, Machinga, Phalombe, Mwanza, Nsanje and Chikwawa Districts (Southern Region); Salima, Dedza, Ntcheu, Dowa and Lilongwe Districts (Central Region)
2005	Drought	Drought	Southern Region and Central Region
	Flood	Riverine flood	Chikwawa, Nsanje, Machinga and Mangochi Districts (Southern Region); Ntcheu District (Central Region); Nkhata Bay District (Northern Region)
	Storm	n.a.	Mzimba District (Northern Region)
2006	Epidemic	Bacterial disease	Blantyre and Mangochi Districts (Southern Region); Dedza, Balaka and Salima Districts (Central Region)
	Flood	Riverine flood Flash flood	Malindi area in Mangochi District, Chikwawa District (Southern Region); Salima District (Central Region)

[115] INFORM country risk profiles for 191 countries: Malawi. Available from www.inform-index.org/Countries/Country-profiles
[116] D. Guha-Sapir, R. Below and Ph. Hoyois, EM-DAT. Available from www.emdat.be

Year	Disaster type	Disaster subtype	Locations
2007	Drought	Drought	Karonga and Mzimba Districts (Northern Region); Ntchisi District (Central Region); Mulanje District (Southern Region)
	Flood	Riverine flood Flash flood	Chitipa, Karonga, Mzimba and Nkhata Bay Districts (Northern Region); Lilongwe, Mchinji and Ntchisi Districts (Central Region); Lundu 2 (in Chikwawa), Nsanje, Balaka, Blantyre, Machinga, Phalombe and Chiradzulu Districts (Southern Region)
2008	Epidemic	Bacterial disease	Blantyre and Machinga Districts (Southern Region); Lilongwe District (Central Region)
	Flood	Riverine flood	Molol area in Nsanje District (Southern Region); Nazombe, Kaduya, Jebala and Nkhulambe areas in Phalombe District (Southern Region); Balaka, Blantyre, Machinga, Mangochi, Neno, Zomba, Chikwawa, Mulanje, Thyolo and Chiradzulu Districts (Southern Region); Lilongwe, Dowa, Mchinji, Kasungu, Ntcheu and Nkhotakota Districts (Central Region); Mzimba, Nkhata Bay, Rumphi and Karonga Districts (Northern Region)
2009	Earthquake	Ground movement	Karonga District (Northern Region)
	Epidemic	Viral disease	Blantyre, Zomba, Thyolo, Mwanza and Lilongwe Districts
2010	Flood	Riverine flood	Dedza District (Central Region)
2011	Flood	Riverine flood	Mulanje, Thyolo, Phalombe, Chikwawa and Nsanje Districts (Southern Region); Dedza and Salima Districts (Central Region); Nkhata Bay, Rumphi and Karonga Districts (Northern Region)
2012	Drought	Drought	Balaka, Blantyre, Chikwawa, Machinga, Mangochi, Mulanje, Mwanza, Neno, Nsanje, Phalombe, Thyolo and Zomba Districts (Southern Region); Dedza, Ntcheu and Salima Districts (Central Region)
	Flood	Riverine flood	Mangochi, Phalombe, Nsanje and Zomba Districts (Southern Region)
	Storm	Tropical cyclone	Nsanje District (Southern Region)
2013	Flood	Riverine flood	Mangochi, Phalombe and Nsanje Districts (Southern Region)
2015	Drought	Drought	Whole country
	Epidemic	Bacterial disease	Nsanje, Chikwawa, Mwanza and Blantyre Districts (Southern Region); Dedza (Central Region)
	Flood	Riverine flood	Nsanje, Chikwawa, Phalombe, Blantyre, Zomba, Thyolo, Mulanje, Chiradzulu, Machinga, Mangochi and Balaka Districts (Southern Region); Ntcheu, Salima and Lilongwe Districts (Central Region); Karonga and Rumphi Districts (Northern Region)
	Storm	Convective storm	Central Region, Northern Region and Southern Region
2016	Flood	Flash flood	Mzuzu City (Mzimba District); Karango District (Northern Region)

Drought is the hazard type that puts most people at risk in Malawi. Almost all districts are prone to drought, and, as Malawi is a country of predominating rural population and reliant on subsistence agriculture, a large portion of the population is highly vulnerable to the drought risk. Since year 2000, nearly 17 million people have been affected by drought and incidences of recurrent food insecurity. In 2016, drought hit the country to the extreme in which nearly 40 per cent of the population (a total of 6.7 million people, of whom 3.6 million were children) was affected and eventually classified as food insecure. In 2017, President Peter Mutharika declared a national state of disaster due to food shortages brought about by dry spells affecting most parts of the country. As a result, acute malnutrition increased, in particular among vulnerable groups and people with chronic diseases or severe health conditions such as HIV and tuberculosis. Risk of disease outbreaks related to water and sanitation also immediately increased.[117]

Flooding is the disaster type that is most frequently occurring in the country. Almost half of all disaster events since year 2000 have been floods, affecting over 2 million people. The 2015 floods – the "worst flood in living memory" – caused a national declaration of disaster after affecting 15 of the country's 28 districts and more than 1.1 million people. Approximately 230,000 were displaced internally and across borders and the floods left over 20,000 people stranded without access to basic emergency relief. The main causes of flooding in Malawi are heavy rains and overflowing of rivers such as Shire, which is the country's longest river, flowing into the Zambezi in Mozambique. Malawi also feels the effect of cyclones that may intensify the risk of flooding. In 2017, due to La Niña, several districts again suffered due to heavy rainfall and flashfloods.[118]

Situated in proximity to the East African Rift Valley, Malawi is at risk of earthquakes caused by the movement in the African plate along the rift valley. In December 2009, Malawi experienced an earthquake in Karonga District, Northern Region province, which, according to EM-DAT statistics, affected nearly 21,000 people. The disaster came with high associated costs largely due to inadequate infrastructure and poor construction of buildings. As Malawi is a country of high population density, the impact of such disasters may greatly risk the lives and livelihoods of inhabitants in affected areas and cause large-scale economic and material damage.[119]

In Malawi, the risk of epidemic outbreaks – such as diarrhoea, cholera and dysentery – is high as either a single disaster event or as compounded by other occurring disasters such as flooding and drought. The country is densely populated and a vast majority of the rural population still lacks adequate water and sanitation facilities. WASH-related diseases are the second most common cause of child mortality in Malawi.[120]

The 2015 disaster risk management policy of Malawi recognizes several other hazards, although currently they are not considered as primary threats. These include stormy rains, strong winds, hailstorms, landslides, pest infestation, and fires and accidents.[121]

Climate change will, however, exacerbate the frequency and severity of future disaster events in the country. According to Malawi's 2006 National Adaptation Programme of Action (NAPA), the country's main vulnerabilities to climate change include extreme and unpredictable weather events and intensified incidences of both drought and floods. Of great importance to the country's economy, agriculture and fishery is Shire River, also Malawi's main power generation source. In recent years, Shire has been subject to severe land degradation and soil erosion as well as waste pollution from human and industrial waste, all of which have implications on the country's agricultural sector and food security, human health and disease outbreaks such as diarrhoea,

[117] Government of Malawi, Office of the Secretary and Commissioner for Disaster Management Affairs, *National Disaster Risk Management Policy 2015* (Lilongwe, 2015); SADC, *Regional Humanitarian Appeal June 2016*; RIASCO, *RIASCO Action Plan for Southern Africa, May 2016–April 2017*.

[118] Ibid.

[119] Government of Malawi, Office of the Secretary and Commissioner for Disaster Management Affairs, *National Disaster Risk Management Policy 2015*; D. Guha-Sapir, R. Below and Ph. Hoyois, EM-DAT. Available from www.emdat.be

[120] Government of Malawi, Office of the Secretary and Commissioner for Disaster Management Affairs, *National Disaster Risk Management Policy 2015*.

[121] Ibid.

cholera and malaria, as well as the electric power supply and subsequent socioeconomic hurdles. The most vulnerable are rural communities. Climate change is also likely to cause environmental migration and a rural-to-urban migration flow in the medium to long term.[122]

The hazards and vulnerability map of Malawi displays the drought- and flood-prone districts and the East Africa Rift Valley, as well as incidences of disaster events from 2000 to 2016. The map also suggests that many districts are prone to multiple hazards. With the country's high population density, the risk of epidemic outbreaks is high, as diseases mainly spread from human to human. The Dzaleka and Kapise refugee camps are of concern as their resources to provide assistance are already scarce. In 2016, the Government announced the possibility of reopening the Luwani camp – an old refugee camp that previously hosted Mozambican refugees during the 1977–1992 civil war – preparing for a possible increase in persons seeking refuge in Malawi.

Malawi is assessed as multi-hazard. The risks are, however, exacerbated by the socioeconomic and sustainable development challenges in the country.

Development indicators and vulnerability factors

Malawi HDI 2015: 0.476 (Rank: 170)		
Population, 2015 (Urban %) Total: 17,215,000 16.3%	GDP/capita PPP USD, 2011 1,113	Unemployment, 2015 6.7%
Gini, 2010–2015 46.1	Multidimensional poverty,, 2005–2015 56.1 %	Education, 2015 Expected years of schooling: 10.8 years
Health, 2015 Life expectancy: 63.9 years	HIV prevalence (ages 15–49), 2015 9.1%	Gender development and gender equality, 2015 0.921 and 0.614
International migrant stock, 2015 (% of population) 215,158 (1.2%)	% of SADC immigrants, 2007 5.5%	% of SADC emigrants, 2007 3.7%
People of concern, 2016 30,415	Refugees, 2015 5,844	IDPs, 2010–2015 (new displacement) 407,602

Sources: UNDP, *Human Development Report 2016: Human Development for Everyone* (New York, 2016).

UN DESA, *Trends in International Migrant Stock: The 2015 Revision*, UN database, POP/DB/MIG/Stock/Rev.2015 (New York, United Nations, 2015).

UNHCR, "UNHCR statistics: The world in numbers". Available from http://popstats.unhcr.org/datavizGT2016/index.html (accessed 20 July 2017).

IDMC, "IDMC global figures 2016: New displacements". Available from www.internal-displacement.org/database/ (accessed 20 July 2017).

Oxford Policy Management, "Developing financing mechanisms to support the implementation of the draft ´Policy Framework for Population Mobility and Communicable Diseases in the SADC Region´: Situational analysis", unpublished (March 2015).

[122] Government of Malawi, Ministry of Mines, Natural Resources and Environment, Environmental Affairs Department, *Malawi's National Adaptation Programmes of Action (Under the United Nations Framework Convention on Climate Change*), first edition (Lilongwe, March 2006).

Malawi[123] is one of the countries with low human development and classified as a least developed country. Its economic growth rate has been stable over the past decade. However, during the past two years, GDP growth has slowed down, primarily owing to the negative impacts of flood and drought disasters on the agricultural sector, which accounts for approximately one third of the economy. It has just over 17 million inhabitants and currently has the lowest urbanization level SADC region, with only 16.3 per cent of its population living in urban areas.

Although Malawi has made progress in recent years, low human development (ranking 170/188) and widespread poverty are a fact. More than half of the country's population is estimated to be living under conditions of multidimensional poverty (56.1%). Main poverty is concentrated in rural areas, while poverty levels in urban areas have been declining. The high poverty level can also be understood together with the unemployment level. Although the indicator is relatively low, it only reflects unemployment in the formal labour market and not in the informal labour market, which is of great significance in Malawi. The Gini coefficient (46.1) does not cause alarm in terms of income inequalities; it rather reveals that poverty is absolute across the board.

The country is heavily reliant on agricultural productivity and subsistence farming which makes its population vulnerable to climate change and weather-related disaster events. Over the next coming years poverty levels are further expected to increase as a result of the two consecutive flood and drought disasters experienced. Hence, Malawi is facing recurrent and protracted challenges of poverty and food insecurity.[124] For the 9.1 per cent living with HIV/AIDS this is particularly worrying. The gender development indicator reveals that human development (or challenges thereof) is fairly even between men and women (0.921) although women are disproportionally disadvantaged when it comes to gender equality (0.614), the latter impacting the resilience of Malawi women negatively.

Migration trends and patterns

Malawi is generally perceived as one of the main transit hubs for migrants heading to other Southern African countries, such as Botswana and Namibia, as well as the regional destination South Africa. It has, however, also become a preferred country of destination for migrants originating from Mozambique, as well as Zambia, Zimbabwe, and countries of instability in the Horn of Africa and the Great Lakes region. Asian immigrants also continue to reach Malawi, predominantly for labour as well as for business and trade purposes. The country also experiences irregular migration; however, the magnitude of this irregular movement is not known.[125] In terms of human trafficking, Malawi – as categorized in the 2016 Trafficking in Persons Report – is a Tier 2 country, assumed to be a source for forced labour and sex trafficking, and, to a lesser extent, a destination country for victims of trafficking from Zambia, Mozambique and the Great Lakes region.[126]

In 2013, a study made by IOM showed that the country was receiving an average of 500 arrivals per month at the Dzaleka refugee camp – some using it as a transit on the southern route while others were seeking asylum primarily from Burundi, Rwanda and the Democratic Republic of the Congo. Malawi has an encampment policy for refugees, that is, movement outside of the camps is restricted unless issued with a specific permit. In the past year, asylum seekers from Mozambique crossed the border into Malawi, seeking protection from the worsening internal violence and political instability in their country of origin. An escalation of the situation in neighbouring Mozambique would likely generate additional displacement across the border into Malawi.

[123] Section derived from: UNDP, *Human Development Report 2016*; World Bank, "The World Bank in Malawi", available from www.worldbank.org/en/country/malawi (accessed 27 May 2017).

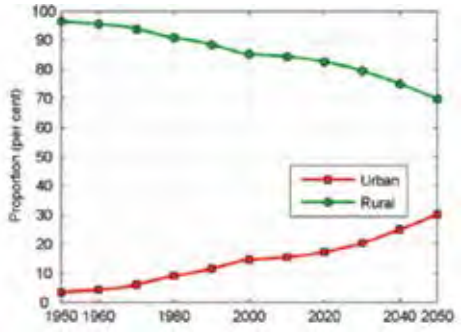
[124] RIASCO, *RIASCO Action Plan for Southern Africa, May 2016–April 2017*.

[125] IOM, *Migration in Malawi: A Migration Profile 2014* (Geneva, 2014). Available from https://publications.iom.int/books/migration-malawi-country-profile-2014

[126] US Department of State, *Trafficking in Persons Report June 2016* (Washington, D.C., 2016), pp. 253–254.

Internal displacement within Malawi is not uncommon. More than 400,000 persons were internally displaced during the period 2010–2015. Displacement figures for 2015 placed Malawi on the top 10 list globally. Increased risks are likely to fuel rural-to-urban migration, internally and internationally.[127] Traditionally, South Africa has been a preferred country of destination for Malawians searching for economic opportunities and alternative livelihood options. Increasingly, urban centres in Malawi – such as the four largest cities currently, namely, Blantyre, Lilongwe, Mzuzu and Zomba – are also serving as a pull factor for internal migration. The urban population is expected to nearly double by 2050, predicted to reach 30 per cent of the overall population.[128]

Malawi urban versus rural population, 1950–2050 (%)



Source: UN DESA, Population Division, "Country profile: Malawi", World Urbanization Prospects: The 2014 Revision.

The country's legal framework on migration relies on the Malawi Immigration Act 1964 and its amendments in 1988 – generally regulating immigration and emigration. Malawi is currently developing a migration policy that will help govern the migration regime of the country – supported by the International Centre for Migration Policy and Development. The policy is expected to address migration and citizenship issues such as labour migration, asylum seekers and refugees, human trafficking, terrorism, irregular migration, diaspora engagement, foreign direct investment and citizenship.[129]

Disaster risk management

Malawi does not have a comprehensive legislation on disaster risk management. The Disaster Preparedness and Relief Act, enacted in 1991, merely makes provisions for action required once a disaster has occurred. Instead, the National Disaster Risk Management Policy developed in 2015 is the framework under which disaster risk management activities are being implemented. The vision of the Policy is to have "a national resilience to disaster", by sustainably reducing disaster losses in lives and in assets of individuals, communities and the country as a whole. It bridges between disaster risk management and development planning.[130]

Reducing poverty and promoting sustainable economic growth and development are two of the key priorities of the Government of Malawi, and these are envisaged alongside disaster risk reduction. Mainstreaming of disaster risk management is emphasized at all levels of planning, reducing underlying risk factors and vulnerabilities. For instance, during planning, safe buildings, planned land use, sustainable management of the environment and climate change adaptation initiatives are taken into consideration.[131]

[127] IDMC, "IDMC global figures 2016: New displacements". Available from www.internal-displacement.org/database/ (accessed 20 July 2017)

[128] UN DESA, Population Division, "Country profile: Malawi", World Urbanization Prospects: The 2014 Revision. Available from https://esa.un.org/unpd/wup/Country-Profiles/

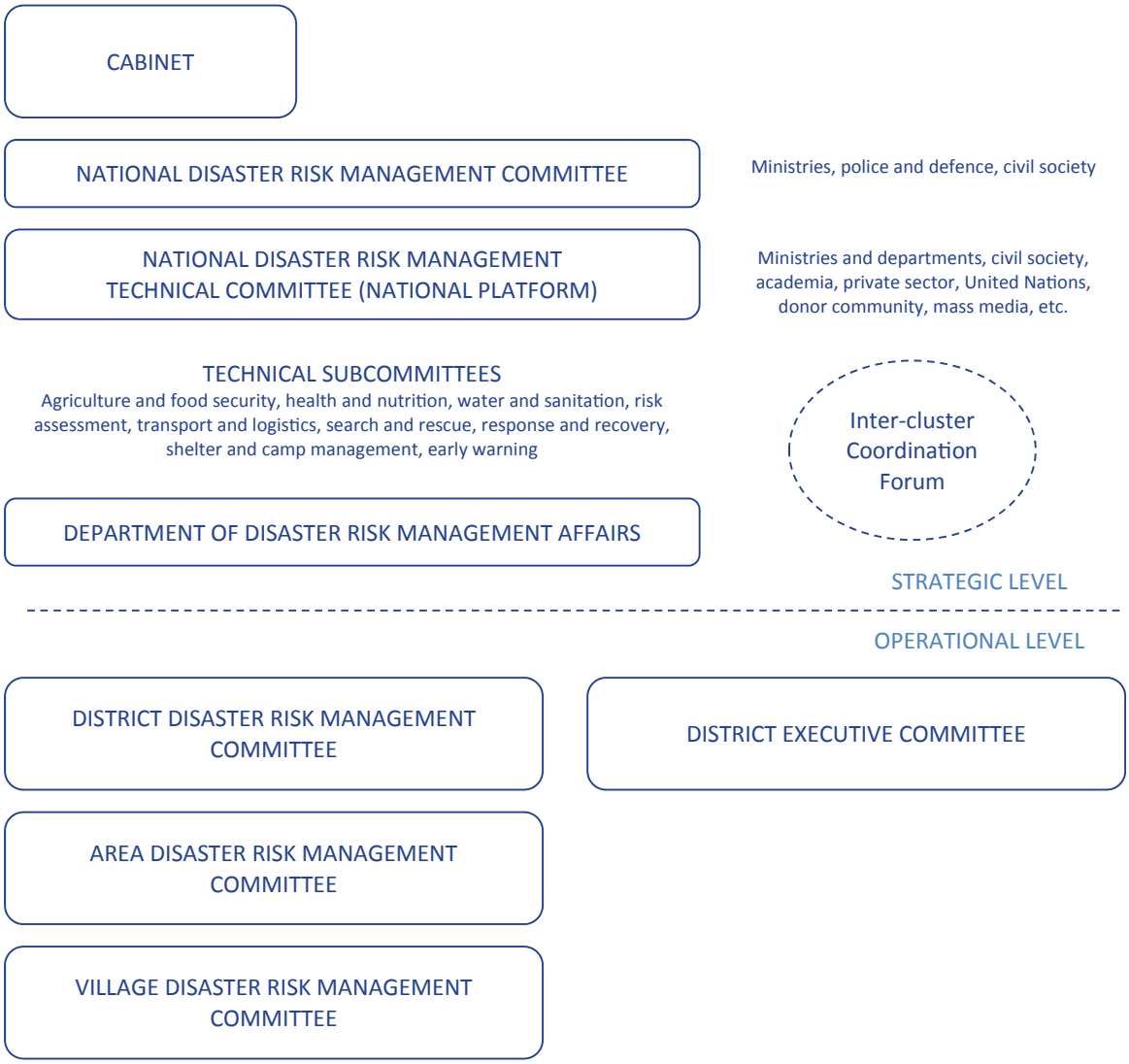
[129] Government of Malawi, Immigration Act 1964.

[130] Government of Malawi, Office of the Secretary and Commissioner for Disaster Management Affairs, *National Disaster Risk Management Policy 2015*.

[131] Government of Malawi, Office of the Secretary and Commissioner for Disaster Management Affairs, *National Disaster Risk Management Policy 2015*.

The Policy calls for disaster risk management budgeting among ministries, departments and decentralized institutions. It does, however, not make reference to any specific disaster risk management funding mechanism for the implementation of the Policy and its priority areas. Although there is an existing National Disaster Preparedness and Relief Fund, this has been created for emergency relief after a disaster has occurred and is also limited in resources.[132]

The disaster risk management structure in Malawi consists of the Cabinet and the National Disaster Risk Management Committee and its Technical Committee – building on a multi-stakeholder and multisectoral approach.[133]



The mandated government entity is the Department of Disaster Risk Management Affairs (DoDRMA), operating at the national level with a primary responsibility for managing and coordinating the implementation of the Policy. Responsible for the implementation of the Policy – operationally – are the decentralized structures at the city, municipal, district, area and village levels.[134]

[132] Ibid.
[133] Ibid.
[134] Government of Malawi, Office of the Secretary and Commissioner for Disaster Management Affairs, *National Disaster Risk Management Policy 2015*.

Part of the disaster risk management system of Malawi is also the Inter-cluster Coordination Forum, established when the Government adopted the humanitarian cluster system. Nine clusters exist to date: Health and HIV/AIDS; Nutrition; Water and Sanitation; Transport, Logistics and Communications; Agriculture; Food Security; Education; Emergency Shelter and Camp management; and Protection. Early warning is mainstreamed in all nine clusters. Each cluster is led by a government ministry/department, supported by a UN agency or the Malawi Red Cross Society as a co-lead partner.[135]

To strengthen preparedness for disasters at the national and district levels, contingency plans are regularly developed. The national contingency plan for 2016–2017 is multi-hazard and includes scenarios as well as identified hazard-prone areas for floods and dry spells, strong winds and disease outbreaks – each ranging in estimated affected population and potential level of impact. Displacement, damage to crops, food shortage and food insecurity, and damage to infrastructure, buildings and basic service delivery, as well as loss of lives, are all considered – with subsequent need for humanitarian assistance. Coordination of risks with neighbouring countries across borders is limited to planning for disease outbreaks, such as cholera, and mainly referred to the health cluster.[136]

At the district level, the District Disaster Risk Management Committees also prepare contingency plans.

The Salima District contingency plan for 2015/2016 elaborates on the scenario cases for each hazard included in the plan.[137] Salima has approximately 400,000 inhabitants, bordering the western parts of Lake Malawi and situated along the Great Rift Valley. Hazards such as floods, heavy winds, dry spells, disease outbreaks and earthquakes have been identified as some of the main risks, compounded by pest outbreaks as well as reduced grazing areas, which may lead to crop failure, food insecurity and wildlife confrontation.

In Mangochi District – one of the southern districts housing more than 600,000 inhabitants, and bordering the eastern parts of Lake Malawi and neighbouring Mozambique – the contingency plan for 2016/2017[138] identifies and elaborates on floods, dry spells, cholera and strong winds. Early warning systems that can be used to predetermine a disaster are included for floods, cholera outbreaks, drought and famine, and crop pest outbreaks.

Both contingency plans outline different disaster scenarios as well as at-risk locations. Possible adversities are identified, including but not limited to damage to infrastructure and buildings; destruction of homes and subsequent displacement; low crop production, food insecurity and malnutrition; injuries, health hazards, epidemic outbreaks and spread of HIV; disruption of social cohesion and civil disorder; and casualties. Also, the need for additional assistance from the national level and partners in the worst-case scenario is highlighted.

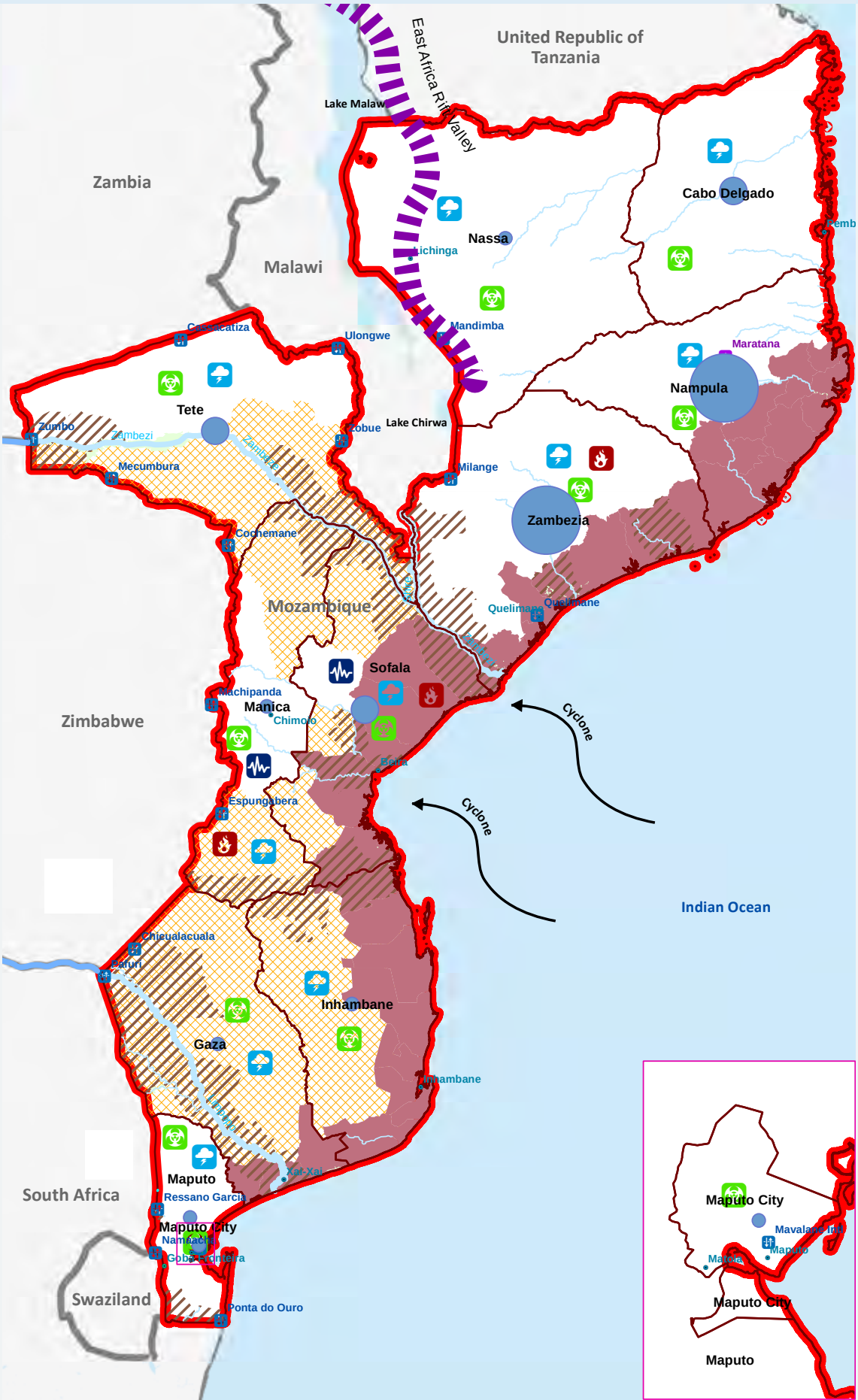
In the Mangochi plan, it is recognized that disaster occurrence in neighbouring countries (and districts) may have an affect also on the district; however, this is only outlined in relation to epidemic outbreaks such as cholera and crop pest outbreaks.

The Mangochi plan defines vulnerability in terms of “predisposition of humans, livestock, infrastructure and crops to disaster risk factors”. In the Salima contingency plan, no such reference is made. Both plans have undertaken a capacity analysis, identifying the communication system, rescue and evacuation, equality and prevention of exploitation and sexual abuse primarily during displacement, and a supply list of items available for preparedness and response activities. Functions of the different levels of the disaster risk management system are also set forth.

[135] Ibid.
[136] Government of Malawi, National Contingency Plan, Malawi 2016–2017 (2015).
[137] Government of Malawi, Salima District Council, Draft Salima District Council Disaster Contingency Plan 2015/2016 (2016).
[138] Government of Malawi, District of Mangochi, District Council Disaster Contingency Plan 2016/2017 (2015).

4.3. Mozambique

1 cm = 8 km



MOZAMBIQUE
HAZARDS AND VULNERABILITY

Legend

- ADM0 Country Level
- ADM1 Provincal Level
- Southern Africa Country
- City
- Border Crossing
- Refugee Camp
- Cross Border River
- Waterways
- Waterbodies
- Natural Feature
- Roads
- Drought Prone Area
- Flood Prone Area
- East Africa Rift Valley Fever
- Cyclone Risk Area

Population Density

- 0–1,500,000
- 1,500,001–2,000,000
- 2,000,001–2,500,000
- 2,500,001–3,000,000
- 3,000,000+

Mozambique Hazards Impacts (From 2000–2016)

Hazard Type	People Affected
Drought	5,699,500
Earthquake	1,476
Epidemic	106,629
Flood	6,806,603
Storm	528,275
Wildfire	3,023

Hazard profile and history of disaster events

With 2017 INFORM Risk index of 6.0, Mozambique is ranked high in terms of all risk dimensions, namely, hazard and exposure, vulnerability and coping capacity. As such, Mozambique is the third most at-risk country in the SADC region. The country is strong in terms of disaster risk reduction and one of the more proactive and progressive countries in Africa.[139]

Every year, Mozambique is exposed to floods, drought and cyclones, as well as epidemic outbreaks and risk of earthquakes, human-made crises and human hazards. According to disaster data registered on the EM-DAT database,[140] the country experienced a total of 62 disaster events during the period 2000–2016, affecting over 13 million people as an accumulative total.

Year	Disaster type	Disaster subtype	Locations
2000	Epidemic	Parasitic disease	Maputo province, Sofala province, Beira City (Sofala province), Chimoio City (Manica province)
	Flood	Riverine flood	Matutuine, Manhiça, Magude and Marracuene Districts (Maputo province); Chibuto, Chokwe and Mabalane Districts (Gaza province); Inhambane province; Sofala province; Manica province; Tete provinces
	Storm	Tropical cyclone	Cabo Delgado, Gaza, Inhambane, Manica, Nampula, Niassa, Sofala, Tete, Zambezia, Maputo (all provinces); Lago District (Niassa province)
2001	Drought	Drought	Inhambane province
	Epidemic	Bacterial disease	Mocuba District (Zambezia province)
	Flood	Coastal flood	Nhacolo town (Tambara District, Manica province); Nova Mambone area (Govoro District, Inhambane province); Nicoadala District, Namacurra District, Pebane District, Chinde District, Maganja da Costa District, Morrumbala District, Mopeia District, Quelimane municipality (Zambezia province); Beira City, Buzi District, Chibabava District, Dondo District, Marromeu District, Nhamatanda District, Caia District, Chemba District (Sofala province); Mutarara District, Zumbo District, Magoé District, Macanga District, Tete City (Tete province); Massangena District (Gaza province); Cabo Delgado province; Maputo province; Nampula province; Niassa province
2002	Drought	Drought	Maputo, Gaza, Inhambane, Sofala, Tete and Zambezia provinces
	Epidemic	Bacterial disease	Pemba, Namuno, Mocimboa da Praia, Quissanga and Macomia Districts (Cabo Delgado province)
	Flood	Riverine flood	Nampula District (Nampula province), Beira City (Sofala province)
	Storm	n.a.	Beira City (Sofala province)

[139] INFORM country risk profiles for 191 countries: Mozambique. Available from www.inform-index.org/Countries/Country-profiles (accessed 27 May 2017).

[140] D. Guha-Sapir, R. Below and Ph. Hoyois, EM-DAT. Available from www.emdat.be

Year	Disaster type	Disaster subtype	Locations
2003	Drought	Drought	Magoé, Zumbu, Cahora Bassa, Changara, Moatize, Chiuta and Mutarara Districts (Tete province)
	Epidemic	Bacterial disease	Sofala, Gaza, Maputo, Inhambane, Zambezia, Nampula and Tete provinces
	Flood	Coastal flood Riverine flood	Sofala, Nampula, Manica, Inhambane and Tete provinces; Quelimane municipality, Nicoadala District, Maganja da Costa District, Namacurra District, Mocuba District, Pebane District, Gurue District (Zambezia province); Pemba City, Pemba municipality, Pemba District (Cabo Delgado province)
	Storm	Tropical cyclone	Inhambane, Sofala, Manica and Gaza provinces
2005	Drought	Drought	Maputo, Gaza, Inhambane, Manica, Sofala, Tete and Zambezia provinces
	Flood	Riverine flood	Mutarara District (Tete province); Nampula District (Nampula province); Dondo District, Nhamatanda District, Buzi District, Caia District, Marromeu District, Beira City (Sofala province); Xai-Xai District (Gaza province); Gurue, Mopeia and Chinde Districts (Zambezia province); Cabo Delgado province; Inhambane province; Maputo province
2006	Earthquake	Ground movement	Machaze District, Mossurize District, Chimoio City (Manica province); Beira City (Sofala province)
	Epidemic	Bacterial disease	Marromeu District, Caia District, Dondo District, Beira City (Sofala province); Chimoio City, (Manica province); Maganaja da Costa District and Quelimane municipality (Zambezia province); Monapo District, Malema District, Meconta District, Ilha de Moçambique (Nampula province)
2007	Drought	Drought	Gaza, Inhambane, Manica, Sofala and Maputo provinces (central and southern regions of the country)
	Epidemic	Bacterial disease	Vilanova (Mutarara District), Bawe, Traquino (all in Tete province)
	Flood	Riverine flood	Buzi and Grudja areas (Buzi District, Sofala province); Caia and Sena areas (Caia District, Sofala province); Machanga District (Sofala province); Gurue District, Namacurra District, Mocuba District, Maganja de Costa District, Mopeia District, Chinde District, Nicoadala District, Morrumbala District, Quelimane municipality (Zambezia province); Tambara, Guro, Sussundenga and Mossurize Districts (Manica province); Marromeu District, Chemba District, Chibabava District, Machanga District, Beira City (Sofala province); Mutarara, Zumbo, Chuita, Moatize, Magoe, Cahora Bassa and Changara Districts (Tete province); Moma and Mogovolas Districts (Nampula province); Nova Mabone area (Govuro District, Inhambanae province)
	Storm	Tropical cyclone	Vilankulo District (Inhambane province)

Year	Disaster type	Disaster subtype	Locations
2008	Drought	Drought	Maputo, Gaza, Inhambane, Manica, Sofala and Tete provinces
	Epidemic	Bacterial disease	Guro District (Manica province); Tete City, Chiuta District, Changara District, Macanga District (Tete province); Zambezia province; Niassa province; Cabo Delgado province; Nampula province; Maputo province; Sofala province; Inhambane province; Gaza province
	Flood	Riverine flood	Manica, Mossurize and Tambara Districts (Manica province); Maputo province; Inhambane province; Gaza province; Tete province
	Storm	Tropical cyclone	Mossuril, Angoche, Nacala-a-Velha, Moma, Ilha de Moçambique and Mogovolas Districts (Nampula province); Zambezia province; Sofala province
	Wildfire	n.a.	Manica, Sofala and Zambezia provinces
2009	Epidemic	Viral disease Bacterial disease	Neno District, Tsangano District Zambezia province, Cabo Delgado province, Nampula province, Manica province
	Flood	Riverine flood	Cuamba District (Southern province), Zambezia province, Nampula province, Maputo province
	Storm	Tropical cyclone	Zambezia province
2010	Drought	Drought	Maputo, Inhambane and Gaza provinces (South)
	Epidemic	Bacterial disease	Gurue, Milane and Namarroi Districts (Zambezia province); Pemba, Macomia, Mecúfi, Motepuez and Chiúre Districts (Cabo Delgado province); Cuamba and Mecanhelas Districts (Niassa province); Nhamatanda District (Sofala province); Nampula City, Melama District, Mecubúri District (Nampula province)
	Flood	Riverine flood	Buzi, Chemba, Nhamatanda, Caia, Dondo and Marromeu Districts (Sofala province); Mopeia, Chinde and Morrumbala Districts (Zambezia province); Mutarara District, Cahora District, Bassa District, Tete City (Tete province); Tambara and Sussundenga Districts (Manica province); Nampula province; Inhambane province
2011	Epidemic	Bacterial disease	Ancuabe, Pemba, Motequez, Metuge and Chiúre Districts (Cabo Delgado province); Erati, Memba, Meconta, Mossuril, Mongicual, Nacaroa and Monapo Districts (Nampula province); Chimoio City (Manica province)
	Flood	Riverine flood	Maputo province; Gaza province; Inhambane province; Manica province; Sofala province; Tete province; Zambezia province; Dembe village (Sussundenga District, Manica province); Magude town (Magude District, Maputo province); Caia village (Manhiça District, Maputo province); Maputo District (Maputo province); Bilene District, Chibuto District, Chokwe District, Guija District, Xai-Xai District, Xai-Xai City (Gaza province); Tete province; Zambezia province
	Storm	Convective storm	Chimoio City (Manica province)

Year	Disaster type	Disaster subtype	Locations
2012	Storm	Tropical cyclone	Nicoadala District, Chinde District, Pebane District, Maganja da Costa District, Namacurra District, Gurue District, Mocuba District, Quelimane municipality (Zambezia province); Mossuril and Nacala-a-Velha Districts (Nampula province); Chokwe and Xai-Xai Districts (Gaza province); Maputo City (Maputo province); Zavala District (Inhambane province); Nampula province; Zambezia province; Cabo Delgado province; Sofala province
2013	Epidemic	Bacterial disease	Cabo Delgado province
	Flood	Riverine flood	KaMavota, KaMubukwana and KaMaxakeni boroughs (Maputo City, Maputo province); Chigubo, Chibuto, Mandlakaze, Massangena, Chicualacuala, Guijá, Chokwe, Bilene and Xai-Xai Districts (Gaza province); Panda, Homoine and Govuro Districts (Inhambane province); Milange District, Gile District, Nicoadala District, Chinde District, Namarroi District, Maganja da Costa District, Namacurra, Morrumbala District, Quelimane municipality (Zambezia province); Chimoio City, Gondola District, Sussundenga District, Barue District, Mossurize District, Macossa District (Manica province); Buzi District, Chibabava District, Nhamatanda District, Machanga District, Muanza District, Chemba District, Caia District, Beira City (Sofala province)
2014	Epidemic	Bacterial disease	Tete City, Moatize District, Mutarara District (Tete province); Caia District (Sofala province); Quelimane municipality (Zambezia province); Cuamba District, Lago District, Lichinga City (Niassa province); Lalaua District, Mecubúri District, Murrupula District, Memba District, Meconta District, Nampula City (Nampula province)
	Flood	Flash flood	Maputo City, Matola municipality (Maputo province); Xai-Xai City (Gaza province)
2015	Flood	Riverine flood	Zambezia province, Nampula province, Maputo province, Gaza province, Cabo Delgado province
2016	Drought	Drought	Magude and Manhiça Districts (Maputo province); Massingir and Chibuto Districts (Gaza province); Funhaloro and Panda Districts (Inhambane province); Zambezia province; Manica province; Tete province; Sofala province
	Flood	n.a.	Cabo Delgado province

Floods in Mozambique are the primary hazard, caused by heavy rainfall, overflowing of the nine major river basins in the country or poor water drainage systems. Storm-induced flooding is also common and has the greatest impact on the coastal areas where over 60 per cent of the population lives. The Zambezi River enters Mozambique in Tete province and flows through Manica, Sofala and Zambezia provinces before it reaches the Indian Ocean. When the river basin overflows, these provinces face recurrent flood disasters. The populations are at risk in terms of lives and livelihoods, as well as damage to and destruction of housing and subsequent displacement, damage to infrastructure and economic losses, and increased risk of food insecurity and endemic vector- and waterborne diseases such as malaria and cholera.[141]

The 2015 flooding affected approximately more than 175,000 people across Mozambique. With flood protection infrastructure often outdated or damaged, recent floods have also affected previously low-risk areas. In 2017 again, the country experienced localized flooding events when La Niña-related heavy rainfall hit Mozambique and tropical cyclone Dineo made its landfall in Inhambane province. Rural and urban areas were severely affected. Cyclones and storms are a risk to the country's 2,470 km of coast, increasingly so during the cyclone season from October to April. Tropical cyclones in Mozambique are usually associated with strong winds and heavy rains, and recurrently cause destruction of infrastructure; disrupt water and electricity supply; cause sanitation problems; result in displacement of people and loss of lives, and contribute to environmental degradation in affected areas.[142]

In Mozambique, flooding is commonly associated with transmission of communicable diseases such as cholera, diarrhoea and malaria. Cholera is endemic in many parts of the country, owing to inadequate water, sanitation and hygiene infrastructure. According to UNICEF, 55 children under five years perish daily due to unsafe water and diarrhoea, contributing to Mozambique's ranking as a country with one of the highest child mortality rates in the world.

Drought occurs with a high frequency in Mozambique and the western provinces bordering Zimbabwe and South Africa are more prone to drought in terms of location. The 2015/2016 drought affected nearly 2 million people in Mozambique – main impact being food insecurity, associated malnutrition and a sharp increase in food prices, which resulted in increased risk of rising poverty levels in rural and urban areas.[143]

As the East African Rift Valley lingers down into Mozambique, the country is exposed to seismic activities and earthquakes. Movement in the tetonic plates occur frequently, but not always with a major impact. In 2006, an earthquake struck the southern province of Manica with a magnitude of 7.5, which led to deaths, destruction and economic damage, according to the EM-DAT disaster database. It is assumed that the same magnitude of earthquake today would have more severe effects due to the rapid population growth as well as asset development since then. In June 2017, Sofala province experienced an earthquake; however, no casualties were reported. With elevated urbanization exposure, risk will increase. Furthermore, earthquakes in the Indian Ocean put Mozambique at risk of tsunamis along the coastline. For example, the 2004 tsunami with epicentre in Indonesia was felt as far away as in Mozambique. No major tsunami disaster has however yet affected the country.[144]

[141] National Disaster Management Institute (INGC) and IOM, *Caixa de Ferramentas para Capacitacão em Gestão de Emergências: Manual do Formador(a)* (2016).

[142] Derived from: RIASCO, RIASCO Action Plan for Southern Africa, May 2016–April 2017; SADC, *Regional Humanitarian Appeal June 2016*; A. Holloway et al., Humanitarian Trends in Southern Africa; D. Guha-Sapir, R. Below and Ph. Hoyois, EM-DAT, available from www.emdat.be

[143] Ibid.

[144] Ibid.

The multi-hazard risk is closely related to the weather events and disasters in neighbouring countries that can exacerbate the disaster risks in Mozambique, either by spreading to the country as cross-border transboundary disasters or when Mozambique serves as a host country and place of refuge for affected populations in the region. Forced migration resulting from the 2011 drought disaster in the Horn of Africa is one example in which as many as 8,000 people sought temporary shelter in Mozambique. As Mozambique is driven by food import, with heavy reliance on the South African market, the country is also vulnerable to food price shocks and regional or global events, which may affect food prices and the availability of food.[145]

Risk is increasing as a result of climate change. In the National Adaptation Programme of Action (NAPA) for Mozambique, the link between climate change and hazards and catastrophic events is elaborated. The country's vulnerabilities are attributed to sustainable development challenges, the socioeconomic situation and absolute poverty in Mozambique. It is assumed that incidents of drought and flooding will increase in the future. While the risks associated with drought are expected to increase with excessive and expanded use of soil for agriculture, land degradation and overgrazing, the risk of floods is already high, with or without climate change impact and increased flood intensities.[146]

In terms of human-made crises, Mozambique has been politically stable since the end of the civil war in 1992 and signing of the peace agreement in 1994. Since the 2014 elections, and in particular in 2016, the country has however seen an escalation in violence between the Government and the opposition Mozambique Resistance Movement (RENAMO). Growing tensions and uprising, predominantly in the central provinces of Mozambique, resulted in displacement into Malawi and Zimbabwe in fear of escalating violence and internal conflict. The tensions have since reduced as peace negotiations between the parties have settled, and most people have returned to Mozambique.[147]

The Mozambique hazards and vulnerability map illustrates the hazard-prone areas, including some of the major rivers shared with neighbouring countries, namely, Zambezi (Zambia and Zimbabwe), Limpopo (South Africa and Zimbabwe), Ruvuma (the United Republic of Tanzania), Shire (Malawi) and Save/Sabi (Zimbabwe). Other rivers located in the country are Olifants, Komati/Incomati, Pungwe, Mazowe, Licungo and Lugenda. The parts of Mozambique that are not directly flood-prone due to either their great distance from or the absence of rivers or wetlands are however at risk of cyclones, storms and heavy rains, and some areas have poor water drainage systems. Nampula and Zambezia, for instance, being coastal provinces, are vulnerable to cyclones and storms; the two provinces have the highest populations in the country, together totalling over 6 million . The map also shows that all of Mozambique's 10 provinces have been subject to storms during the period 2000–2016. Lastly, epidemic outbreaks, which go hand in hand with the country's inadequate water, sanitation and hygiene infrastructure, also pose challenges.

In recent years, major setbacks to the country's development can be attributed to disasters that have caused losses both economically and on the population almost annually. The country's vulnerability to external shocks and the population's exposure to disasters is thus two-fold: on the one hand, disaster risks are emanating from the existing development challenges; on the other hand, vulnerability is exacerbated as a result of disasters.

[145] A. Holloway et al., *Humanitarian Trends in Southern Africa*.
[146] Government of Mozambique, Ministry for the Coordination of Environmental Affairs (MICOA), *National Adaptation Programme of Action (NAPA)* (2007).
[147] IOM Mozambique.

Development indicators and vulnerability factors

Mozambique HDI 2015: 0.418 (Rank: 181)		
Population, 2015 (Urban %) Total: 27,978,000 32.2%	GDP/capita PPP USD, 2011 1,116	Unemployment, 2015 22.3%
Gini, 2010–2015 45.6	Multidimensional poverty, 2005–2015 70.2%	Education, 2015 Expected years of schooling: 9.1 years
Health, 2015 Life expectancy: 55.5 years	HIV prevalence (ages 15–49), 2015 10.5%	Gender development and gender equality, 2015 0.879 and 0.574
International migrant stock, 2015 (% of population) 222,928 (0.8%)	% of SADC immigrants, 2007 9.6%	% of SADC emigrants, 2007 31.9%
People of concern, 2016 38,534	Refugees, 2015 4,445	IDPs, 2010–2015 (new displacement) 430,100

Sources: UNDP, *Human Development Report 2016: Human Development for Everyone* (New York, 2016).

UN DESA, *Trends in International Migrant Stock: The 2015 Revision*, UN database, POP/DB/MIG/Stock/Rev.2015 (New York, United Nations, 2015).

UNHCR, "UNHCR statistics: The world in numbers". Available from http://popstats.unhcr.org/datavizGT2016/index.html (accessed 20 July 2017).

IDMC, "IDMC global figures 2016: New displacements". Available from www.internal-displacement.org/database/ (accessed 20 July 2017).

Oxford Policy Management, "Developing financing mechanisms to support the implementation of the draft ´Policy Framework for Population Mobility and Communicable Diseases in the SADC Region´: Situational analysis", unpublished (March 2015).

Mozambique[148] has the lowest HDI ranking among the countries in the SADC and among the lowest in the world (181/188). It is a least developed country and among the bottom 3 countries in the SADC in terms of GDP per capita. With reduced economic growth rate and high debt, the country is leaving some years of high and stable economic growth behind. The unemployment level in the formal sector is very high, at 22.3 per cent. Owing, in part, to the effects of the 2015/2016 flood and drought disasters, the economic projections for the coming years have further been adjusted downwards. The country is vulnerable to weather-related risk affecting the agriculture sector, especially since over 70 per cent of the 28 million inhabitants are in the rural areas. The country's agriculture sector accounts for one quarter of the economy and employs approximately 80 per cent of the labour force.

As the majority of agricultural producers are subsistence farmers, the environmental shocks and natural disasters not only affect the economy in monetary terms or in compromised growth, but also in terms of food insecurity. The consequence is increased poverty levels. Over 70 per cent of the population is living in multidimensional poverty. As the income inequalities are not significantly high (Gini coefficient of 45.6), poverty can be understood in absolute terms across the board. This deprivation is also reflected in the education and health indicators (9.1 years of expected schooling, and 55.5 years life expectancy), which are among the lowest in the SADC region. HIV prevalence is estimated at 10.5 per cent.

[148] Section derived from: UNDP, Human Development Report 2016; World Bank, "The World Bank in Mozambique", available from www.worldbank.org/en/country/mozambique (accessed 27 May 2017).

From a gender perspective, indicators reveal one of the highest discrepancies between men and women in the SADC, when it comes to human development (gender development index: 0.879) and an inequality level on a par with sub-Saharan Africa average and in the bottom among SADC countries. With a range of development challenges, also understood as vulnerabilities of the population and society, sustainable and social development is a national priority for authorities.

Migration trends and patterns

Mozambique is a large country situated at the coast by the Indian Ocean. Bordering the United Republic of Tanzania, Malawi, Zambia, Zimbabwe, South Africa and Swaziland, it is strategically located in terms of access to major ports and to the number one country of destination in the region: South Africa. During the peak years of its economic growth – taking place while Europe was experiencing economic crisis – Mozambique emerged as a country of destination for Europeans and in particular migrants of Portuguese descent, as well as for the nationals from Asia (mainly China) and other African countries.[149]

2015 figures estimate that just over 220,000 documented international migrants are residing in Mozambique. The majority of immigrants are from neighbouring countries, namely, Malawi, South Africa and Zimbabwe. In addition to regular migration flows, in recent years, the country has also seen irregular migration and a significant increase in the number of undocumented migrants, mainly from neighbouring countries such as Malawi. Recent police and immigration authority operations targeting illegal mining in the north of the country in 2017 have revealed the presence of irregular migrants from not only the United Republic of Tanzania but also Western African countries, such as Guinea Conakry, the Gambia and Mali, who are working in and around the mines.[150]

The geographical location of Mozambique makes it an ideal transit country for irregular migrants from the Horn of Africa, who are trying to reach neighbouring South Africa. Somalia and Ethiopia are estimated to be the top migrant-sending countries. Bangladeshi and Pakistani nationals have been intercepted, too. Often, entry is made with the help of smugglers, over land borders or via the Indian Ocean. For some, Mozambique becomes the final destination, while others choose to travel onward on the journey to South Africa. To a lesser extent, northward migration and entry into the United Republic of Tanzania also occur.[151] In terms of trafficking in persons, Mozambique is a source, transit and, to a lesser extent, destination country, with most identified victims being children and minors trafficked to South Africa or internally for forced labour, domestic servitude and sexual exploitation. Mozambique was placed at the Tier 2 Watch List in the US Department of State's 2016 Trafficking in Persons Report. Having over 50 border posts and otherwise porous borders, irregular migration is a major challenge to the country's border management system.

Most of the irregular transit migrants from the Horn of Africa enter the country through the northern provinces of Cabo Delgado, Niassa and Tete, which border the United Republic of Tanzania, Malawi and Zimbabwe. Records reveal that in the previous year, not uncommonly, irregular migrants transited via the Maratane refugee camp in northern Mozambique before moving into cities or finding new smuggler networks. Maratane is the host of the country's asylum seekers and refugees (totalling approximately 9,200 in 2017, according to UNHCR) and the main place for the asylum process to start and a refuge providing humanitarian assistance. The use of this route has however reduced, as transit via airports or through smuggling networks is emerging and increasing in importance.[152]

149 C. Horwood, *In Pursuit of the Southern Dream: Victims of Necessity*.
150 UN DESA, Population Division, *Trends in International Migrant Stock: The 2015 Revision*; IOM Mozambique.
151 B. Frouws and C. Horwood, *Smuggled South*.
152 US Department of State, *Trafficking in Persons Report June 2016* (Washington, D.C., 2016), pp. 278–279.

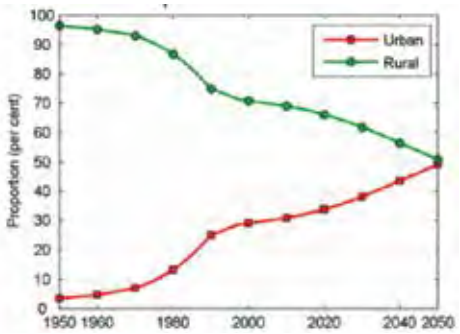
As a country of origin, Mozambique mainly exports labour, with both documented and undocumented migrant workers found in commercial farms, mines and the construction industry in South Africa. Zimbabwe, the United Republic of Tanzania and Malawi are also common countries of destination for Mozambican migrants. Migration – short- or long-term – is nothing new to Mozambique, which is a country of high population mobility characterized by disaster-induced displacement, environmental migration, family ties, work opportunities and rural-to-urban migration.[153]

According to the IDMC, between 2010 and 2015, nearly 430,000 persons were internally displaced. In the past years, escalated internal violence has also resulted in internal displacement, mainly in rural areas as well as across the border to Malawi and Zimbabwe. Between December 2015 and March 2016, nearly 12,000 people sought temporary refuge in Malawi, most of whom have since returned to their communities.[154]

Rural-to-urban migration is growing, although the proportion of population living in urban areas is currently considered low from a regional perspective (32.2%). Nonetheless, urbanization is increasing rapidly and previously rural territories are being converted to urban or peri-urban areas.[155]

In 2005, Mozambique was the fourth least urbanized country in Southern Africa (above Malawi, Lesotho and Swaziland). The projection for 2025 is that Mozambique will become the fourth most urbanized country in the region (after Botswana, South Africa and Angola). As part of this development, informal settlements are also emerging in Mozambique. As migration may serve as a livelihood strategy or way of diversifying income at the household level, the reality in Mozambique, as in many other countries, is that urban poverty is on the rise. National census data and recent studies on poverty and inequality in selected urban and/or rural locations reveal growing inequalities.[156]

Mozambique urban versus rural population, 1950–2050 (%)



Source: UN DESA, Population Division, "Country profile: Mozambique", World Urbanization Prospects: The 2014 Revision.

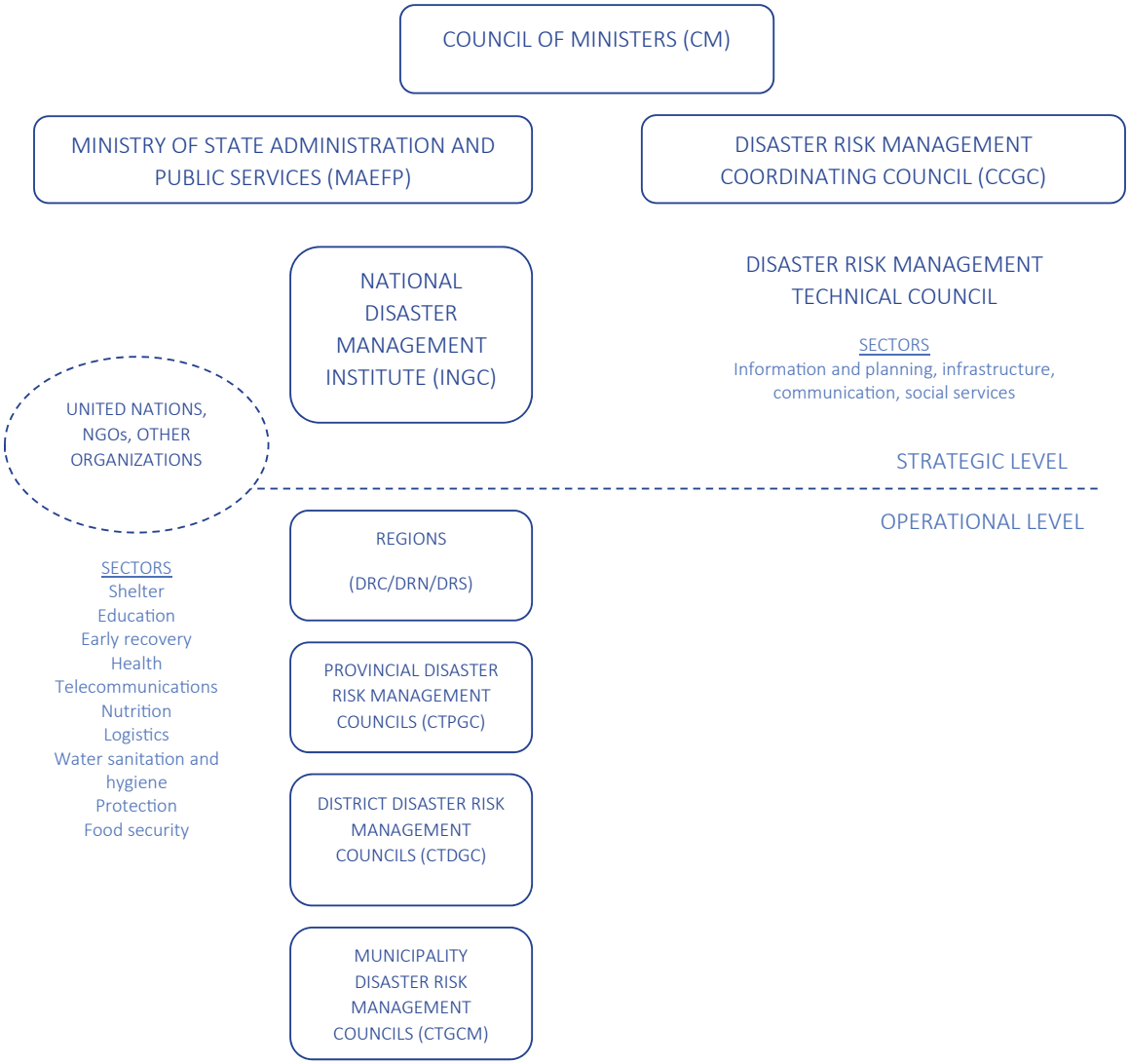
Voices of concern about urbanization without economic growth are echoed, particularly in the context of urban poverty and vulnerability. As such, unplanned urbanization exacerbates vulnerabilities and increases disaster risk, especially in hazard-prone areas such as coastal communities, flood plains and seismic zones. The risk of disruptive effects from natural disasters on vulnerable rural and urban areas is overhanging, and continued proactive and progressive disaster risk reduction and resilience-building is needed.

153 IOM Regional Office for Southern Africa, "Briefing note on HIV and labour migration in Mozambique" (Pretoria, 2009).
154 IDMC, "IDMC global figures 2016: New displacements"; IOM Mozambique.
155 UNDP, *Human Development Report 2016*.
156 UN DESA, Population Division, "Country profile: Mozambique", World Urbanization Prospects: The 2014 Revision, available from https://esa.un.org/unpd/wup/Country-Profiles/; University College London, Disaster Planning Unit (DPU), Urbanisation and Municipal Development in Mozambique: Urban Poverty and Rural-Urban Linkages (London, 2008).

Disaster risk management

Mozambique has had a disaster risk management system since 2006, which was institutionalized by the disaster management act, Lei de Gestão de Calamidades (Law 15/2014 of 20 of June 2014). The objective of the law is to establish a legal framework for disaster risk management, guide multisectoral/multi-stakeholder activities and establish a structure for disaster risk governance from the national level to decentralized levels of administration. The legal framework outlines strategic and operational-level preparedness as well as contingency planning, including a disaster warning system and activation of alerts.[157]

The Council of Ministers (CM) directs the disaster risk management structure of the country. Under the CM are the Ministry of State Administration and Public Services (MAEFP), the Disaster Risk Management Coordinating Council (CCGC), the National Disaster Management Institute (INGC) and the Disaster Risk Management Technical Council (CTGC) from the strategic end. The CCGC is the highest national entity directly under the Prime Minister. It is composed of the Ministers of each key ministry and is responsible for all declarations of emergency as well as red alerts and the activation of national contingency plans. The CTGC is the technical advisory organ of the disaster risk management system and advises the CCGC with analysis, information and proposals. It also has representation from cooperating partners and civil society.[158]



[157] Government of Mozambique, Lei de Gestão de Calamidades (Law 15/2014 of 20 of June 2014).
[158] INGC and IOM, *Caixa de Ferramentas para Capacitacão em Gestão de Emergências: Manual do Formador(a)*.

The INGC is the competent authority for the coordination of disaster risk management initiatives in the country. According to the national disaster risk management policy, the INGC's responsibility is strategic and includes coordination as well as an overarching grip on prevention, preparedness, response and recovery initiatives in the country. Its operational arm is formalized in the National Emergency Operational Centre (CENOE), whose function is to centralize and coordinate multisectoral efforts and ensure a fast, efficient, and effective response to affected populations.[159]

Under the INGC is a decentralized disaster risk management structure with the same sectoral approach in the regions as at the national level. The decentralized structure includes provincial-, district- and municipality-level technical councils for disaster risk management as well as communities. At the provincial, district and municipality levels, decentralized emergency operational centres exist. The community structure includes local disaster risk management committees (CLGRCs) that serve as the link between the institutional structure and the community members. In the event of a disaster, the CLGRC is the first responder. The INGC provincial delegates and the regular communication and reporting procedures link the national-level disaster risk management with the decentralized structure.[160]

The United Nations, non-governmental organizations and other partners support the overall system – under the MAEFP. Although not an official UN cluster country, Mozambique has adopted a sectoral approach similar to that of the UN humanitarian reform. Sectors include shelter; water, sanitation and hygiene; protection; education; health; food security; nutrition; logistics; telecommunications; and initial recovery.[161]

In Mozambique, contingency plans are prepared at the national level as well as by districts and urban areas. Planning processes generally begins at the district and provincial levels and culminates into a national contingency plan, strengthening the link and coordination between national and decentralized levels during preparedness and response.

The national contingency plan for 2016/2017[162] is multi-hazard and identifies cyclones, floods, strong winds, drought, and earthquakes as the main hazards faced by cities, towns and villages. The risk analysis includes aspects of vulnerability that put people at greater danger, such as infrastructure in risky areas with high exposure, limited resilience of at-risk populations and unplanned settlements with inadequate water drainage systems. The negative impact on the agriculture sector and the risk of food insecurity as a result are assumed as major threats. Disaster-induced displacement is another risk determined by the severity of disasters and damage to houses and key infrastructure.

Two examples of district-level contingency plans are the 2016/2017 plans for Govuro District and Vilankulo District, both in Inhambane province.[163] Govuro is one of the most vulnerable districts experiencing hazardous cyclones, flooding and drought, as well as uncontrolled fires. Erosion along Save River increases the risk, as natural flood protection is diminishing. Vilankulo is an urban district and is prone to floods, cyclones, and drought.

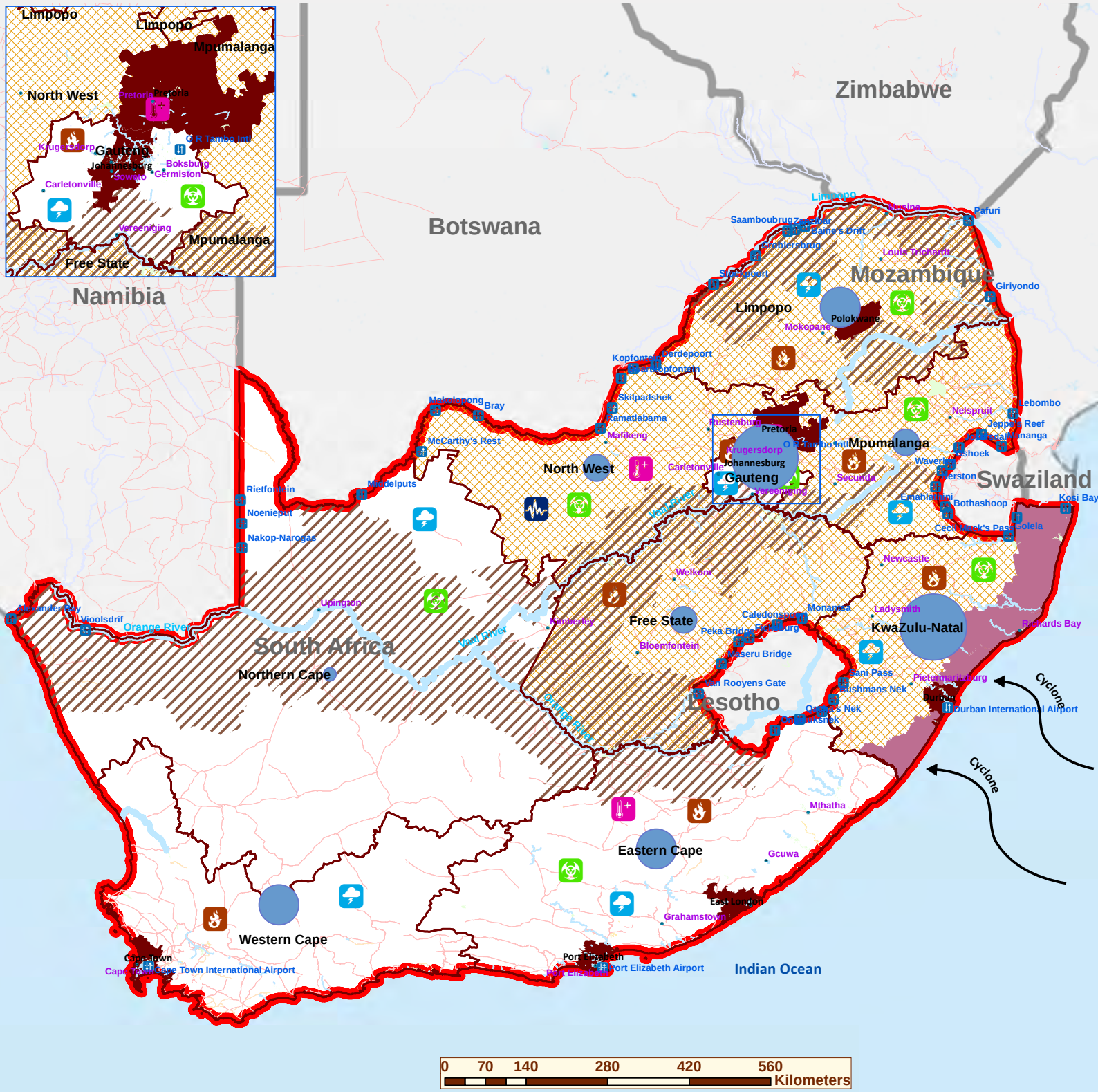
Both plans are multi-hazard and consider primarily floods and cyclones for the specified period. Risk scenarios in the plans estimate the number of affected people should disasters occur. The vulnerability analysis is also primarily focused on at-risk populations. Capacity is outlined in terms of available human and material resources, and gaps in these resources are identified.

159 INGC and IOM, *Caixa de Ferramentas para Capacitacão em Gestäo de Emergências: Manual do Formador(a)*.
160 Ibid.
161 Ibid.
162 Government of Mozambique, Council of Ministers, *Plano de Contingência para a Epoca Chuvosa e de Ciclones, 2016–2017* (2016).
163 Government of Mozambique, Province of Inhambane, Government of the Govuro District, *Plano de Contingência para a Epoca Chuvosa e de Ciclones, 2016–2017* (2016); Government of Mozambique, Province of Inhambane, Government of the Vilankulo District, *Vilankulo Plano de Contingência 2016–2017* (2016).

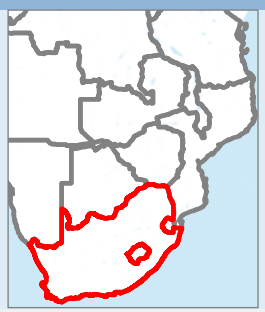
Beneficiaries receive water purifiers. © IOM

4.4. South Africa

1 cm = 800 km



SOUTH AFRICA
HAZARDS AND VULNERABILITY



Legend

ADM0 Country Level
ADM1 Provincal Level
Southern Africa Country
City
Border Crossing
Refugee Camp
Cross Border River
Waterways
Waterbodies
Natural Feature
Roads
Drought Prone Area
Flood Prone Area
Xenophobia Attack Area
Cyclone Risk Area

Population Density

0–2,500,000
2,500,001–5,000,000
5,000,001–7,500,000
7,500,001–10,000,000
10,000,000+

South Africa Hazards Impacts (From 2000–2016)

Hazard Type	People Affected
Drought	17,700,000
Earthquake	2,060
Epidemic	112,385
Flood	466,434
Storm	940
Wildfire	4,375
Heatwave	20

Hazard profile and history of disaster events

The 2017 INFORM Risk Index for South Africa is estimated at 4.3, and places the country at medium overall risk. The risk dimensions are slightly higher for the country's hazard risks as well as lack of coping capacity.[164] South Africa faces a wide range of natural hazards, outlined in the National Disaster Management Framework as weather hazards.

These include drought and floods, cyclones and severe storms. In addition, the extensive coastline, as well as shared borders with six neighbouring countries, is also identified as an increased risk to both "natural and human-induced cross-boundary risks and humanitarian obligations in times of emergency".[165] Urban safety risks are also considered in the South African hazard profile, including specific urban exposure to drought, flood, storms and landslides, as well as human-made informal settlement fires or urban violence and human security threats.

During the period 2000–2016, EM-DAT recorded 53 disaster events in South Africa. In total, during the same period, 18.5 million people were affected.[166] The following table shows the historical disaster events in the country.

Year	Disaster type	Disaster subtype	Locations
2000	Epidemic	Bacterial disease	Lower Umfolozi District, Eshowe/Nkandla area, KwaDukuza/Stanger area, Ugu Region/South Coast (KwaZulu-Natal province)
	Flood	Riverine flood Flash flood	Mpumalanga, KwaZulu-Natal and Gauteng provinces
	Storm	Convective storm	Newcastle town (Amajuba District, KwaZulu-Natal province)
	Wildfire	Land fire	City of Cape Town Metropolitan Municipality (Western Cape province, Cape Town region)
2001	Flood	Flash flood	City of Cape Town District (Western Cape province); Greater Tubatse area (Sekhukhune District, Limpopo province); Thembisile area (Nkangala District, Mpumalanga province); Ingwavuma, Ubombo and Jozini towns (Jozini area, Umkhanyakude District, KwaZulu-Natal province)
	Storm	Convective storm	Mogadi area (KwaZulu-Natal province); Midrand area (City of Johannesburg District, Gauteng province); East Rand and Tembisa areas (Ekurhuleni District, Gauteng province)
	Wildfire	Land fire	Ehlanzeni District Municipality, Mopani District Municipality, Vhembe District Municipality, KwaZulu-Natal province

[164] INFORM country risk profiles for 191 countries: South Africa. Available from www.inform-index.org/Countries/Country-profiles (accessed 27 May 2017).

[165] Government of South Africa, Department of Cooperative Governance and Traditional Affairs, National Disaster Management Centre, National Disaster Management Framework (2005).

[166] D. Guha-Sapir, R. Below and Ph. Hoyois, EM-DAT. Available from www.emdat.be

Year	Disaster type	Disaster subtype	Locations
2002	Epidemic	Bacterial disease	Eastern Cape, KwaZulu-Natal and Northern provinces
	Flood	Riverine flood	East London town (Buffalo City District, Eastern Cape province)
	Storm	Convective storm	Northern Cape, Eastern Cape, Limpopo and KwaZulu-Natal provinces
	Wildfire	Land fire	Eastern Cape and Mpumalanga provinces
2003	Epidemic	Viral disease	n.a.
	Flood	Riverine flood	Montagu town (Langeberg area, Cape Winelands District, Western Cape province)
	Storm	n.a.	City of Cape Town District (Western Cape province)
2004	Drought	Drought	KwaZulu-Natal, Eastern Cape, Northern Cape, Mpumalanga, North-West, Free State and Limpopo provinces
	Epidemic	Bacterial disease	Nkomazi municipality, Mbombela City and Umjindi municipality (Mpumalanga province)
	Flood	Riverine flood	City of Cape Town District (Western Cape province)
2005	Earthquake	Ground movement	Klerksdorp and Stilfontein villages (Dr Kenneth Kaunda District Municipality, North-West province)
2006	Flood	Riverine flood	Taung town (Greater Taung area, Dr Ruth Segomotsi Mompati District, North-West province), Eastern Cape province, Western Cape province
2007	Extreme temperature	Cold wave	Gauteng and Eastern Cape provinces
	Flood	Riverine flood	Cape Flats area (City of Cape Town District, Western Cape province)
	Wildfire	Forest fire	KwaZulu-Natal, Mpumalanga, Free State, Eastern Cape, Limpopo and Gauteng provinces
2008	Epidemic	Bacterial disease	Vhembe District (Limpopo province), Mpumalanga province, Gauteng province
	Flood	Riverine flood	KwaZulu-Natal province
	Storm	Convective storm	Durban City (eThekwini District, KwaZulu-Natal province)
	Wildfire	Land fire	KwaZulu-Natal and Free State provinces
2009	Flood	Riverine flood	KwaZulu-Natal province, City of Cape Town District (Western Cape province)
	Storm	Convective storm	Inchanga town (eThekwini District, KwaZulu-Natal province), Umzimkhulu area (Sisonke District, KwaZulu-Natal province), Richmond area (Umgungundlovu District, KwaZulu-Natal province), Cacadu District (Eastern Cape province), Central Karoo District (Western Cape province)
2010	Storm	Convective storm	Free State, Mpumalanga, North-West, Northern Cape, Limpopo, Gauteng, KwaZulu-Natal and Eastern Cape provinces

Year	Disaster type	Disaster subtype	Locations
2011	Flood	Riverine flood	Buffalo City, Amathole, Joe Gqabi, O.R. Tambo, Alfred Nzo and Chris Hani Districts (Eastern Cape province); Fezile Dabi, Thabo Mofutsanyana and Xhariep Districts (Free State province); City of Johannesburg, Ekurhuleni, Sedibeng and West Rand Districts (Gauteng province); Amajuba, eThekwini, iLembe, Sisonke, Ugu and Uthukela Districts (KwaZulu-Natal province); Mopani, Sekhukhune, Vhembe and Waterberg Districts (Limpopo province); Ehlanzeni and Nkangala Districts (Mpumalanga province); Frances Baard, Namakwa, Pixley ka Seme and Siyanda Districts (Northern Cape province); North-West province
	Storm	Convective storm	Meqheleng area (Ficksburg town, Thabo Mofutsanyana District, Free State province); Duduza town (Ekurhuleni District, Gauteng province); KwaZulu-Natal province
2012	Flood	Riverine flood	Bathurst, Port Alfred and Kenton-on-Sea towns (Ndlambe area, Cacadu District, Eastern Cape province); Grahamstown town (Makana area, Cacadu District, Eastern Cape province)
	Storm	Tropical cyclone	Limpopo and Mpumalanga provinces
2013	Storm	Convective storm	Bishop Lavis, Hout Bay, Gugulethu, Strand and Khayelitsha boroughs (City of Cape Town District, Western Cape province)
2014	Earthquake	Ground movement	Orkney City (Dr Kenneth Kaunda District Municipality, North-West province)
	Flood	Riverine flood	Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga and North-West provinces
2015	Drought	Drought	KwaZulu-Natal, Free State, Limpopo, Mpumalanga and North-West provinces
2016	Extreme temperature	Heat wave	North-West province
	Flood	Flash flood	Gauteng and KwaZulu-Natal provinces

Drought is the weather-related disaster that affects the highest number of people in the country. Drought disasters are often slow onset and extend over several years in South Africa. They tend to affect more people living in other areas, beyond the immediate locality of the drought and therefore having far-reaching impact on the country. The EM-DAT list does not distinguish between the 2015 drought disaster and the escalated effects in 2016 when two consecutive dry spells and seasons of below-average rainfall caused "the worst drought ever recorded" in South Africa. Whereas the 2015 drought affected 2.7 million people, the 2016 drought left nearly 14.5 million people – including 8 million people living in urban areas – without adequate access to food. Hence, the drought not only affected the traditionally drought-prone areas such as the provinces of Free State, Kwa-Zulu Natal, Limpopo, Mpumalanga and North-West. The drought also hit the country's agriculture sector badly with reduction in agricultural production and agricultural export. This affected small- and large scale farmers, rural and urban populations alike. Drought is one of the disaster types that have the greatest negative impact on the South African economy.[167]

[167] D. Guha-Sapir, R. Below and Ph. Hoyois, EM-DAT, available from www.emdat.be; RIASCO, *RIASCO Action Plan for Southern Africa, May 2016–April 2017*.

South Africa is also at risk of different types of flooding, emanating from heavy rains, cyclones and storms, and overflowing of the country's rivers, as well as floods caused by poor water drainage. Orange River – the country's main river that originates from Lesotho and flows along the borders of the provinces of Free State, Eastern Cape and Northern Cape – is also connected to Vaal River, which flows into Gauteng province. The Orange–Vaal river system is the major river system vulnerable to flooding in South Africa. Limpopo River separates South Africa from Zimbabwe, which, together with Olifant River, causes flooding in Limpopo and Mpumalanga provinces as well as flooding in the neighbouring countries of Zimbabwe and Mozambique. KwaZulu-Natal at the Indian Ocean coastline is also prone to cyclones. In 2011, the country experienced its worst flooding in living memory when storms and heavy rains due to La Niña resulted in a disaster declaration in eight of the country's nine provinces. In 2016 and 2017, the country experienced flooding again, which hit many of the urban areas and informal settlements severely. Flood disasters are the most frequent disaster type in South Africa and the main cause of disaster-related casualties.[168]

According to the EM-DAT disaster data, six of the nine provinces in the country experienced wildfires during the period 2000–2016. These had a significant impact on the agriculture and forestry sectors. The fire hazard has traditionally been associated with rainfall patterns, and the fire season coincides with the dry summer months in Western Cape province and the dry winter months in the rest of the country. Fires most commonly originate from pure natural causes or are induced by human accidents or negligence. As population density increases, and urban areas and overcrowded informal settlements with poor housing options grow, the risk of settlement fire is also on the rise. In 2017, the town of Knysna in Western Cape province experienced South Africa's most widespread urban fire disaster in living memory, in which six people died, over 10,000 people evacuated, and over 600 formal and informal houses destroyed. The fire was said to be the result of wildfires in the region and heavy winds spreading the fire further into the urban area.[169]

According to historical events, the country is also subject to occasional earthquakes owing to plate movement in the East African Rift Valley. The most destructive earthquake took place in 1969, which reached a magnitude of 6.3 on the Richter scale. Since then, minor quakes and tremors have been recorded, the last one in April 2017. The country also has an active volcano on Marion Island, located on the edge of the African Continental Plate in the Indian Ocean, 1,800 km southeast of Port Elizabeth. It last erupted in 2004 but with limited damage due to its location and far distance to the closest populated settlement.

Not included on the EM-DAT but of particular importance for the South African context are the 2008 and 2015 xenophobia outbreaks. Xenophobia can be understood as "an attitudinal orientation of hostility against non-nationals in a given population, which can include attitudes, prejudices and behaviour that reject and exclude persons, based on the perception that they are outsiders or foreigners to a community, society or national identity". In the xenophobic outbreaks in South Africa, this hostility resulted in deaths, injuries, gender-based violence and rape, and displacement, as well as economic losses for those affected as property was looted, destroyed and appropriated by local residents. Over 100,000 foreign-born nationals were displaced in 2008, and, in many cases, migrants were evacuated and/or returned to countries of origin due to the increased risk. Main locations for the attacks were urban/peri-urban areas and the informal settlements in and around Johannesburg and Pretoria, Durban, Cape Town, Port Elizabeth, East London and Polokwane. Urban violence is estimated to have grown with increased urbanization, high population density, elevated unemployment, large income inequalities, inadequate service delivery and scarce resources. Considering these factors – combined with the large influx of migrants in South Africa, often living in densely populated urban areas – the exposure of urban

[168] Government of South Africa, Department of Cooperative Governance and Traditional Affairs, National Disaster Management Centre, *National Disaster Management Framework*; RIASCO, *RIASCO Action Plan for Southern Africa, May 2016–April 2017*.

[169] Government of South Africa, Department of Environmental Affairs, "South Africa national adaptation strategy", draft (September 2016); see, for example: BBC News, "South Africa: 10,000 Knysna residents evacuated amid fire" (8 June 2017), available from www.bbc.com/news/world-africa-40199270 (accessed 25 June 2017).

populations to various forms of violence is thus increasing and posing risks in particular to migrant and other vulnerable groups.[170]

The hazards and vulnerability map of South Africa illustrates the locations of the xenophobia attacks, in addition to the overview of other main flood- and drought-prone areas, risk of cyclones and incidence of historical disaster events. As recognized by the national disaster risk management framework, natural and human-induced cross-boundary risks and humanitarian obligations in times of emergency should also be of consideration. As such, border crossings are of particular interest, as these locations are entry points into South Africa and characterized by high levels of population movement, as well as preferred areas of destination for migrants as well. Transboundary natural hazards that affect populations across the borders from South Africa, such as overflowing of Orange and Limpopo Rivers, as well as political instability and upsurge of internal violence in neighbouring countries are also risk factors for South Africa.

Climate change is further expected to increase the risk of hazards. Over time, climate change tends to be felt more indirectly, through wider development processes, such as rising food prices, the spread of diseases and illnesses, and conflicts over natural resources and their management. Climate change does however affect all sectors. Increased rainfall variability, rising temperatures and prolonged dry spells will significantly affect water supplies, agricultural production of subsistence farmers and those dependent on rain-fed agriculture. Extreme weather events are likely to have a disproportionate impact on the poorest population – rural or urban, migrants or local – in amplifying existing social inequalities. Adverse effects will also be felt by the economy. The country's draft 2016 national adaptation strategy identifies a range of socioeconomic, climate change impacts on future disaster risk. For example, epidemic outbreaks and health adversities; unpredictable agricultural output and food insecurity; impact on human settlement and damage to property and public and private infrastructure; access to basic services; forced migration; and soil erosion, land degradation, and loss of ecosystems and ecosystem services. As such, climate change is also expected to exacerbate vulnerability in South Africa.[171]

The National Disaster Risk Management Centre acknowledges that a large portion of the population lives in the margins of society with chronic vulnerabilities – in particular, rural communities and the urban poor – and are therefore more prone to hazards and recurrent threats. The development challenges of one of Southern Africa's major economies are thus of high priority in the country's future risk reduction endeavours.

Development indicators and vulnerability factors

South Africa HDI 2015: 0.666 (Rank: 119)		
Population, 2015 (Urban %) Total: 55,012,000 64.8%	GDP/capita PPP USD, 2011 12,390	Unemployment, 2015 25.1%
Gini 2010–2015 63.4	Multidimensional poverty, 2005–2015 10.3%	Education, 2015 Expected years of schooling: 13.0 years

[170] Inter-Agency Standing Committee (IASC), Inter-Agency Humanitarian Partnership Team (IAHPT), "Violence against foreigners and communities of diversity: Preparedness and response plan for the Republic of South Africa", draft (2011); IOM South Africa and UNDP South Africa, "Draft report on project implementation sites (community mapping/profile report): Support to the South African Government to strengthen communities of diversity and peace" (2012).

[171] Government of South Africa, Department of Environmental Affairs, "South Africa national adaptation strategy", draft (September 2016).

South Africa HDI 2015: 0.666 (Rank: 119)		
Health, 2015 Life expectancy: 57.7 years	HIV prevalence (ages 15–49), 2015 19.2%	Gender development and gender equality, 2015 0.962 and 0.394
International migrant stock, 2015 (% of population) 3,142,511 (5.8%)	% of SADC immigrants, 2007 58.4%	% of SADC emigrants, 2007 11.9%
People of concern, end of 2016 309,342	Refugees, 2015 112,192	IDPs, 2010–2015 (new displacement) 81,414

Sources: UNDP, *Human Development Report 2016: Human Development for Everyone* (New York, 2016).

UN DESA, *Trends in International Migrant Stock: The 2015 Revision*, UN database, POP/DB/MIG/Stock/Rev.2015 (New York, United Nations, 2015).

UNHCR, "UNHCR statistics: The world in numbers". Available from http://popstats.unhcr.org/datavizGT2016/index.html (accessed 20 July 2017).

IDMC, "IDMC global figures 2016: New displacements". Available from www.internal-displacement.org/database/ (accessed 20 July 2017).

Oxford Policy Management, "Developing financing mechanisms to support the implementation of the draft ´Policy Framework for Population Mobility and Communicable Diseases in the SADC Region´: Situational analysis", unpublished (March 2015).

South Africa[172] is ranked as a middle HDI country (119/188) and has one of the strongest economies in the region. However, growth rates have been decreasing and GDP per capita has been subsequently contracting over the past four years. It is a country of 55 million inhabitants, of whom approximately 65 per cent are living in urban areas. In recent years, the country has experienced a record-high unemployment level of 25.1 per cent as well as income inequality (Gini coefficient: 63.4); these numbers are among the highest in the SADC region and, in part, also in international comparison. Segregation and social exclusion – partly inherited from the apartheid era – has created parallel economies of the haves and the have-nots. The poorest 20 per cent of the population consumes less than 3 per cent of total expenditure, while the same expenditure level for the wealthiest 20 per cent is 65 per cent.

As a result of introducing safety nets and formal housing initiatives, poverty levels and the percentage of people living below the poverty line of USD 1.90 PPP per day have been falling. As of 2015, "only" 10.3 per cent of South Africans live in multidimensional poverty. Nonetheless, Statistics South Africa released in 2015 a report that measured poverty lines in terms of costs of food and non-food items essential for daily survival.[173] According to the study, 21.7 per cent of South Africans live in extreme poverty and 37 per cent do not have financial means to purchase both adequate food and non-food items. Disaster events, such as the recent drought, may not always have directly affected food security from the perspective of subsistence farming but are rather hitting the country's poor through their impact on markets and rising food prices. Hence, a large portion of the population in South Africa is still struggling and people are vulnerable to external shocks. Poverty, income inequality and unemployment are often referred to as the "triple threats" of South Africa.

[172] Section derived from: UNDP, Human Development Report 2016; World Bank, "The World Bank in South Africa", available from www.worldbank.org/en/country/southafrica (accessed 27 May 2017).

[173] Government of South Africa, Statistics South Africa, *Methodological Report on Rebasing of National Poverty Lines and Development of Pilot Provincial Poverty Lines: Technical Report* (Pretoria, 2011).

In addition, the country is fighting the SADC region's fourth highest HIV prevalence (19.2%) and has a life expectancy of 57.7 years, remarkably low compared to other countries of similar economic status. At the national, aggregate level, the expected number of years of schooling stands at 13 years, above the world average. From a gender perspective, South Africa is in the top among the SADC countries when it comes to equality in terms of HDI values of men and women as well as gender equality and equal opportunities for men and women (gender development and gender equality being 0.962 and 0.394, respectively).

In conclusion, South Africa may have made great progress in terms of development, yet the country is facing a number of development challenges that are stretching beyond rural South Africa and reaching the urban areas. The expansion of urban/peri-urban areas as well as unplanned areas and informal settlements has become a breeding ground for the triple threats.

Migration trends and patterns

South Africa is a symbol of hope and greener pasture for populations in many countries in the region. It is the number one preferred destination of migrants in Southern Africa, the Horn of Africa and the Great Lakes region, as well as migrants from Asia and Europe. It is estimated that approximately 3.1 million international migrants live in South Africa (5.8% of the total population).[174] In 2007, these were estimated to account for 58.4 per cent, while in 2001, according to the national census, approximately 68 per cent of these originated from other countries in the SADC region (75% from Africa in total), the majority coming from neighbouring countries, particularly Zimbabwe and Mozambique and, to some extent, Lesotho, Malawi, Swaziland and Namibia.[175]

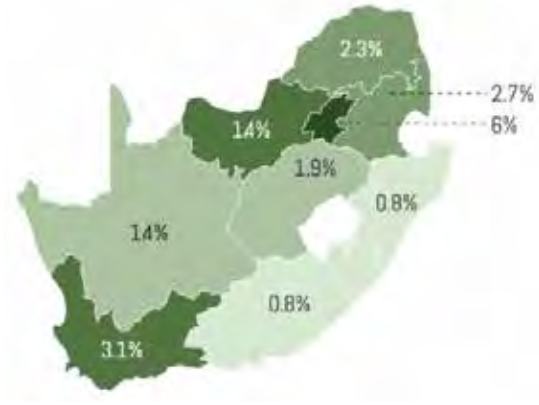
Undocumented migrants are however not part of these statistics, as estimates tend to vary – figures for South Africa range from 1 million to 2 million undocumented migrants in the country. However, with enhanced border management, it has become increasingly difficult to enter South Africa in recent years. The country has one of the most advanced border security capabilities in Africa and deploys military personnel to protect its frontiers and keep irregular migrants and cross-border crime out, with a special focus on the borders with Zimbabwe, Mozambique, Lesotho and Swaziland.[176]

Economic prospects, political stability and security offers great possibilities for migrants in South Africa. For those in need of international protection, South Africa's asylum and refugee laws – supported by the Constitution – have become renown as among the most progressive in the world, with protection of asylum seekers and refugees well beyond what many developing countries are providing. As a result, many of the new arrivals tend to apply for asylum as a way to formalize their stay in the country. It is estimated that over 65,000 refugees and 230,000 asylum seekers reside in South Africa, primarily from Somalia, the Democratic Republic of the Congo, Angola and Ethiopia.[177] The no-encampment policy of the country grants asylum seekers and refugees freedom of movement, right to settle and work anywhere in the country, and access social grants available for South African nationals. The Refugee Act, in particular Section 35, allows for the designation of areas, centres, or places for temporary reception and accommodation of asylum seekers and refugees in case of large-scale influx. The urban refugee model has enabled refugees to establish independent livelihoods and live integrated lives within the local communities.[178]

[174] UN DESA, *Trends in International Migrant Stock: The 2015 Revision*.
[175] Government of South Africa, Statistics South Africa, Census 2011; Government of South Africa, Statistics South Africa, *Community Survey 2016* (Pretoria, 2016).
[176] C. Horwood, *In Pursuit of the Southern Dream: Victims of Necessity*.
[177] UNHCR, "UNHCR statistics: The world in numbers", available from http://popstats.unhcr.org/datavizGT2016/index.html (accessed 20 July 2017).
[178] Government of South Africa, Refugees Act, 1998 (Act No. 130 of 1998), *Government Gazette*, vol. 402, no. 19544 (Cape Town, 1998).

According to Statistics South Africa's Community Survey in 2016, the majority of migrants live in urban areas, Gauteng province being home to almost 24 per cent of the total migrant population. It is by far the province with the highest proportion of foreign-born migrants (14%) – higher than foreign-born migrants in all other provinces combined. Internal migration from other provinces to Gauteng is however at a far higher total estimate (37% of South Africans in Gauteng originate from other provinces). Gauteng is also the top migrant-sending province in South Africa.[179]

% of foreign-born residents per province, 2016

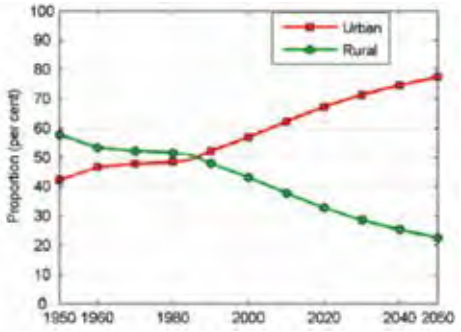


Source: StatsSA Community Survey 2016

The rural-to-urban migration has, ever since independence, contributed to more rapid urbanization. In 2050, South Africa's urbanization rate is projected to reach nearly 80 per cent. Importantly, rural roots still remain strong and movement tends to be circular with frequent returns to rural homes and places of origin. Migration is thus a defining feature of the ongoing population and demography changes in South Africa.[180]

Nonetheless, changes in the migration, asylum and refugee policy framework are in the making. In June 2016, the *Green Paper on International Migration* was presented (and later tabled as a white paper), with a vision to embrace international migration for development while safeguarding sovereignty, peace and security. Changes in the immigration policy as well as the Refugee Act are expected – aiming to curb smuggling and irregular migration flows, and, at the same time, tightening legal loopholes. Currently, the high number of asylum claims have caused major system backlogs. The *Green Paper* endeavours to reduce the number of unfounded asylum applications (currently estimated at an average of 90% of all claims) – such as "economic migrants" using the asylum system to regularize their stay – by restricting rights of asylum seekers during the asylum process. Asylum seekers would thus not have the automatic right to work or study and basic services would be provided in processing centres and "secure detention centres" near the borders.[181]

South Africa urban versus rural population, 1950–2050 (%)



Source: UN DESA, Population Division, "Country profile: South Africa", World Urbanization Prospects: The 2014 Revision.

[179] Government of South Africa, Statistics South Africa, Community Survey 2016; see also for reference: https://africacheck.org/factsheets/geography-migration/

[180] UN DESA, Population Division, "Country profile: South Africa", World Urbanization Prospects: The 2014 Revision. Available from https://esa.un.org/unpd/wup/Country-Profiles/

[181] Government of South Africa, Department of Home Affairs, *Green Paper on International Migration, Government Gazette*, vol. 738, no. 40088 (Pretoria, 24 June 2016). Available from www.gov.za/sites/www.gov.za/files/40088_gon738.pdf

This shift towards an encampment policy and a more restrictive approach to immigration, asylum, and refugees has fuelled concerns about the violation of the constitutional rights and freedoms of non-citizens in South Africa. An ongoing debate about encampment and the establishment of processing centres in strategic border posts is posing question on these measures' potential effect on irregular migration, social inclusion and exclusion, as well as social cohesion and xenophobia.

Disaster risk management

South Africa's disaster risk management system is founded on the Disaster Management Act, 2002 (Act No. 57 of 2002) and the Disaster Management Amendment Act (Act No. 16 of 2015).[182] The Amendment Act redefines, among other changes, vulnerability to now include physical, social, economic, and environmental factors or processes increasing a community's vulnerability to hazards, and the terminology "disaster risk reduction" to encompass anticipation of future disaster risk; reduction of existing exposure, hazard or vulnerability; and improved resilience.

The structure of the disaster risk management system is led by the President and the Minister of Cooperative Governance and Traditional Affairs (COGTA). The Intergovernmental Committee on Disaster Management was also established, consisting of cabinet ministers as well as provincial and municipal council representatives. The National Disaster Management Advisory Forum serves as the "body in which national, provincial and local government and other disaster management role players consult one another and coordinate" – in the Amendment Act officially recognized as the South African National Platform for Disaster Risk Reduction. The Advisory Forum comprises government institutions and traditional representatives; the private sector; NGOs and organizations for women, children, the elderly and people with disabilities; international organizations; and institutions of higher learning and academia. Its role is to make recommendations to the Intergovernmental Committee on Disaster Management and to provide advice to other relevant State and non-State actors.[183]

The National Disaster Management Centre (NDMC) is a government institution mandated to "promote an integrate and coordinated system of disaster management, with special emphasis on prevention and mitigation, by national, provincial and municipal organs of state, statutory functionaries, other role players involved in disaster management and communities". The NDMC must develop guidelines for disaster management plans and strategies, which will direct the practical application of the disaster risk management framework and harmonize disaster management efforts across the country. Currently, the NDMC is developing a total of 21 guidelines that will provide a harmonized disaster management framework across provinces and municipalities. The most recent guideline – which directs the development and structure of disaster management plans – was published in the *Government Gazette* in May 2017.[184]

The 2005 National Disaster Management Framework specifies the parameters for a coherent, transparent, and inclusive framework on disaster management for the country and links disaster risk reduction with development. Four performance areas are identified, namely, an integrated institutional capacity for disaster risk management, disaster risk assessment, disaster risk reduction, and response and recovery. The Framework recognizes the hazards and threats beyond South Africa's borders in neighbouring countries and vice versa, and thus stresses the importance of regional cooperation as a way of reducing disaster risk.[185] This is reiterated in the *National Disaster Management Centre Annual Report 2014–2015*: "Measures taken in South Africa can increase or

[182] Government of South Africa, Disaster Management Act, 2002 (Act No. 57 of 2002), *Government Gazette*, vol. 451, no. 24252 (Cape Town, 2003), available from www.cogta.gov.za/cgta_2016/wp-content/uploads/2016/06/DISASTER-MANAGEMENT-ACT.pdf; Government of South Africa, Disaster Management Amendment Act (Act No. 16 of 2015), *Government Gazette*, vol. 606, no. 39520 (Cape Town, 2015), available from www.gov.za/sites/www.gov.za/files/39520_Act16of2015DisasterManAmendAct.pdf

[183] Ibid.

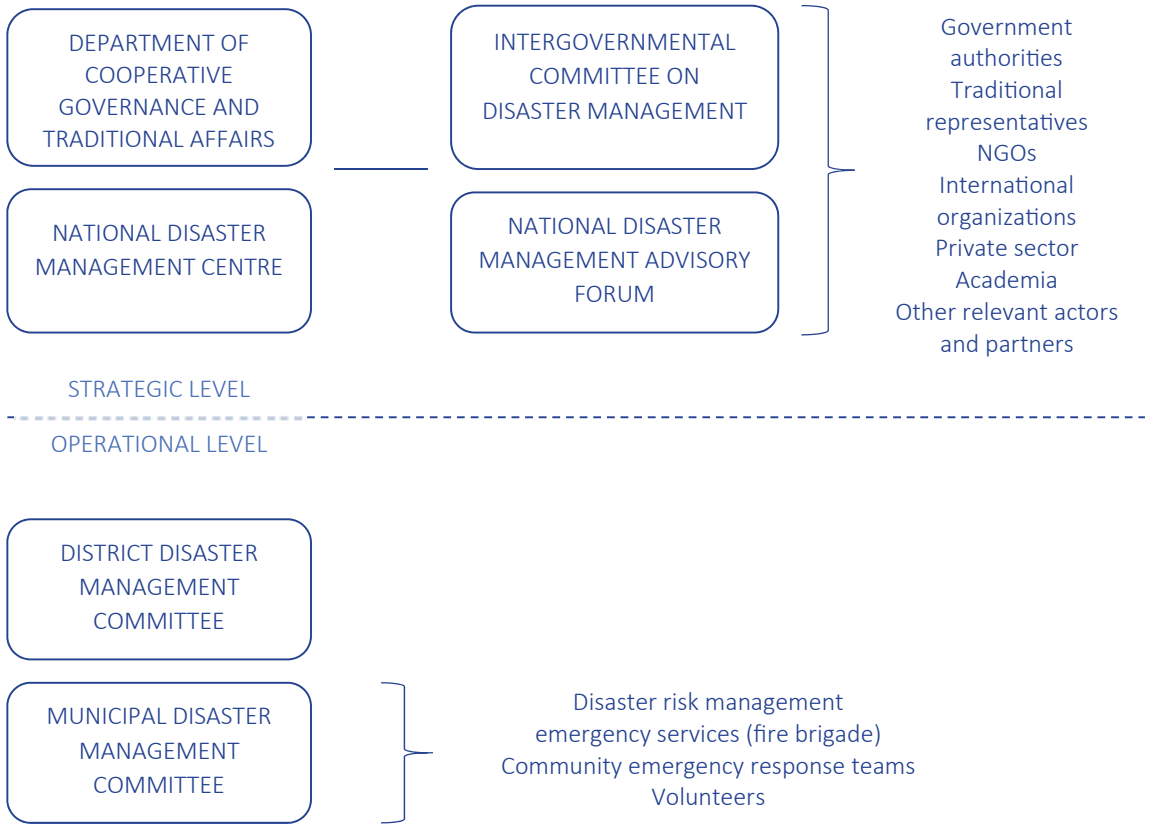
[184] Government of South Africa, Directorate of Policy Development and Regulatory Frameworks, "Guideline on the development and structure of a disaster management plan", Department of Cooperative Governance and Traditional Affairs Notice 415 of 2017, *Government Gazette*, no. 40865 (26 May 2017). Available from www.gov.za/sites/www.gov.za/files/40865_gen415.pdf

[185] Ibid.

reduce risks in neighbouring countries, just as potential dangers across (the country's) borders can directly affect South Africa". It further raises the concern over development challenges and emerging issues at the provincial and local levels, including poverty, unemployment, urbanization, migration and climate change. Collaboration with other countries and regionally is stressed as essential for South Africa to continuously improve the manner in which it responses to development and disaster management challenges.[186]

Disaster management centres exist at the provincial and municipal (metropolitan and district municipality) levels, which are responsible for the preparation of disaster risk management and contingency plans and strategies. Prevention and mitigation measures should also be integrated into development plans and programmes. Provincial and municipal advisory forums may also be established at these levels. Some local authorities handle disaster risk management with emergency services, working closely with the local fire brigade. The National Urban Search and Rescue (USAR) Framework also enables operational rapid response and life-saving capacity.[187] Pilot initiatives establishing community emergency response teams have also been introduced at the local level, such as those in Ekurhuleni and Johannesburg.

The different levels of disaster risk management interlink and communication channels are defined in the Disaster Management Act as a way of strengthening the national–provincial–municipal level linkages.



One example of a disaster management plan is that of the City of Tshwane Municipal Disaster Management Centre, which defines the purpose of disaster management planning as a means to identify and clarify roles and responsibilities of different stakeholders and outline priority risk

[186] Government of South Africa, Department of Cooperative Governance and Traditional Affairs, National Disaster Management Centre, National Disaster Management Centre Annual Report 2014–2015 (Pretoria, 2015).

[187] Government of South Africa, Department of Cooperative Governance and Traditional Affairs, National Urban Search and Rescue Framework, *Government Gazette*, vol. 120, no. 37374 (26 February 2014). Available from www.gov.za/sites/www.gov.za/files/37374_gen120.pdf

reduction initiatives that will promote resilience among communities within the city. It also calls for and makes reference to contingency planning framework. However, comprehensive national contingency plans for South Africa is yet to be developed – awaiting guidelines from the NDMC – and district- and municipal-level contingency plans are developed ad hoc. Various contingency plans as well as plans for single hazards do however exist.[188]

Partner-driven disaster risk management and contingency planning have been developed as a way of enhancing preparedness and response capacity. The Contingency Plan on Violence against Foreigners and Communities of Diversity, developed by the Inter-Agency Standing Committee (IASC) and the United Nations Protection Working Group, is one such example; it focuses solely on events of human-made humanitarian crises triggered by outbreaks of xenophobic violence, considering not only the history of events in 2008 but also the large number of international migrants residing in South Africa. Main threats relate to violation of rights of foreign nationals due to violence, displacement, illegal constraint in livelihood opportunities and denial of access to basic services, assuming normal State justice and social welfare mechanisms will fail to provide protection of those affected. The worst-case scenario builds on an estimate of 5,000 persons per week as a trigger, with greater cumulative estimates over time.[189] In complement, the National Action Plan to Combat Racism, Racial Discrimination, Xenophobia and Related Intolerance (2016–2021) exists, recognizing the need for social cohesion and building on the values of human dignity, equality, and the advancement of human rights and freedom.[190]

Specific attention to the need for urban risk reduction and resilience-building in South Africa – linking disaster risk management with development locally – has been formulated at the policy level. The Integrated Urban Development Framework was introduced in 2013, in view of an increasing rapid urbanization in South Africa and with the aim to "guide the development of inclusive, resilience and livable urban settlements in cities and towns". The Framework consists of nine policy levers, namely: 1) integrated urban planning and management; 2) integrated transport and mobility; 3) integrated sustainable human settlements; 4) integrated urban infrastructure; 5) efficient land governance and management; 6) inclusive economic development; 7) empowered active communities; 8) effective urban governance; and 9) sustainable finances. All policy levers are to be understood in conjunction with urban disaster risk reduction and mitigation interventions for urban resilience and safety. The Integrated Urban Development Framework can be read in the light of prevention and risk reduction of hazards, development challenges and vulnerability factors in urban and peri-urban areas, high population density and exposure to hazards, and the resilience of urban communities. In essence, it binds together disaster risk reduction with development planning and financing in the short-, medium- and long-term perspectives.[191]

In addition to the Integrated Urban Development Framework, several recent initiatives placing urban resilience at the centre of urban planning in South Africa have emerged. For example, the City of Johannesburg's Growth and Development Strategy for 2040 introduces urban resilience – socially, environmentally and economically – as a key theme. Durban and Cape Town are both among the 100 Resilient Cities, an initiative established by the Rockefeller Foundation. Durban, being the poorest metropolitan area in South Africa, is exploring ways to merge climate change adaptation with life-skill development, livelihood opportunities for the poor and inclusive social cohesion. Cape Town is piloting initiatives to reduce unemployment, poverty and socioeconomic inequalities as a way of mitigate the risks of future civil unrest and xenophobia. These initiatives all feed back into the integrated framework and can be used to reinforce efforts for disaster risk reduction in South Africa.[192]

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188 Government of South Africa, City of Tshwane, Municipal Disaster Management Centre, *City of Tshwane Disaster Management Plan* (Tshwane, 2011).

189 IASC, IAHPT, "Violence against foreigners and communities of diversity: Preparedness and response plan for the Republic of South Africa".

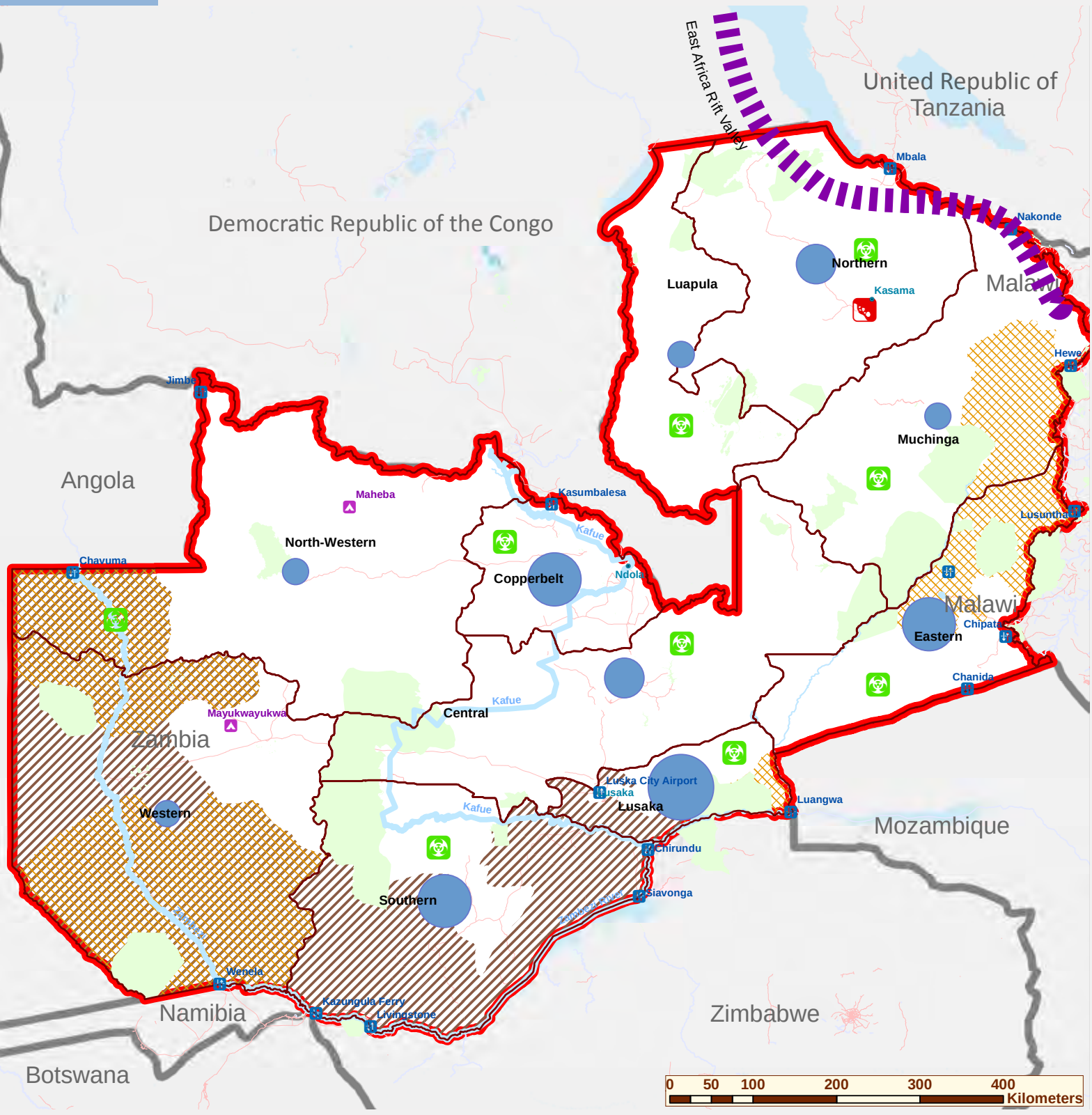
190 Government of South Africa, Department of Justice and Constitional Development, "National action plan to combat racism, racial discrimination, xenophobia and related intolerance, 2016–2021", draft for public consultation (2015).

191 Government of South Africa, Department of Cooperative Governance and Traditional Affairs, *Integrated Urban Development Framework: A New Deal for South African Cities and Towns* (Pretoria, 2016).

192 P. Harrison et al., Urban Resilience Thinking for Municipalities (Johannesburg, University of Witwatersrand and Gauteng City-Region Observatory, 2014); 100 Resilient Cities–Pioneered by the Rockefeller Foundation (100RC), see www.100resilientcities.org/

Around 15,000 residents of Imizamo Yethu, an informal settlement in the City of Cape Town, are left homeless due to the highly damaging fire. © Sullivan Photography

4.5. Zambia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Hewe
Muchinga
Jimbe
Angola
Maheba
Kasumbalesa
Kafue
North-Western
Copperbelt
Ndola
Lusunthal
Chavuma
Malawi
Eastern
Chipata
Chanida
Mayukwayukwa
Central
Zambia
Kafue
Luska City Airport
Lusaka
Lusaka
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Western
Mozambique
Chirundu
Kafue
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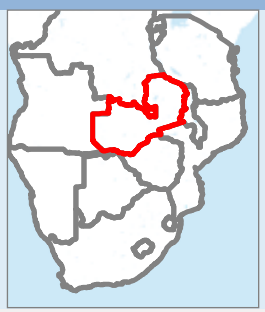
ZAMBIA
HAZARDS AND VULNERABILITY



Legend

- ADM0 Country Level
- ADM1 Provincal Level
- Southern Africa Country
- City
- Border Crossing
- Refugee Camp
- Cross Border Rive
- Waterways
- Waterbodies
- Natural Feature
- Roads
- Drought Prone Area
- Flood Prone Area
- East Africa Rift Valley Fever

Population Density

- 0–1,000,000
- 1,000,001–1,500,000
- 1,500,001–2,000,000
- 2,000,000+

Zambia Hazards Impacts (From 2000–2016)

Hazard Type	People Affected
Drought	1,200,000
Landslide	70
Epidemic	26,982
Flood	3,049,008

Hazard profile and history of disaster events

According to the 2017 INFORM Risk Index, Zambia is ranked at a value of 4.1, indicating medium risk. While the risk dimension of hazard and exposure is low in comparison, the factors increasing the risk are the country's vulnerabilities as well as lack of coping capacity. Main hazards include floods and drought as well as epidemic outbreaks.[193]

	Value	Rank	Trend
INFORM Risk	4.1	79	–
Hazard and Exposure	2.1	132	–
Vulnerability	5.3	40	–
Lack of Coping Capacity	6.1	48	–

The National Disaster Management Policy identifies three main types of disasters posing potential risks to Zambia. The first is called disasters associated with human hazards, including a variety of hazards including but not limited to epidemics, floods, fires and food insecurity as well as deforestation, poor drainage and solid waste management, gender-based violence, and poverty leading to prostitution, alcohol and drug abuse. The second is disasters associated with natural hazards and include climate variability such as earthquakes and heavy rainy storms, livestock and crop diseases, and siltation from floods. The third disaster type is associated with complex humanitarian emergencies and is defined as influx of refugees, religious conflicts and internal displacement.[194]

The table from the EM-DAT database lists disaster events during the period 2000–2016. During the period, Zambia recorded 27 disaster events affecting nearly 4.3 million people accumulatively.[195]

Year	Disaster type	Disaster subtype	Locations
2000	Epidemic	Bacterial disease	Mununga and Luapula provinces
	Flood	Riverine flood	Chiawa area (Kafue District, Lusaka province)
2001	Epidemic	Bacterial disease	Petauke District (Eastern province)
	Flood	n.a.	Eastern, Northern, North-Western, Copperbelt, Central and Lusaka provinces
2003	Epidemic	Bacterial disease	Lusaka, Southern, Copperbelt, Northern and Central provinces
	Flood	Riverine flood	Gwembe District (Southern province), Lusaka province
2004	Flood	Riverine flood	Senanga, Mongu, Kalabo and Lukulu Districts (Western province); Chavuma and Zambezi Districts (North-Western province)
2005	Drought	Drought	Southern and Western provinces
	Epidemic	Bacterial disease	Lusaka, Kabwe, Chihombo, Kapiri Mposhi, Mufulira, Kasempa, Copperbelt, Central, Eastern, Luapula, North-Western and Western Districts (Lusaka, Central Copperbelt, Southern, Luapula and Eastern provinces)
	Flood	Riverine flood	Kazungula District (Southern province)
2006	Epidemic	Bacterial disease	Lusaka, Central, Copperbelt, Eastern, Luapula, North-Western and Southern provinces

[193] INFORM country risk profiles for 191 countries: Zambia. Available from www.inform-index.org/Countries/Country-profiles (accessed 27 May 2017).

[194] Government of Zambia, Office of the Vice President, Disaster Management and Mitigation Unit (DMMU), *National Disaster Management Policy* (Lusaka, 2015).

[195] D. Guha-Sapir, R. Below and Ph. Hoyois, EM-DAT. Available from www.emdat.be

Year	Disaster type	Disaster subtype	Locations
2007	Epidemic	Bacterial disease	Lusaka province
	Flood	Riverine flood	North-Western province; Copperbelt province; Western province; Central province; Chama and Mambwe Districts (Eastern province); Kapiri Mposhi District (Central province); Monze, Mazabuka, Siavonga, Sinazongwe and Namwala Districts (Southern province); Mumbwa and Mkushi Districts (Central province); Kafue District (Lusaka province)
2008	Epidemic	Bacterial disease	Mpulungu District (Northern province); Mazabuka and Livingstone Districts (Southern province); Lusaka District (Lusaka province); Copperbelt province
	Flood	Riverine flood	Western and North-Western provinces
2009	Epidemic	Bacterial disease	Lusaka, Southern, Copperbelt, Northern and Luapula provinces
	Flood	Riverine flood	Shang'ombo, Mongu, Kalabo, Lukulu and Senanga Districts (Western province); North-Western province; Northern province; Central province; Eastern province
2010	Flood	Riverine flood	Sinazongwe, Livingstone and Gwembe Districts (Southern province); Mpulungu and Mbala Districts (Northern province); North-Western province; Lusaka province
	Landslide	Landslide	Mpulungu District (Northern province)
2011	Flood	Riverine flood	Chavuma and Zambezi Districts (North-Western province); Lukulu, Kalabo, Kaoma, Mongu, Senanga, Sesheke and Shang'ombo Districts (Western province); Itezhi-Tezhi, Kazungula, Namwala, Mazabuka and Sinazongwe Districts (Southern province); Chibombo District (Central province); Kafue and Lusaka Districts (Lusaka province)
2012	Epidemic	Bacterial disease	Mpulungu District (Northern province)
2013	Flood	Riverine flood	Nagoma and Kabulwebulwe towns (Mumbwa District, Central province)
2014	Flood	Riverine flood	Mazabuka District (Southern province)

Flooding is the disaster event occurring with highest frequency and also the cause of greatest number of casualties and economic damage. The main rivers include Zambezi and Kafue, which put the North-Western, Western, Southern and Lusaka provinces at risk of riverine flooding. Heavy rains can also cause flooding that extends beyond the traditional flood plains and other rural and urban areas. The 2007 flood disaster is the worst recorded in the twenty-first century, during which over 1.5 million people were affected. In the beginning of 2017, heavy rains and thunderstorms caused flash floods in North-Western, Central, Copperbelt, Southern and Lusaka provinces. Houses and infrastructure suffered damages and destruction, roads were overflowing as the rain blocked the water drainage system, while hundreds of families were reported homeless and in need of emergency relief. In particular, in the informal settlements, drainage infrastructure is either poorly maintained or completely non-existent.[196]

[196] Government of Zambia, Office of the Vice President, DMMU, *National Disaster Management Policy*; SADC, *Regional Humanitarian Response: Final Report, March 2017* (Gaborone, 2017).

Drought occurs as a result of below-normal rainfall and also coincides with the traditional rainy season. Areas in Eastern, Muchinga, North-Western and Western provinces are particularly prone to drought, but in the event of drought disaster, the risk of food insecurity is faced by populations all over. The 2016 El Niño drought in Southern Africa did affect Zambia moderately, with approximately 1 million people affected and subject to food shortages and poor water quality and sanitation. The country did not however declare any national state of disaster and humanitarian assistance was provided according to needs.[197]

Epidemic outbreaks occur constantly; cholera, for example, is endemic in Zambia. The occurrence in Zambia usually coincides with the rainy season (November–April). Urban areas with a high population density have traditionally been the first affected, primarily in poor neighbourhoods and unplanned (informal) settlements without adequate access to water, sanitation and hygiene. In 2005/2006, Zambia suffered a large-scale outbreak of cholera, making it the worst cholera epidemic the country had seen at the time, with over 200 cases appearing every week, 90 per cent of which were concentrated in the capital Lusaka. In 2008/2009, another major outbreak occurred with approximately 7,500 people affected, assumed to be linked with the simultaneous cholera epidemic in Zimbabwe. In order to curb the spread of cholera across borders, health personnel were deployed to the border areas for entry screening. Other disease risks in Zambia include but are not limited to diarrhoea, typhoid fever and malaria.[198]

As the East African Rift Valley passes through Zambia in the north, the occurrence of earthquakes is not uncommon in the provinces of Luapula, Northern and Muchinga, but not of significant magnitude and with limited damage thus far. The largest earthquake in Zambia in 2017 was of magnitude 5.9 in Kaputa in Northern province. Although not a major event, it reportedly left some people injured and homeless. As the African plate is shifting and there is underground movement in the East African Rift Valley, Zambia remains at risk of recurrent earthquakes, their impact largely depending on magnitude as well as the location of the epicentre and the population density in the location, the types of houses and the infrastructure in the area.[199]

The disaster category defined by the national policy as complex emergency refers to the influx of refugees or internal displacement following conflict or violence. In this sense, the situation in neighbouring countries is a determining factor for outbreaks of such crisis. With its proximity to the Great Lakes region and the Horn of Africa, Zambia is a potential country of destination and refuge for people fleeing conflict and fear of prosecution. Furthermore, incidences of xenophobia have occurred within the country. The most recent outbreak in 2016 started in Lusaka and was primarily directed towards the Rwandan immigrant population – including violence, rioting and looting of shops as well as the death of two people.[200]

The 2007 National Adaptation Programme of Action (NAPA) on Climate Change identifies the adverse effects of climate change on existing hazards and already vulnerable factors. The NAPA recognizes the severity of some of the country's main hazards, namely, drought, floods and extreme weather. It also identifies climate sensitivities that are likely to be negatively impacted, including but not limited to overall socioeconomic and environmental dimensions of development, as well as specific sectors such as agriculture, food security, wildlife, forestry, water and energy security, and human health and disease control. The risk of more widespread epidemic outbreaks such as cholera and dysentery is also addressed in the NAPA. Apart from protection of people and infrastructure under the national disaster risk management system, the Government is also

197 Ibid.

198 Ibid. See also, for reference: IFRC, "DREF operation final report". Available from http://reliefweb.int/sites/reliefweb.int/files/resources/6E8F5313F2BB88658525772100 59DC93-Full_Report.pdf

199 Government of Zambia, Office of the Vice President, DMMU, *National Disaster Management Policy*.

200 Government of Zambia, Office of the Vice President, DMMU, *National Disaster Management Policy*. See for reference, for example: *BBC*, "Zambia xenophobic riot: Two burned alive in Lusaka" (20 April 2016), available from www.bbc.com/news/world-africa-36092917

committed to implementing climate change initiatives that enhance the adaptive capacity and reduce vulnerabilities of at-risk populations.[201]

The Zambia hazards and vulnerability map illustrates the main hazard areas for drought, flooding and the location of the East African Rift Valley in the country. According to the historical data, incidences of disaster events confirm the widespread risk of epidemic outbreak in the country. It also highlights high population numbers in Lusaka and Southern, Copperbelt and Eastern provinces, which indicates exposure of a greater number of people. Border areas are of particular concern, as Zambia shares a number of transboundary hazards, such as Zambezi River, which moves through the country from its northwest border with Angola to the southern border with Namibia, from where it continues lingering along Zambia's southern border past Botswana, Zimbabwe and Mozambique. Cross-border displacement into Zambia due to flooding in neighbouring countries and communities as well as the migration of epidemic outbreaks into Zambia are potential risk factors to consider. Main urban areas are also marked as relevant to the hazard analysis, as they represent melting pots of development and development challenges, which increase the already high vulnerabilities of the country's population.

Development indicators and vulnerability factors

Zambia HDI 2015: 0.579 (Rank: 139)		
Population, 2015 (Urban %) Total: 16,212,000 40.9 %	GDP/capita PPP USD, 2011 3,626	Unemployment, 2015 10.7%
Gini, 2010–2015 55.6	Multidimensional poverty, 2005–2015 54.4%	Education, 2015 Expected years of schooling: 12.5 years
Health, 2015 Life expectancy: 60.8 years	HIV prevalence (ages 15–49), 2015 12.9%	Gender development and gender equality, 2015 0.924 and 0.526
International migrant stock, 2015 (% of population) 127,915 (0.8%)	% of SADC immigrants, 2007 2.6%	% of SADC emigrants, 2007 2.2%
People of concern, end of 2016 57,209	Refugees, 2015 24,666	IDPs, 2010–2015 (new displacement) 31,675

Sources: UNDP, *Human Development Report 2016: Human Development for Everyone* (New York, 2016).

UN DESA, *Trends in International Migrant Stock: The 2015 Revision*, UN database, POP/DB/MIG/Stock/Rev.2015 (New York, United Nations, 2015).

UNHCR, "UNHCR statistics: The world in numbers". Available from http://popstats.unhcr.org/datavizGT2016/index.html (accessed 20 July 2017).

IDMC, "IDMC global figures 2016: New displacements". Available from www.internal-displacement.org/database/ (accessed 20 July 2017).

Oxford Policy Management, "Developing financing mechanisms to support the implementation of the draft ´Policy Framework for Population Mobility and Communicable Diseases in the SADC Region´: Situational analysis", unpublished (March 2015).

[201] Government of Zambia, Ministry of Tourism, Environment and Natural Resources, *Formulation of the National Adaptation Programme of Action on Climate Change: Final Report* (Lusaka, 2007).

Zambia[202] is ranked as a country of medium human development and is classified as a least developed country. The country's average economic growth rate was high between 2004 and 2014, at 7.4 per cent, but reduced in pace to around 3 per cent in 2015 and 2016. Zambia is a landlocked country with 16 million inhabitants. Being among some of the poorer countries in Africa, Zambia is subject to a range of development challenges.

While unemployment is estimated at 10.7 per cent (2015), a large part of the economy is still informal. With a Gini coefficient of 55.6, income inequality in the country is a fact, signifying that despite the high economic growth in the past, wealth has not been evenly distributed. Poverty measured in multidimensional terms is affecting more than half of the population (54.4%).

With an HIV prevalence rate of 12.9 per cent, the country is facing negative effects such as reduced economic productivity within the working-age population, increased mortality rates and falling life expectancy that currently stands at 60.8 years. Gender development when it comes to HDI ratio between men and women is just below the world average (0.924), indicating that women are marginally disadvantaged in terms of human development indicators. Gender equality index, however, reveals increasing inequality levels in terms of prospects of achievement (0.526).

With development vulnerabilities largely concentrated in rural areas, a rural-to-urban migration trend is emerging. Currently, the country has an urbanization rate of 40.9 per cent. The rapid expansion of urban areas has not been able to fully cater to employment, basic service delivery or infrastructure; consequently, the country has seen a rise in urban poverty levels and additional layers of vulnerability specific to the urban space. The National Development Plan 2017–2021 sheds light on priority areas in response to these challenges, among them job creation, poverty and vulnerability, reduction in development inequalities and enhancing human development.

Migration trends and patterns

Zambia is primarily a transit country for Central and East African migrants moving along the southern route primarily to South Africa. In the IOM study "Health Vulnerabilities Study of Mixed Migration Flows from the East and Horn of Africa and the Great Lakes Region to Southern Africa" (2013), the city of Lusaka, city of Ndola and town of Nakonde were identified as the main transit points. In addition, the so-called "criss-crossing" along the porous borders of Zambia and Malawi also occurs.[203]

Although not a traditional destination country, Zambia is still hosting a small international – predominantly intraregional – migrant community (0.8% of the total population).[204] The majority of the country's immigrants include people of Somali and Congolese origin. Zambia's Immigration and Deportation Act (Act No. 18 of 2010) provides for regularized cross-border movement with a specific temporary "cross-border permit" for foreign nationals from neighbouring countries or regional organizations such as the SADC and COMESA. Equally, for citizens from bordering countries who do not hold passports, border passes can be issued for the purpose of visiting prescribed border areas. Being a long-standing hub for Sino-African partnership and South–South cooperation between China and African countries, Zambia is hosting a Chinese migrant population operating under the many Chinese investment projects in the copper mines, construction, infrastructure and manufacturing sectors.[205]

[202] Section derived from: UNDP, *Human Development Report 2016*; World Bank, "The World Bank in Zambia", available from www.worldbank.org/en/country/zambia (accessed 27 May 2017).

[203] IOM, *Health Vulnerabilities Study of Mixed Migration Flows from the East and Horn of Africa and the Great Lakes Region to Southern Africa* (Geneva, 2013). Available from https://publications.iom.int/books/health-vulnerabilities-mixed-migrants-east-and-horn-africa-and-great-lakes-southern-africa

[204] UN DESA, *Trends in International Migrant Stock: The 2015 Revision*.

[205] IOM, *Health Vulnerabilities Study of Mixed Migration Flows from the East and Horn of Africa and the Great Lakes Region to Southern Africa*; Government of Zambia, Immigration and Deportation Act 2010 (Immigration and Deportation Bill No. 18 of 2010).

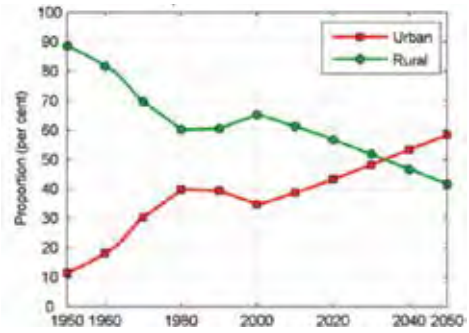
In the 2016 *Trafficking in Persons Report* of the US Department of State, Zambia was categorized as a Tier 2 source, transit and destination country for forced labour and sex trafficking. Mostly, trafficking is believed to take place within the country, targeting women and children from rural Zambia who are taken to the urban areas and exploited for forced labour.[206] In 2015, the country hosted approximately 57,000 people of concern, of whom nearly 25,000 were refugees, originating primarily from the Great Lakes region. The country also hosts former Angolan and Rwandan refugees who have remained in Zambia as immigrants after the cessation clauses revoked their refugee status.[207]

Migration in Zambia is thus mixed, as – in addition to the economic migrants – migrant population also includes refugees, asylum seekers, and other migrants that, more often than not, enter and/or transit Zambia irregularly. As with other countries, no exact figures on irregular migration exist for Zambia. Those apprehended by the Zambian border police end up in detention facilities for violating the Immigration and Deportation Act (Act No. 18 of 2010), often being exposed to a range of vulnerabilities and health risks due to the poor conditions in these detention facilities.[208]

In terms of protection of migrants, Zambia has made provisions for the protection of vulnerable migrants through the recently launched "Guidelines for Protection Assistance to Vulnerable Migrants in Zambia". The guidelines were developed by the Department for Immigration – with support from IOM Zambia – as an information tool for front-line immigration officials who face vulnerable migrants in Zambia and aim to enhance protection of vulnerable migrants and strengthen the rights-based approach to migrants of concern. These are identified by the guidelines as to include rejected asylum seekers, victims of trafficking, unaccompanied and separated minors, stranded irregular migrants, stateless migrants and other vulnerable migrants in need of protection assistance.[209]

The guidelines also include IDPs. The IDMC estimates that new disaster-induced displacements reached approximately 32,000 during the period 2010–2015.[210]

Zambia urban versus rural population, 1950–2050 (%)



Source: UN DESA, Population Division, "Country profile: Zambia", World Urbanization Prospects: The 2014 Revision.

Rural-to-urban migration is becoming increasingly common in Zambia. As urban centres are emerging and growing, so does urban population. The proportion of the population currently living in urban areas is estimated to be just above 40 per cent of the total population (2015). In 2050, Zambia's urban population is projected to reach 60 per cent.[211]

206 US Department of State, *Trafficking in Persons Report June 2016* (Washington, D.C., 2016), pp. 400–402.

207 UNHCR, "UNHCR statistics: The world in numbers", available from http://popstats.unhcr.org/datavizGT2016/index.html (accessed 20 July 2017).

208 IOM, *Health Vulnerabilities Study of Mixed Migration Flows from the East and Horn of Africa and the Great Lakes Region to Southern Africa*; Government of Zambia, Immigration and Deportation Act 2010 (Immigration and Deportation Bill No. 18 of 2010).

209 Government of Zambia and IOM, *Guidelines: Protection Assistance for Vulnerable Migrants in Zambia* (Lusaka, 2016).

210 IDMC, "IDMC global figures 2016: New displacements". Available from www.internal-displacement.org/database/ (accessed 20 July 2017).

211 UN DESA, Population Division, "Country profile: Zambia", World Urbanization Prospects: The 2014 Revision. Available from https://esa.un.org/unpd/wup/Country-Profiles/

According to the national Population and Housing Census of 2010, Lusaka province is the number one preferred destination. Lusaka is also the top province in terms of net migration (38.2% in-migration compared with 11.6% outmigration). Copperbelt province has the highest outmigration (22.4%). Following the general trend, economic prospects and work opportunities in the urban areas are providing hopeful alternatives to the poverty-ridden rural areas.[212]

Disaster risk management

Disaster risk management in Zambia is based on the country's Disaster Management Act (Act No. 13 of 2010). The National Disaster Management Policy, revised in 2015, has a vision to have a sustainable safety net for the protection of citizens, material assets and the environment. The Policy aims to "develop, coordinate and monitor disaster risk management [programmes] in order to minimize loss of life, damage to property and the environment".[213]

The Policy acknowledges that the development challenges, such as low formal employment in rural areas and inadequate access to basic services, have been drivers for rural-to-urban migration and rapid urbanization, putting pressure on urban resources and service delivery related to housing, health, nutrition and clean water supply. The result is environmental degradation and increased disaster vulnerability among the urban poor.[214]

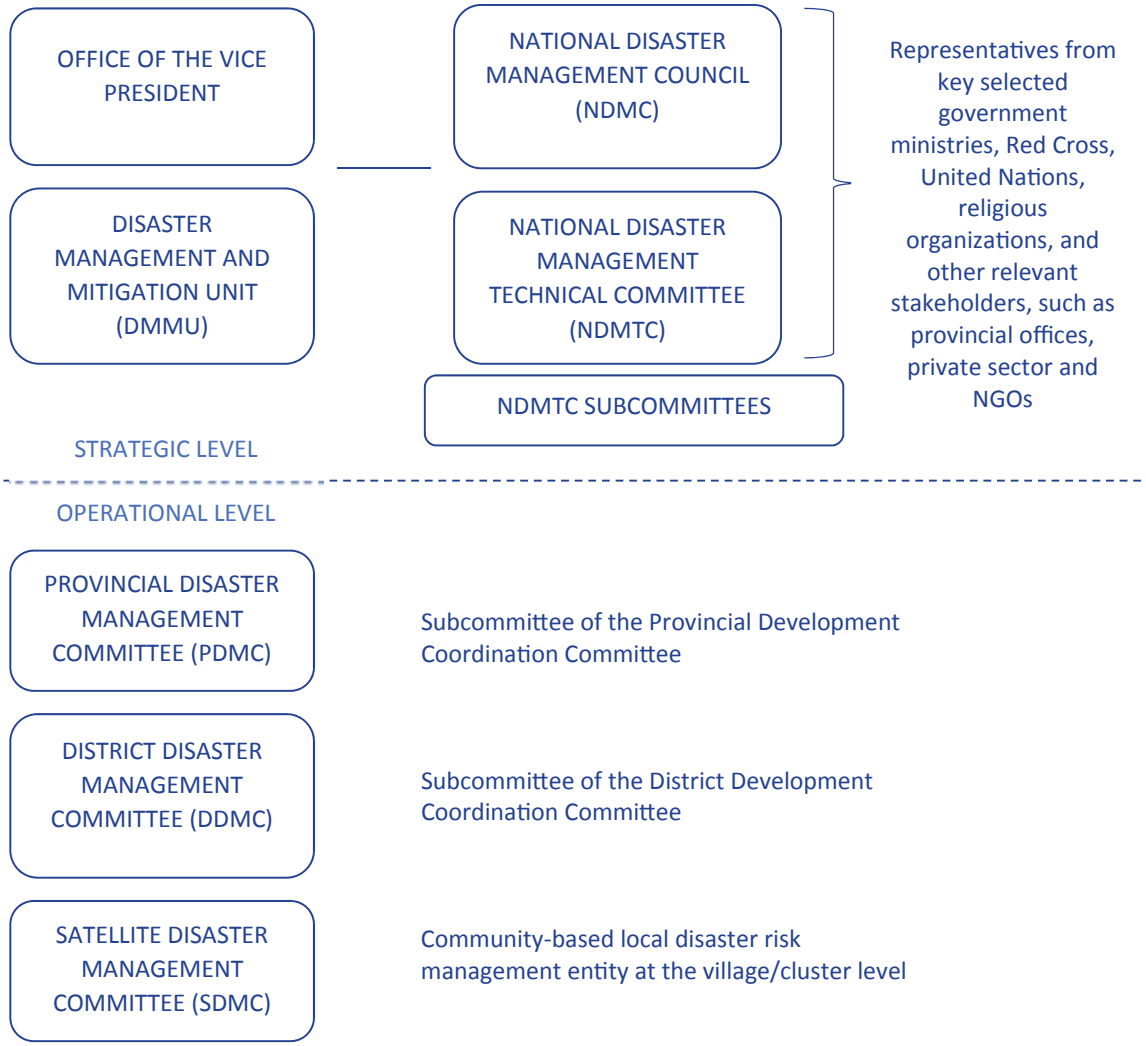
As such, the Policy particularly emphasizes risk reduction measures and a proactive approach to prevention, mitigation and rehabilitation, recovery and restoration. It speaks of a "life skills-based disaster prevention education" as a solution to the underlying vulnerabilities. The link between disaster risk management and development is specifically addressed under disaster prevention and the need to mainstream such activities into long-term and permanent approaches to empowering communities and building resilience. Disaster mitigation – lessening the potential impact of any disaster – is further dependent on successful development approaches and addressing the root causes of vulnerability.[215]

The link between disaster risk management and development is reflected in the architecture of the disaster risk management system, as the operational leg is closely linked to the development coordination committees at the provincial and district levels.

The architecture of the disaster risk management system is headed by the Office of the Vice President. The mandated disaster risk entity of the country is the Disaster Management and Mitigation Unit (DMMU), which operates nationally, with representation at the provincial and district levels. In support of the DMMU and the overall disaster risk management in the country, the National Disaster Management Council (NDMC) has been established as the supreme policy-making body. The NDMC receives technical input and advice from the National Disaster Management Technical Committee (NDMTC) and the NDMTC subcommittees. The NDMC consists of ministerial representation from the Office of the Vice President and the Ministry of Defence as well as the ministries of home affairs, health, agriculture, energy, information, national planning, local government, communication, community development, education, minerals development, works and water supply, and environment and natural resources. A technical committee that serves as a coordinating and monitoring entity in the disaster management architecture supports the council.[216]

[212] Government of Zambia, Central Statistics Office, *Zambia 2010 Census of Population and Housing: National Analytical Report* (Lusaka, December 2012).
[213] Government of Zambia, Office of the Vice President, DMMU, *National Disaster Management Policy*.
[214] Ibid.
[215] Ibid.
[216] Government of Zambia, Office of the Vice President, DMMU, *National Disaster Management Policy*.

At the operational level, provinces and districts have disaster management committees that form part of the broader development committee structures of the respective administrative levels. This is where preparedness, prevention, and mitigation measures are formulated and implemented. Lastly, community-based satellite disaster management committees are established, which represent the villages/clusters and operate under the District Disaster Management Committee (DDMC).[217]



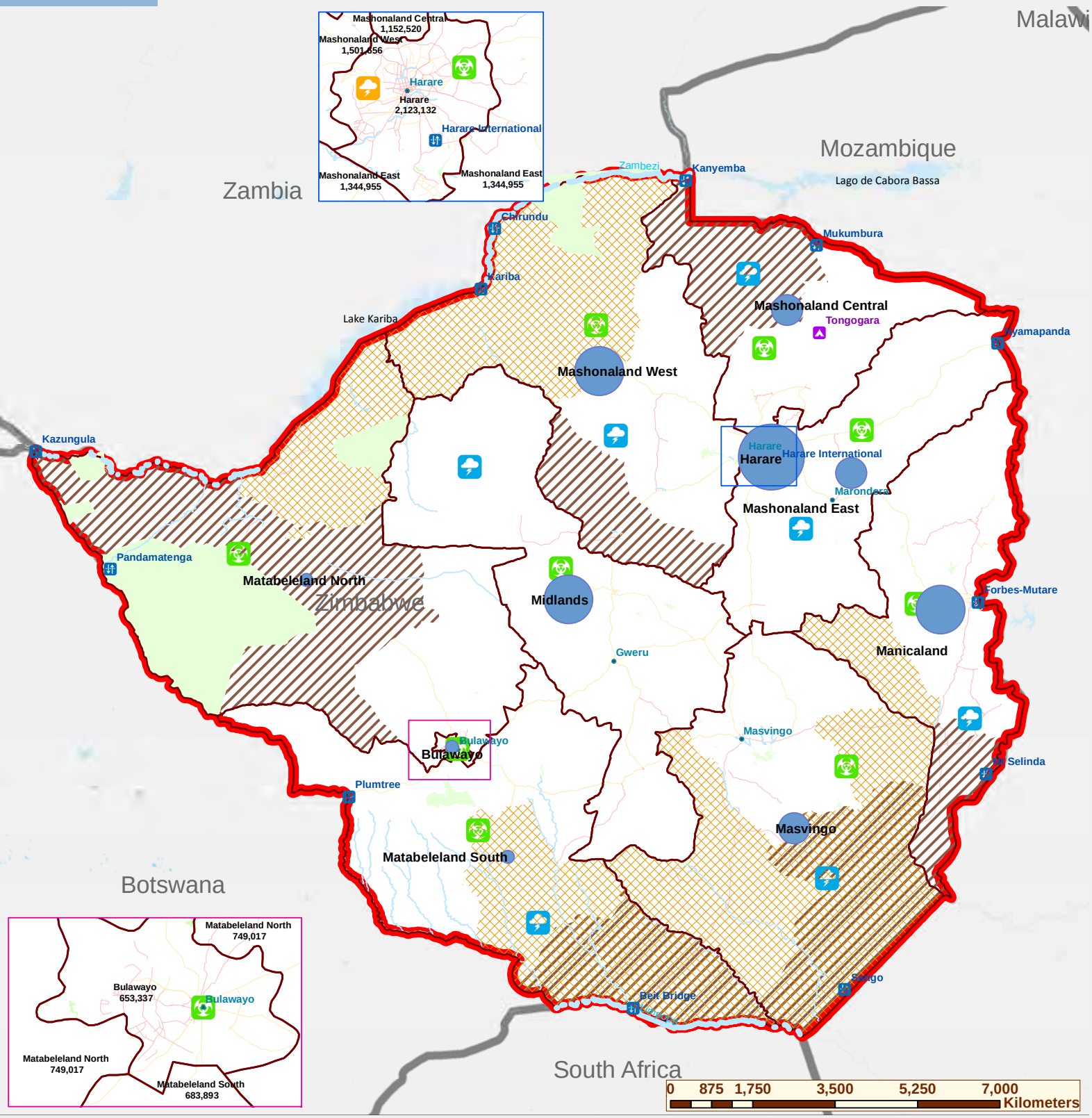
As required by the legal framework, preparedness and planning are key responsibilities of mandated authorities at the national level and decentralized levels. The 2016/2017 National Contingency Plan was developed in response to the risk scenarios of prolonged dry spells owing to the anticipated rainfall shortages of the time, and expected flash floods in low-lying areas with normal rainfall. Vulnerable sectors identified include agriculture and food security; water, sanitation and hygiene; health and nutrition; human settlement; and shelter. The main impacts anticipated include food and water shortages, loss of lives, disruption of livelihoods and risk of disease outbreaks. Facilitated planned temporary relocation is assumed to be necessary for at-risk populations within a 500 m radius zone from the main river systems and low-lying wetland areas and temporary resettlement areas identified for displaced people from both urban and rural areas. The Plan, however, emphasizes that funding is not available in full for the implementation of activities, estimating a financial resource gap of 60 per cent.[218]

[217] Ibid.

[218] Government of the Republic of Zambia, Office of the Vice President, Disaster Manageent and Mitigation Unit, DMMU, "Draft 2015/2016 national contingency plan" (2015).

4.6. Zimbabwe

1 cm = 33 km



ZIMBABWE
HAZARDS AND VULNERABILITY

Legend

ADM0 Country Level
ADM1 Provincal Level
Southern Africa Country
City
Border Crossing
Refugee Camp
Cross Border River
Waterways
Waterbodies
Natural Feature
Roads
Drought Prone Area
Flood Prone Area

Population Density

0–1,000,000
1,000,001–1,500,000
1,500,001–2,000,000
2,000,000+

Zimbabwe Hazards Impacts (From 2000–2016)

Hazard Type	People Affected
Drought	16,067,618
Storm	475
Epidemic	116,301
Flood	344,022

Hazard profile and history of disaster events

Zimbabwe is a country of medium risk based on its 2017 INFORM Risk value (4.9). Main hazards include floods and drought as the most severe. The country is also vulnerable to the compound risk of food insecurity, closely linked with extreme weather events and agricultural output. The risk dimension measuring the lack of coping capacity is the factor of highest index value and calls for increased efforts for resilience.[219]

The list of disasters in Zimbabwe during the period 2000–2016 include 34 disaster events as registered on the EM-DAT disaster database. During this time, approximately 16.5 million people were affected.[220]

Year	Disaster type	Disaster subtype	Locations
2000	Epidemic	Bacterial disease	Chegutu District (Mashonaland West province), Beitbridge District Matabeleland province)
	Flood	Riverine flood	Chimanimani and Mutare Districts (Manicaland province), Chiredzi District (Masvingo province), Matobo District (Matabeleland South province), Midlands province
2001	Drought	Drought	Kwekwe, Gokwe South, Zvishavane, Shurugwi, Gweru, Mberengwa and Gokwe North Districts (Midlands province); Mvuma City (Chirumhanzu District, Midlands province); Chipinge District (Manicaland province); Gwanda, Umzingwane and Matobo Districts (Matabeleland South province); Chiredzi, Chivi and Masvingo Districts (Masvingo province); Hwange and Tsholotsho Districts (Matabeleland North province); Kariba District (Mashonaland West province); Guruve District (Mashonaland Central province)
	Flood	n.a.	Centenary and Guruve Districts (Mashonaland Central province); Tsholotsho District (Matabeleland province)
2002	Epidemic	Bacterial disease	Bikita District, Masvingo province
2003	Epidemic	Bacterial disease	Chunga and Manyoro (Binga District); Mola (Kariba District, Matabeleland province); Nyaminyami (Mashonaland province)
	Flood	Riverine flood	Muzarabani and Guruve Districts (Mashonaland Central province); Mashonaland West province
	Storm	Tropical cyclone	Manicaland, Masvingo and Matabeleland South provinces
2005	Epidemic	Bacterial disease	Chikomba District (Mashonaland East province), Buhera District (Manicaland province), Harare province, Mashonaland Central province, East province, West province, Masvingo province and Midlands province

[219] INFORM country risk profiles for 191 countries: Zimbabwe. Available from www.inform-index.org/Countries/Country-profiles, (accessed 27 May 2017).

[220] D. Guha-Sapir, R. Below and Ph. Hoyois, EM-DAT. Available from www.emdat.be

Year	Disaster type	Disaster subtype	Locations
2007	Drought	Drought	Masvingo, Matabeleland North, Matabeleland South, Midlands, Manicaland, Mashonaland Central, Mashonaland East and Mashonaland West provinces
	Epidemic	n.a.	Bulawayo City (Bulawayo province); Harare City (Harare province); Kadoma City (Mashonaland West province); Kwekwe, Gokwe North and South Rural Districts (Midlands province)
	Flood	Riverine flood	Centenary District (Mashonaland Central province); Chiredzi and Chivi Districts (Masvingo province)
	Storm	Tropical cyclone	Vumba, Odzi and Marange areas (Mutare District, Manicaland province); Penhalonga and Stapeford villages (Mutasa District, Manicaland province); Chimanimani town (Chimanimani District, Manicaland province)
2008	Epidemic	Bacterial disease	Shamva, Centenary, Mazowe, Guruve, Mbire, Mt. Darwin, Bindura and Rushinga Districts (Mashonaland Central province); Bulawayo urban (Bulawayo province); Budiriro area (Harare province); Chitungwiza town (Harare province); Mudzi, Murehwa, Goromonzi, Mutoko, Marondera, Chikomba, Hwedza, Uzumba-Maramba-Pfungwe (UMP) and Seke Districts (Mashonaland East province); Mahombekombe area in Kariba District, Kariba rural, Zvimba District, Kadoma City, Hurungwe District, Chegutu District and Norton District (Mashonaland West province); Mutasa District, Mutare City, Buhera District, Chipinge District, Makoni District, Mutare District, Chimanimani District (Manicaland province); Lupane District (Matabeleland North province); Gwanda and Plumtree Districts (Matabeleland South); Masvingo, Gutu, Bikita, Mwezeni and Zaka (Masvingo province); Gweru City/Mkoba, Zvishavane town, Mberengwa District, Gokwe North District, Gokwe South District, Kwekwe District, Shurungwi District, Mvuma District (Midlands province)
2009	Epidemic	Bacterial disease Viral disease	Rushinga and Bindura Districts (Mashonaland Central province); Kadoma, Chegutu and Makonde Districts (Mashonaland West province); Chipinge District (Manicaland province); Gokwe North and Gokwe South Districts (Midlands province); Harare District (Harare province); Bubi District and Bulawayo City (Matabeleland North); Umzingwane and Insiza Districts (Matabeleland South); Kwekwe District (Midlands province); Makonde, Zvimba and Chegutu Districts (Mashonaland West province); Centenary, Mt. Darwin and Bindura Districts (Mashonaland Central); Harare (Harare province); Seke, Goromonzi, Marondera and Hwedza Districts (Mashonaland West province); Nyanga, Makoni, Mutare, Buhera and Chipinge Districts (Manicaland province); Gutu, Masvingo, Zaka, Bikita and Chiredzi Districts (Masvingo province)

Year	Disaster type	Disaster subtype	Locations
2010	Drought	Drought	Manicaland, Mashonaland Central, Mashonaland East, Mashonaland West, Masvingo, Matabeleland North, Matabeleland South and Midlands provinces
	Epidemic	Bacterial disease Viral disease	Mabvuku (Harare City, Harare province)
	Flood	Riverine flood	Kanyemba area (Mbire District, Mashonaland Central province)
2011	Epidemic	Bacterial disease	Bikita and Chiredzi Districts (Masvingo province); Buhera, Chimanimani, Chipinge, Mutare and Mutasa Districts (Manicaland province); Chegutu and Kadoma Districts (Mashonaland west province); Murewa (Mashonaland West province)
	Flood	Riverine flood	Centenary, Guruve and Mbire Districts (Mashonaland Central province); Mutoko and UMP Districts (Mashonaland East province); Hurungwe and Kadoma Districts (Mashonaland West province)
2013	Drought	Drought	Matabeleland North, Matabeleland South, Masvingo and Midlands provinces
	Flood	Riverine flood	Matabeleland South, Matabeleland North, Midlands, Masvingo, Mashonaland Central and Manicaland provinces
2014	Flood	Flash flood Riverine flood	Domboshawa area (Shamva District, Mashonaland Central province); Chiredzi, Gutu, Chivi, Masvingo and Mwenezi Districts (Masvingo province); Tsholotsho and Binga Districts (Matabeleland North province); Gokwe South District (Midlands province); Makonde District (Mashonaland West province); Bulawayo District (Bulawayo province); Harare District (Harare province); Mangwe and Gwanda Districts (Matabeleland South province)
2015	Drought	Drought	Manicaland, Masvingo, Matabeleland North, Matabeleland South, Mashonaland Central and Midlands provinces
	Epidemic	Bacterial disease	Chiredzi (Mazvingo province), Mudzi (Mashonaland East Province), Beitbridge District (Matabeleland South province)
	Storm	Convective storm	Mashonaland Central, Mashonaland East, Mashonaland West, Midlands and Harare provinces

The drought hazard is primary in terms of population at risk. The provinces of Mashonaland East, Matabeleland North, Matabeleland South, Masvingo and Manicaland are the most prone to drought, although the whole population usually feels the effects in terms of water scarcity and food shortages. Following extreme and protracted dry spells with below-normal rainfall, rivers, dams, wells and even boreholes are at risk of drying up. For a population that primarily relies on agricultural output – 70 per cent living in rural areas and being dependent on farming and livestock – the trend of reduced rainfall or heavy rainfall and drought occurring in combination poses a major threat to the country. Food insecurity is commonly associated with both drought and floods.[221]

[221] RIASCO, *RIASCO Action Plan for Southern Africa, May 2016–April 2017*; Government of Zimbabwe, Ministry of Environment, Water and Climate, *Zimbabwe's National Climate Change Response Strategy*.

The 1991–1992 and 2001 droughts are among the worst in the history of Zimbabwe, affecting 5 million and 6 million people, respectively. The 2016 El Niño drought affected over 4 million people and caused severe food insecurity due to reduction in cultivated land for agriculture, poor grazing for livestock as well as water shortages and disease outbreaks. In February 2016, the Government declared a national disaster. Poor maintenance in water treatment and distribution systems in urban areas and inadequate water access in rural areas exacerbated the situation. In the absence of adequate water, sanitation and hygiene infrastructure – more than half of the country's population lacking it – disease outbreaks were only a matter of time in both rural and urban Zimbabwe.[222]

In terms of flooding, the same provinces as well as Mashonaland Central are at greatest risk. Rivers are not widely spread throughout the country, apart from Zambezi River that flows along the Zimbabwean border, from the western bordering point to Namibia, Botswana, Zambia, along the northern border across from Zambia and into Mozambique at the Kanyemba border crossing. Limpopo River in the south across the border from South Africa is also a major cause of recurrent riverine floods in the area. Zimbabwe is however also prone to flash floods owing to heavy rain and poor water drainage systems, affecting rural areas with primarily agricultural crop damage and more populated urban areas such as Harare and Bulawayo. In 2016/2017, the seasonal forecast issued a warning of high probability of normal to above-normal rainfall triggered by tropical cyclone Dineo, which, in March 2017, caused flashfloods and the death of more than 250 people, displacement of thousands, and major economic and infrastructure damage. As the areas and populations affected were the same as those still suffering the aftermath of the El Niño drought, the Government declared a national disaster and requested humanitarian assistance.

Epidemic outbreaks tend to follow the cycle of flooding, and water-borne diseases such as cholera are endemic in many rural parts of the country. According to the EM-DAT data, 16 epidemic disasters occurred during the period 2000–2016. As a consequence of the economic crisis in Zimbabwe, the health care system has been suffering shortages of financing as well as inadequate infrastructure. Hence, existing hazards and vulnerabilities are resulting in greater risk. The most extensive outbreak in Zimbabwe and possibly in Africa is the 2008 cholera outbreak. The event changed the patterns of epidemic outbreaks in Zimbabwe, and, for the first time, it affected urban areas and informal settlements in large scale, exacerbated by inadequate water supply and improper waste disposal in the high-density urban areas of the country. Nearly 100,000 people were affected and the outbreak made Zimbabwe the source country of cholera cases in border areas and across borders in neighbouring countries such as Botswana, Mozambique, South Africa and Zambia.[223]

The impact of climate change is predicted to affect the country's hazard profile. With a large proportion of the population living in semi-arid rural areas and assumed to have low resilience and means of adaptation, the increase in exposure and vulnerability is likely to result in disproportional adversities caused by climate change and extreme weather events. Already, the Government recognizes the effect of climate change on environmental migration – agriculture is taken deeper into marginal lands and agricultural livelihoods are sustained on the expense of natural resource and land degradation, or completely abandoning rural areas in favour of urban living elsewhere in the country or across borders. The links between climate change, disaster risk management and development are thus of critical concern for Zimbabwe.[224]

[222] RIASCO, *RIASCO Action Plan for Southern Africa, May 2016–April 2017*.

[223] I., Chirisa et al., "The 2008/2009 cholera outbreak in Harare, Zimbabwe: Case of failure in urban environmental health and planning", *Reviews on Environmental Health*, 30(2):117–124 (2015).

[224] Government of Zimbabwe, Ministry of Environment, Water and Climate, *Zimbabwe's National Climate Change Response Strategy*.

Development indicators and vulnerability factors

Zimbabwe HDI 2015: 0.516 (Rank: 154)		
Population, 2015 (Urban %) Total: 15,603,000 32.4%	GDP/capita PPP USD, 2011 1,688	Unemployment, 2015 9.3%
Gini, 2010–2015 43.2	Multidimensional poverty, 2005–2015 n.a.	Education, 2015 Expected years of schooling: 10.3 years
Health, 2015 Life expectancy: 59.2 years	HIV prevalence (ages 15–49), 2015 14.7%	Gender development and gender equality, 2015 0.927 and 0.540
International migrant stock, 2015 (% of population) 398,866 (2.6%)	% of SADC immigrants, 2007 10.5%	% of SADC emigrants, 2007 32.5%
People of concern, end of 2016 10,064	Refugees, 2015 5,397	IDPs, 2010–2015 (new displacement) 67,100

Sources: UNDP, *Human Development Report 2016: Human Development for Everyone* (New York, 2016).

UN DESA, *Trends in International Migrant Stock: The 2015 Revision*, UN database, POP/DB/MIG/Stock/Rev.2015 (New York, United Nations, 2015).

UNHCR, "UNHCR statistics: The world in numbers". Available from http://popstats.unhcr.org/datavizGT2016/index.html (accessed 20 July 2017).

IDMC, "IDMC global figures 2016: New displacements". Available from www.internal-displacement.org/database/ (accessed 20 July 2017).

Oxford Policy Management, "Developing financing mechanisms to support the implementation of the draft ´Policy Framework for Population Mobility and Communicable Diseases in the SADC Region´: Situational analysis", unpublished (March 2015).

Once one of sub-Saharan Africa's most progressive countries and with high levels of development, Zimbabwe[225] is today ranked as a country of low human development and classified as a least developed country. Recovering from decades of economic crisis and years of a contracting economy and rocketing hyperinflation, the growth rate averaged around 8 per cent between 2009 and 2012. In part following recurrent drought and flood disasters, economic growth has however slowed down in the past years, and the World Bank estimates it at 2 per cent on average in 2017. Nonetheless, Zimbabwe's outlook for economic growth and poverty reduction is assumed to be strong, owing to the country's economic prosperity and socioeconomic development achievements in its early years of independence.

In terms of the formal labour market, unemployment stood at 9.3 per cent in 2015. The informal labour market is still a significant part of Zimbabwe's economy. The Gini coefficient is estimated at 43.2, which is similar to those of the Democratic Republic of the Congo and the United Republic of Tanzania, revealing signs of absolute poverty within the population.

The country is home to 15.6 million inhabitants, of whom one third are living in urban areas (32.4%). Although figures on multidimensional poverty per se are not available, 2011–2012 data from the Zimbabwe National Statistics Agency (ZIMSTAT) estimated that two thirds of the

[225] Section derived from: UNDP, *Human Development Report 2016*; World Bank, "The World Bank in Zimbabwe", available from www.worldbank.org/en/country/zimbabwe (accessed 27 May 2017).

population is living below the national poverty line, including one fifth living in extreme poverty. To a large extent, this goes hand in hand with the development challenges in rural areas and a system collapse in health, education and other basic services. The education system of Zimbabwe was historically ranked very high in the region. With increased levels of poverty, the expected number of years of schooling has been decreasing gradually, today standing at 10.3 years. The same applies to life expectancy, which is at 59.2 years at present. The country is also struggling with an HIV prevalence rate of 14.7 per cent.

Gender development and gender equality indicators are near world-average levels in terms of human development (0.927), indicating that human development levels are fairly equal between men and women. Gender inequality is however low (0.540), and women continue to lag behind in terms of opportunities and empowerment, causing a gendered vulnerability dimension for prevailing risk factors.

Migration trends and patterns

In terms of migration, Zimbabwe was once a major destination country in the Southern African region, with migrants from the United Kingdom and the rest of Europe, many settling with a long-term permanent perspective in mind. Labour migrants from neighbouring countries such as Mozambique, Malawi and Zambia were also welcome and recruited to work in mines, on commercial farms and in domestic services on a temporary basis. More recent data from ZIMSTAT shows that most immigrants currently originate from neighbouring countries in Africa as well as from Asia and Europe, primarily the United Kingdom.[226] According to the 2015 statistics on international migrant stock, Zimbabwe hosts nearly 400,000 international migrants in total (2.6% of the local population).[227]

Zimbabwe is also one of the transit countries along the southern route, and subject to irregular migration and smuggling of migrants en route to South Africa or further beyond to Europe, North America or Australia. Migrants originate mainly from countries in East Africa, such as Kenya, Ethiopia and Somalia, as well as the Democratic Republic of the Congo; the majority of them enter Zimbabwe via the Nyamapanda border in the north-east bordering Malawi, where humanitarian assistance is available for those who register at the Nyamapanda Migrant Reception Centre. Unregistered migrants are at risk of apprehension under the Immigration Act, as per amendment 22/2001, and risk imprisonment for unlawful entry into the country.[228] The main exit point is the Beitbridge border, putting irregular and vulnerable migrants at great risk, as they may experience, among other things, torture, rape and mugging by criminal networks operating along the borders of Zimbabwe and South Africa. Crossing of Limpopo River itself is also a risky endeavour.[229]

In terms of trafficking in persons, Zimbabwe is a source, transit and destination country for forced labour and sexual exploitation. Common destinations for men, women and children that are trafficked from Zimbabwe include cross-border areas in South Africa, Mozambique and Zambia, as well as Johannesburg, Pretoria, Durban and Musina in South Africa. Trafficking to China and the Middle East for work purposes has also been reported. According to the 2016 *Trafficking in Persons Report* of the US Department of State, Zimbabwe is a Tier 3 country, to a large extent, owing to the limited national efforts of eliminating trafficking.[230]

[226] IOM, *Migration in Zimbabwe: A Country Profile* (Geneva, 2009). Available from https://publications.iom.int/books/migration-zimbabwe-country-profile-2009

[227] UN DESA, *Trends in International Migrant Stock: The 2015 Revision*.

[228] Government of Zimbabwe, Immigration Act (Acts 18/1979, 32/1979 (s. 16), 29/1981 (s. 59), 13/1983 (s. 21), 23/1984 (s. 24), S.I. 78/1987, 8/2000, 22/2001).

[229] C. Horwood, *In Pursuit of the Southern Dream: Victims of Necessity. Assessment of the Irregular Movement of Men from East Africa and the Horn to South Africa* (Geneva, IOM, 2009), available from https://publications.iom.int/books/pursuit-southern-dream-victims-necessity; B. Frouws and C. Horwood, *Smuggled South*; Government of Zimbabwe, Immigration Act (Acts 18/1979, 32/1979 (s. 16), 29/1981 (s. 59), 13/1983 (s. 21), 23/1984 (s. 24), S.I. 78/1987, 8/2000, 22/2001)

[230] US Department of State, *Trafficking in Persons Report June 2016* (Washington, D.C., 2016), pp. 402–404.

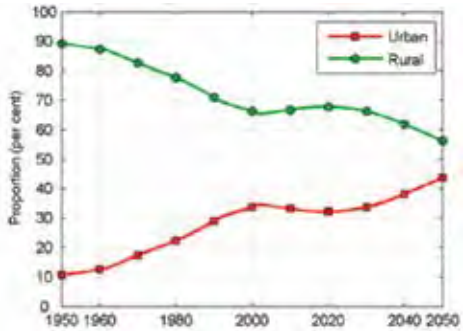
Zimbabwe is also – and primarily so – a country of origin for many Zimbabwean migrants seeking greater opportunities and prospects elsewhere in Southern Africa, mainly South Africa, Botswana, Malawi, Mozambique and Zambia. Zimbabwe has seen a progressive rise in emigration since the year 2000 when the economic situation started to deteriorate, which was fuelled by the protracted plummeting economic situation in the country. The migration flows are signified by brain drain of highly skilled labour as well as the emigration of low-skilled nationals subject to unemployment. As regular migration opportunities within the SADC – in particular for low-skilled labour – are limited, the country is also marked by informal cross-border movement and irregular migration flows. Also, far from every Zimbabwean holds a passport that could otherwise facilitate regular forms of population movement. Hence, Zimbabwe nationals take the risk of using smuggling services, and travelling as undocumented migrants through irregular means is increasingly common for Zimbabweans opting to find opportunities outside the country – often subject to human rights violations and vulnerable to exploitation and abuse.[231]

In light of the large-scale emigration and in order to strengthen the link between migration and development, Zimbabwe, with the support of IOM, has recently launched the National Diaspora Policy, which will provide incentive to the Zimbabwean diaspora to contribute to the development process in their home country. The Policy will help put in place an institutional framework for diaspora remittances, which in 2014 accounted for nearly 15 per cent of the country's GDP. The Policy makes provisions for a diaspora directorate that will coordinate and facilitate contributions of the Zimbabwean diaspora, including remittances and transferable skills.[232]

Internal migration is characterized by the rural-to-urban migration trend. Push factors include but are not limited to poverty and economic hardship, unpredictable agricultural production and food insecurity, and increased risk of disaster and climate change. Therefore, in terms of internal migration flows, Zimbabwe has seen a rapid expansion in urban settlements, too, some of which have emerged as informal and unplanned. Harare and Bulawayo are the two biggest cities.

The current urbanization level of 32.4 per cent is projected to increase gradually in the coming decades, reaching approximately 45 per cent by 2050.[233]

Zimbabwe urban versus rural population, 1950–2050 (%)



Source: UN DESA, Population Division, "Country profile: Zimbabwe", World Urbanization Prospects: The 2014 Revision.

With urbanization comes a need for more proactive urban disaster risk reduction and resilience action.

Nonetheless, as the population is still mainly rural, rural initiatives to diversify livelihoods, reduce vulnerability, reduce disaster risk and strengthen resilience are just as important.

[231] IOM, *Migration in Zimbabwe: A Country Profile*.

[232] Government of Zimbabwe, Ministry of Macro-Economic Planning and Investment Promotion, *Zimbabwe Diaspora Policy* (July 2016).

[233] UN DESA, Population Division, "Country profile: Zimbabwe", World Urbanization Prospects: The 2014 Revision. Available from https://esa.un.org/unpd/wup/Country-Profiles/

Disaster risk management

Zimbabwe's disaster risk management system is governed by the Civil Protection Act (Acts 5/1989, 3/1992 and 22/2001); it establishes the civil protection and disaster risk management architecture as well as the operations in times of disaster. The country also has a disaster risk management bill currently under development. The bill will align with the Sendai Framework and revise the structure to better account for available national financial resources.[234]

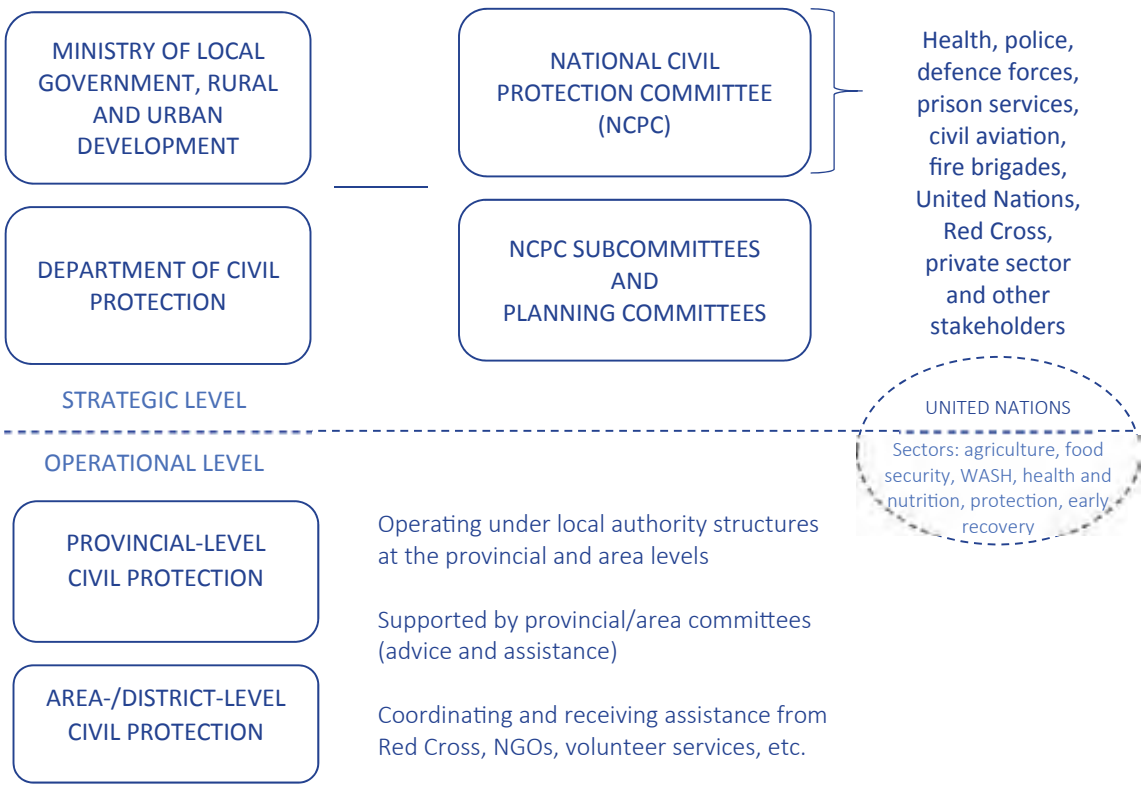
Although the country is lacking a long-term development plan, other national development frameworks, such as the Medium Term Plan (MTP) for the period 2012–2015, have acknowledged the impediments to economic and social development posed by climate change as well as the increased frequency and intensity of natural disaster events. The National Climate Change Response Strategy calls for integrated and coordinated approaches to climate change mitigation and disaster risk reduction, including targeted rural and urban planning and enhanced community resilience.[235]

Currently, the overall system stems from the Ministry of Local Government, Rural and Urban Development and its operational arm is the Department of Civil Protection, the mandated government authority in terms of the country's civil protection. The Department of Civil Protection is responsible for coordinating and mainstreaming disaster risk management, and integrating risk reduction into development planning for sustainability.[236]

Supporting the Department of Civil Protection, the Civil Protection Act makes provisions for an advisory entity – the National Civil Protection Committee (NCPC) – which consists of key ministries, government institutions, NGOs and the United Nations, as well as the private sector and other relevant stakeholders in the field of disaster risk management. The NCPC's role is to "advise and assist the planning and implementation of measures for the establishment, maintenance and effective operation of civil protection" as well as to review measures and consider civil protection plans prepared by national or provincial civil protection planning committees appointed by the Department of Civil Protection. Subcommittees are established on a needs basis and to complement the national committee as may be required. Planning committees for the purpose of preparing civil protection plans can also be created as a temporary measure. The national civil protection system is complemented by a decentralized structure, in which there are civil protection systems at the provincial level and in areas or districts within respective provinces. The decentralized mechanisms also entail an establishment of committees with advisory and assisting functions. Committees help in facilitating disaster assessments, awareness-raising and disaster risk management planning.[237]

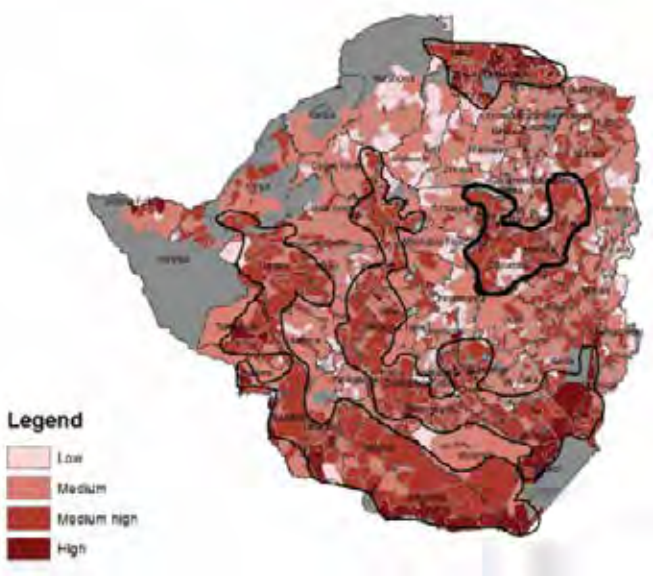
The humanitarian partners, including UN organizations, NGOs and the Zimbabwe Red Cross Society, support the national disaster risk management architecture. In times of crisis, the humanitarian reform, cluster approach, is activated – including sectors of agriculture and food security; water, sanitation and hygiene; health and nutrition; protection; and early recovery.[238]

234 Government of Zimbabwe, Civil Protection Act (Acts 5/1989, 3/1992 and 22/2001).
235 Government of Zimbabwe, Ministry of Environment, Water and Climate, *Zimbabwe's National Climate Change Response Strategy*.
236 Government of Zimbabwe, Civil Protection Act (Acts 5/1989, 3/1992 and 22/2001).
237 Ibid.
238 Ibid.; IOM Zimbabwe.



At the national level, contingency planning is conducted on a regular basis. The Zimbabwe National Contingency Plan 2016/2017[239] prioritizes four hazards based on their likelihood of affecting large populations: floods, dry spells/drought, diarrhoeal diseases, and crop pests and animal diseases. The risk profile for flooding is projected to be severe, with the likelihood of associated diarrhoeal disease outbreak. The Contingency Plan is based on an estimate of 4.1 million affected people and identifies the rural and urban areas at accumulated risk of respective hazards (e.g. Harare and Bulawayo), as well as cross-border towns such as Beitbridge.

The compound hazard map from the Plan indicates predicted low, medium-, medium/high-, and high-risk areas for the four hazards from November 2016 to October 2017.



Displacement and forced migration is one of the key adversities associated with flooding, while food insecurity is likely to follow a protracted dry spell and drought.

The Plan outlines humanitarian impact, priority needs and planning assumptions for each hazard scenario, and also identifies early warning actions.

The Plan does acknowledge the exposure to hazards of the rural population and at the same time stresses the risk of flooding in urban areas as well as the increased risk of diarrhoeal diseases in urban population-dense areas with limited water and sanitation infrastructure. A deeper analysis of vulnerability and capacity is however not included in the Plan.

[239] Government of Zimbabwe, Department of Civil Protection, *Zimbabwe National Contingency Plan, November 2016–October 2017*.

5. Analysis and conclusions

Southern Africa is a region facing disaster risks owing to a complex interaction between the variables of hazard, vulnerability, exposure and resilience.

$$\frac{\text{HAZARD} \times \text{VULNERABILITY} \times \text{EXPOSURE}}{\text{RESILIENCE}} = \text{RISK}$$

The six countries covered in this review – Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe – face different challenges although some aspects are the same.

Hazard

The hazard profiles of the countries include drought, floods, cyclones, storms, earthquakes, wild fires, epidemic outbreaks and food insecurity. In addition, social unrest, internal violence and xenophobia are human-made crises that have historically occurred and still have the potential to resurface. With climate change, the risks associated with the hazards are likely to increase. Although acknowledged in the hazard analyses, a greater understanding of exactly how the regional hazard profile may change with climate change would help in preparing for future disaster risks more proactively.

Hazards know no borders, and in Southern Africa many of the hazards are of cross-border, transboundary or regional character. In terms of national hazard profiling, attention to this fact is mainly given for epidemic outbreaks, particularly for cholera outbreaks, and, to some extent, in terms of human-made crises, conflicts and cross-border movement of people that may require subsequent international protection obligations. As identified in the Southern African disaster risk management framework, disaster events in one country may also affect other countries either through the spread of disaster events across borders, cross-border displacement or humanitarian obligation, or through compound disasters such as food shortage and increase in food prices. Greater acknowledgement of this fact would strengthen disaster risk planning and preparedness at the national level. The role of the SADC and its Disaster Risk Reduction Unit as a regional coordinating entity could also be of great value in shedding light on how to reduce the risks of these hazards with concerted effort and partnerships between Member States and at the regional level.

Whereas Botswana, Malawi and Zambia face lower risks directly associated with hazards, Mozambique, South Africa and Zimbabwe have more diverse hazard profiles. As the review of the six countries confirm, while hazards are indeed a determining factor for disaster, the magnitude of such disaster events will also depend on the vulnerability to external shocks of a country and its population.

Vulnerability

Vulnerability can be understood in various dimensions. Malawi, Mozambique, Zambia and Zimbabwe are all classified as least developed countries, with human development measured at medium (Zambia) and low (Malawi, Mozambique and Zimbabwe) levels.

Malawi, Mozambique and Zimbabwe all share some common development features: for instance, all three countries are suffering extreme and absolute poverty of various magnitudes (e.g. Mozambique has an estimated multidimensional poverty of 70%), and all of them are also primarily rural (Malawi has the lowest level of urbanization, with only 16.3% of the population living in urban areas). Rural livelihoods, reliance on rain-fed agriculture and subsistence farming thus create increased vulnerabilities in terms of weather-related disasters events, and this also poses threats to the food security of the populations. Food security is a hazard that further exacerbates vulnerability.

Zambia is a country with mixed development characteristics – it has increasing income inequalities just below those of Botswana and South Africa but Zambia still has high levels of poverty similar to Malawi and just below Mozambique and Zimbabwe. A bit more than half of the population is still living in rural Zambia, although urbanization is taking place and human settlements are growing in unplanned urban and peri-urban areas. The provision of basic services and infrastructure has however not followed with this development and the inadequate access to water and sanitation in rural areas has extended also to the urban areas. Particular vulnerability to communicable diseases such as cholera, an endemic disease in parts of Zambia, increase the country's risk of epidemic outbreaks as a stand-alone hazard as well as a compound disaster closely linked to flooding and drought.

Botswana and South Africa are both middle-income countries with medium human development ranking. The urban populations in these countries are rated among the highest in Africa, at 57.4 per cent and 64.8 per cent respectively, and rural-to-urban migration trends point towards a continued rapid urbanization and growth in unplanned urban areas and informal settlements. Development challenges in both countries are lingering, as poverty still persists, unemployment levels are high and income inequalities are deepening. In South Africa these factors are referred to as the "triple threats". Despite this, both countries have increasingly become countries of destination for migrants from the region and host large populations of international migrants – in relation to population size, Botswana and South Africa are by far in the top in absolute numbers. The development challenges in combination with the large migrant populations have, in recent history, become the cause of social exclusion, social unrest, urban violence, and xenophobic sentiments and violence specifically targeting foreign-born nationals.

Disaster risk reduction strategies therefore need to take into consideration the specific development challenges prevalent in respective countries, adapted to national contexts. The diverse development profile of the region provides countries in Southern Africa with a possibility to learn from each other and prevent that development from following the conventional trajectory of income inequality and pockets of lingering poverty and deprivation, unemployment, rapid unplanned urbanization and the emergence of informal settlements with inadequate basic service delivery.

In all countries, rural-to-urban or urban-to-urban migration trends are prevalent, in part fuelled by the looming disaster risk, increased rural hardship in terms of agricultural production and livelihood options. Already, urban expansion and urban population growth are putting pressure on the scarce resources of land and water as well as basic service delivery. In light of this, proactive and progressive urban disaster risk reduction and resilience initiatives will be of essence, not only in countries with already high proportions of urban population but also in currently predominantly rural countries where urbanization is predicted to increase in various paces over the coming years. These urban resilience strategies can thus be "corrective" and remedial or preemptive and proactive in character.

With increased risks associated with the negative impacts of climate change and future disasters, population movement and environmental migration as short-term adaptation strategies to, for instance, displacement as well as long-term sustainable adaptation strategies can be assumed to increase in the future. To already consider how these types of migration pattern should be managed by the region as a whole, that is, in terms of recognizing protection needs and/or rights associated with cross-border migration, this can be linked to the Nansen Initiative and ongoing considerations at the global level.

In addition, specific vulnerabilities associated with specific needs at the individual level also need to be considered in terms of targeted risk reduction. Many countries in Southern Africa have high HIV prevalence rates as well as cases of other chronic diseases, increasing the vulnerability of the group of people living with HIV or recurring diseases. Gender development and gender equality also confirm that women continue to be disadvantaged in many countries, increasing vulnerability to prevailing hazards. The same applies to other persons with specific needs.

The specific vulnerabilities of migrants, often complex and manifold in nature, are also of relevance for a region with high population movement. With existing development challenges and scarce resources, combined with lack of social cohesion, the threat of violence and xenophobia is of particular concern for migrant populations. As migration policy and border management are turning more restrictive and closing the window for regular migration, irregular migration may increase and fewer options for perilous journeys may be left available. At the same time, the vulnerability of irregular and undocumented migrants increases, in particular in times of disaster, as they may avoid seeking assistance in fear of apprehension, detention and return to their countries of origin. Language barriers and limited knowledge of culture and norms in the host country, as well as the lack of knowledge of the national emergency system in the host country and migrants' rights and entitlements, among other things, tend to exacerbate these vulnerabilities.

As the development achievements and development challenges of the countries in the SADC region vary, it could be useful to share lessons learned and best practices in terms of the link between hazard and vulnerability, and disaster and development, and thereby find innovative and proactive approaches to risk reduction and resilience. The findings of this review of the six SADC countries confirm that managing risks is very much associated with managing the specific development challenges and the underlying drivers of risk.

Exposure

With the understanding of hazards and vulnerability, as well as resilience, the concept of spaces of vulnerability, or the areas with higher exposure to risk, can thereby be defined to include the following elements:

- Locations of national or transboundary hazards and hazard-prone areas, including but not limited to the Zambezi, Limpopo and Okavango river basins; the Indian Ocean coastline; the East African Rift Valley; and dry lands and areas experiencing particularly unpredictable weather patterns.
- Areas with increased levels of vulnerability, including but not limited to
    - Rural areas with high poverty levels, depending on rain-fed agriculture and subsistence farming, with inadequate housing and/or access to basic services such as water and sanitation and have no quick and adequate access to or lack health-care facilities;

- Urban areas not properly planned and/or informal settlements; urban areas with high poverty levels, unemployment, income inequality and social exclusion; urban areas with inadequate housing and/or access to basic services such as water and sanitation and/or otherwise poor infrastructure; urban areas with a high population density; and urban areas with diverse communities living in discord with each other and/or facing social tension;
- Border areas with high levels of cross-border population movement, or border areas where communities face transboundary hazards;
- Specific vulnerabilities faced by population groups or individuals, including but not limited to migrants and particularly undocumented migrants and other people of concern; people living with HIV/AIDS; people with special needs; people disadvantaged by or living in the margins of a community/society.

- Areas with weak disaster risk management governance and little or no disaster risk management capacity, including the absence of comprehensive planning for prevention, preparedness, response, recovery and mitigation activities.

Resilience

The disaster risk management capacity of a country will largely determine its level of resilience to disaster events – reducing risks prior to a disaster, and enhancing preparedness and response capacity for when a disaster strikes. Disaster risks are considered in national disaster risk management systems.

The six SADC countries covered in this review all have similar governance structure and disaster risk management architecture, although with national deviances based on country contexts. Common for all countries is the divide between strategic and operational levels and between national and "local"/decentralized levels, where the strategic part consists of national-level stakeholders, such as mandated government authorities as well as broad-based stakeholder committees or councils with policy, advisory and coordination responsibilities. These are commonly also supported by technical subcommittees or councils. The system then trickles down to provinces, districts, municipalities and communities in different formats. Contingency planning, emergency response teams, risk reduction and resilience-building are implemented at the decentralized levels. The relationships between national and decentralized levels do however vary, commonly from complete fragmentation and unclear understanding of disaster risk management mandates and limited resources to close coordination. Mozambique is one example of a forefront country in terms of national support to provinces and districts. Furthermore, fully funded contingency plans are a prerequisite for the implementation of preparedness planning; without this, the contingency plans will remain merely conceptual and thus not serve the purpose of risk reduction and rapid response.

Important to note is, however, that the findings in this review do not make it possible to draw conclusions on the de facto implementation of disaster risk management systems or the operational capacity of the countries. As disaster risk management requires up-to-date approaches and exposure to hazards, vulnerabilities as well as national disaster risk management frameworks are constantly evolving. Continuous capacity-building to strengthen the systems from the national level to provinces, districts, municipalities, and communities should be standard. South Africa exemplifies a country with an evolving disaster risk management system, currently developing 21 national guidelines that will strengthen the system from national to local levels. The guidelines will provide direction on disaster prevention, preparedness, response, recovery and mitigation – at a minimum standard and according to a harmonized framework. At this point, it is thus critical to consider parallel capacity-building linked to the guidelines to ensure that solid policies, strategies, and planning are translated into action and de facto risk reduction. As disaster risk management

systems are only as strong as their weakest link and thus require sufficient capacity across the board, continuous capacity-building should thus be undertaken, strengthening the pieces bit by bit.

In Southern Africa, regional initiatives, such as DIMSUR and the Zambezi River Basin Initiative, exist but more can be done across the board to foster partnerships with mutual goals of risk reduction and resilience. For example, a clear coordination structure between the SADC Secretariat and national disaster risk management structures is missing. Only the disaster risk management strategy exists to date and serves as the first step towards the ambition of greater regional capacity. Strengthening the SADC's role in this sense could help the region in managing cross-border, transboundary and regional hazards. The SADC could thus serve as a regional coordinator and support for cooperation and harmonized approaches, facilitating exchange between Member States at both strategic and operational levels. A regional platform for lessons learned and best practices of disaster risk management could be established, for instance, based on national disaster risk management councils and committees and/or mandated national disaster risk management authorities. In terms of preparedness for large-scale or transboundary disaster events, an emergency response roster derived from national disaster risk management practitioners could also be established to increase the regional operational capacity and strengthen national responses.

Furthermore, disaster risk management policies and plans of the six countries are primarily focused on hazards and refer to aspects of sustainable development and climate change in more general terms. References to urbanization and migration are less common.

In terms of linking disaster risk management with sustainable development, the causality of the two is well recognized globally as well as regionally and in the six countries. Nonetheless, disaster risk management approaches are most commonly hazard-focused and undertaken as separate initiatives with budgets made available first and foremost for preparedness and prepositioning of items as well as responses to disasters. Development initiatives are undertaken separately and in line with national development plans. As such, investments in development – targeted based on national contexts and specific development challenges – under the auspices of disaster risk reduction and resilience should be applied as a way of addressing the underlying risk factors of vulnerability. One potential approach is what in Zambia is referred to as "life skills-based disaster prevention education", which aims at building resilience of vulnerable populations. While primarily thought of for rural areas, this approach could also be applied in urban areas and informal settlements. As the most recent drought reveals, disaster events also have the potential to adversely affect the economy, poverty levels and food security, and as such pose risks to development progress. Disaster risk management should therefore be better mainstreamed into development priorities as a way of strengthening resilience and the ability to manage disaster risk with minimum impact.

Climate change is commonly recognized as a factor that will increase the frequency and intensity of disaster events. Malawi, Mozambique, Zambia and Zimbabwe all have National Adaptation Programmes of Action addressing the most immediate needs in terms of climate change priorities. Botswana's adaptation programme is under development and South Africa has an adaptation strategy. Hence, climate change is a priority in Southern Africa. The link between disaster risk management frameworks and adaptation programmes or climate change initiatives can be strengthened as a way of better understanding evolving climate change-induced hazards as well as how to address climate change as a disaster risk reduction measure – in line with the overall objectives of the COMESA–EAC–SADC Tripartite Programme for adaptation and mitigation actions, possibly with a stronger link to disaster risk management.

South Africa is the country that has the most comprehensive urban risk reduction strategies in place, currently implementing different forms of initiatives for urban resilience. As a country with one of the highest urbanization rates in the region, it can serve as a model country for this kind of urban initiatives, sharing lessons learned and best practices through, for instance, a regional urban risk reduction platform, and help formulate proactive and progressive urban resilience initiatives

for the region. The Integrated Urban Development Framework as well as Durban's and Cape Town's pilot activities under the 100 Resilient Cities initiative already serve as a good starting point. For countries such as Malawi, Mozambique, Zambia and Zimbabwe, the transition from primarily rural to urban populations provides a chance to build resilient urban centres prior to the kind of rapid unplanned expansion that tends to take place in the region and globally.

Disaster risk management systems that address the specific vulnerabilities of migrants in a region characterized by population movement are also critical. In particular, as climate change is expected to further fuel this migratory flow – both internally and across borders – policies such as Botswana's, acknowledging the need to assist internal migrants with minimum-standard housing options as an urban risk reduction initiative, can serve as a basis for potential upscale, targeting local and migrant populations alike. The guidelines developed in Zambia for the protection of vulnerable migrants are another initiative that could be adapted to better reflect the full spectrum of vulnerabilities of migrants and potentially serve as a reference for a regional protection framework and migrant-sensitive disaster risk reduction. In addition, the MICIC framework serves as a good reference tool for migrant-sensitive preparedness and response, under which national governments and actors in destination countries, consular services and authorities of countries of origin, as well as international and national stakeholders could enhance the capacity for providing assistance to migrants in countries of crisis.

In conclusion, a range of different initiatives could be of relevance for Southern Africa – at the national and SADC levels. As such, closer regional dialogue, exchange, coordination and cooperation between SADC Member States would be of great benefit. As a first step, a regional consultative process, such as the Migration Dialogue for Southern Africa (MIDSA), could serve as a platform bringing key stakeholders together to discuss disaster risk challenges in the region, initiate dialogue on issues such as climate change adaptation and disaster risk reduction, could serve as a reference for protection frameworks for cross-border displacement and long-term environmental migration, further explore the SADC's role and responsibility as well as that of Member States, and set out an action agenda for the way forward for regional resilience.

Disaster risk reduction and resilience-building in Southern Africa requires targeted approaches, contextually adapted to prevalent hazards, development challenges, and disaster risk governance and management systems, as well as the regional dynamics in Southern Africa, strengthening the link between disaster risk and development, vulnerability and resilience, and potential cross-border, transboundary and regional risks.

The next chapter includes a list of suggested recommendations in response to this, for further consideration by the SADC and its Member States, and in particular the six target countries of this desk review, namely, Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe.

6. Recommendations

Following is a summary of suggested recommendations identified as part of this review, subject to further consideration, discussion, and agreement with relevant regional and national stakeholders as well as partners.

	Suggested Recommendations
Botswana	Strengthen the understanding of cross-border, transboundary and regional hazards of relevance to Botswana in the national disaster risk management framework.
	Develop a framework named "Towards Urban Resilience 2050", focusing on strong and resilient urban areas in the country, ensuring risk-sensitive expansion of urban areas that can cater to urban population growth and increased population density in terms of disaster risk and resilience.
	Ensure adequate assistance to vulnerable migrants, for instance, through the establishment of migrant reception centres at key border crossings, targeting migrants entering Botswana and with provision of basic services and information.
	Strengthen the national disaster risk management framework through capacity-building of key national and decentralized stakeholders, including the mainstreaming of climate change, development, urbanization and migration.
Malawi	Strengthen the understanding of cross-border, transboundary and regional hazards of relevance to Malawi in the national disaster risk management framework.
	Develop rural resilience initiatives for enhanced community coping capacity and disaster risk reduction in identified rural spaces of vulnerability, for instance, through adapted rural life skills-based disaster prevention.
	Launch a proactive and preemptive long-term urban resilience plan, integrating disaster risk reduction and resilience in urban planning and development of inclusive urban settlements, with focus on housing, water and sanitation, basic service delivery and access to social infrastructure, as well as urban livelihood opportunities and migrant-sensitive disaster risk reduction. This can be done as life skills-based disaster prevention programmes. Lessons learned from other countries with higher levels of urbanization as well as similar risk profiles could be mapped out and taken into account in the national adaptation for Malawi.
	Strengthen the national disaster risk management framework through capacity-building of key national and decentralized stakeholders, including the mainstreaming of climate change, development, urbanization and migration.

	Suggested Recommendations
Mozambique	Strengthen the understanding of cross-border, transboundary and regional hazards of relevance to Mozambique in the national disaster risk management framework.
	Develop rural resilience initiatives for enhanced community coping capacity and disaster risk reduction in identified rural spaces of vulnerability, for instance, through adapted rural life skills-based disaster prevention.
	Launch a proactive and preemptive long-term urban resilience plan, integrating disaster risk reduction and resilience in expansion of existing urban areas as well as urban planning and development of new inclusive urban settlements, with focus on housing, water and sanitation, basic service delivery and access to social infrastructure as well as urban livelihood opportunities. This can be done as life skills-based disaster prevention programs. Lessons learned from other countries with higher levels of urbanization as well as similar risk profiles could be mapped out and taken into account in the national adaptation programme of Mozambique.
	Enhance the understanding of environmental migration and displacement patterns in Mozambique as well as support mechanisms available for Mozambican nationals in other countries in times of crisis, for instance, through partnerships with national counterparts in destination countries with high proportion of Mozambican emigrants (e.g. South Africa) as well as through the application of the MICIC framework.
	Strengthen the national disaster risk management framework through capacity-building of key national and decentralized stakeholders, including the mainstreaming of climate change, development, urbanization and migration.
South Africa	Strengthen the understanding of cross-border, transboundary and regional hazards of relevance to South Africa in the national disaster risk management framework.
	Develop urban resilience initiatives targeting the urban specific vulnerabilities under the Integrated Urban Development Framework, for instance, through urban life skills-based disaster prevention programmes that include elements of social cohesion and social upgrade, and consider disaster risk and climate change.
	Establish an urban risk reduction and resilience exchange platform for South Africa, coordinated by the NDMC or other relevant authority in cooperation with provincial and municipal authorities, enabling sharing of information on ongoing urban resilience initiatives and pilot activities, best practices and lessons learned. Such platform could also be of relevance at the regional level in the SADC, coordinated by South Africa.
	Develop a national framework for MICIC preparedness capacity in response to migrants in crisis, considering the many international migrants residing in South Africa and risks of natural disasters as well as human-made crises like xenophobic outbreaks, including cooperation with consular services and national authorities in countries of origin.
	Strengthen the national disaster risk management framework through capacity-building of key national and decentralized stakeholders in light of the 21 disaster risk management guidelines currently under development by the NDMC. Capacity-building activities are recommended to include the mainstreaming of climate change, development, urbanization and migration, as well as other relevant cross-cutting aspects of disaster risk reduction.

	Suggested Recommendations
Zambia	Strengthen the understanding of cross-border, transboundary and regional hazards of relevance to Zambia in the national disaster risk management framework.
	Develop rural resilience initiatives for enhanced community coping capacity and disaster risk reduction in identified rural spaces of vulnerability, for instance, through adapted rural life skills-based disaster prevention.
	Develop urban resilience initiatives for enhanced urban community coping capacity and disaster risk reduction in identified urban spaces of vulnerability, for instance, through adapted urban life skills-based disaster prevention, integrating disaster risk reduction and resilience in expansion of existing urban areas as well as urban planning and development of new inclusive urban settlements, with focus on housing, water and sanitation, basic service delivery, and access to social infrastructure and urban livelihood opportunities. Lessons learned from other countries with higher levels of urbanization as well as similar risk profiles could be mapped out and taken into account in the national adaptation for Zambia
	Elaborate the Guidelines for Protection of Vulnerable Migrants and explore possibilities of expanding its scope to include cross-border and international migrants vulnerable to disaster risk as well as displacement. In complement, develop a national framework for preparedness and response targeting migrants in countries of crisis, including assistance to Zambian emigrants in other countries as well as migrant populations residing in Zambia.
	Strengthen the national disaster risk management framework through capacity-building of key national and decentralized stakeholders, including the mainstreaming of climate change, development, urbanization and migration.
Zimbabwe	Strengthen the understanding of cross-border, transboundary and regional hazards of relevance to Zimbabwe in the national disaster risk management framework.
	Develop rural resilience initiatives for enhanced community coping capacity and disaster risk reduction in identified rural spaces of vulnerability, for instance, through adapted rural life skills-based disaster prevention.
	Enhance preparedness and response capacity and adapt the MICIC framework on providing assistance to the many Zimbabwean emigrants in countries of crisis, for instance, through partnerships with national counterparts in destination countries with high proportion of Zimbabweans (e.g. South Africa).
	Explore how the link between remittances and investments in development, disaster risk reduction, and resilience programmes can be strengthened based on the National Diaspora Policy, diaspora engagement and recently established framework for migration for development.
	Strengthen the national disaster risk management framework through capacity-building of key national and decentralized stakeholders, including the mainstreaming of climate change, development, urbanization and migration.

	Suggested Recommendations
SADC region	Strengthen the understanding of cross-border, transboundary and regional hazards of relevance to the SADC region, and mainstream into regional and national disaster risk management frameworks.
	Organize a regional consultative meeting elaborating on specific topics of relevance to the region (e.g. transboundary hazards, climate change adaptation and disaster risk, urban disaster risks and resilience, and cross-border displacement and environmental migration). Also, facilitate dialogue on the regional disaster risk management architecture as well as the role of the SADC in relation to the disaster risk management structures of the Member States, possibly through the already existing regional forum, MIDSA.
	Enhance the capacity of the SADC Secretariat and its Disaster Risk Reduction Unit to take on a key role and responsibility. This could be done through, for instance, secondment of disaster risk reduction and resilience officer to the SADC Secretariat, capacity-building within the SADC for strengthened regional disaster risk management in line with the SADC Disaster Risk Management Strategy and Fund, learning missions from and exchanging visits within the region with Member States as well as with other regions and countries to gather best practices and explore existing disaster risk reduction frameworks.
	Strengthen regional preparedness and planning at a more strategic level and/or in terms of response capacity through, for instance, a regional relief roster with disaster risk management practitioners of varying profiles, ready to respond to large-scale or transboundary disaster events in the region.
	Enhance regional coordination by establishing an SADC platform for systematic exchange and sharing of lessons learned and best practices in areas of relevance to multiple Member States. Examples include but are not limited to: • Life skills-based disaster prevention initiatives bridging development with disaster risk reduction and resilience in rural and urban areas (co-lead with Zambia); • Existing urban disaster risk reduction initiatives as well as nationally implemented urban resilience programmes (co-lead with South Africa); • Preparedness and response capacity for emergency assistance sensitive to the specific vulnerabilities of the region's many migrants, for instance under the MICIC framework; • Other initiatives of relevance to the SADC region.

List of references and key resources

Publications

100 Resilient Cities–Pioneered by the Rockefeller Foundation (100RC)

2017 *Global Migration – Resilient Cities at the Forefront: Strategic Actions to Adapt and Transform Our Cities in an age of Migration*. 100RC, New York.

Centre for Research on the Epidemiology of Disasters (CRED)

2016 What is the human cost of weather-related disasters (1995–2015)? *CRED Crunch*, 42(April).

Chirisa, I. et al.

2015 The 2008/2009 cholera outbreak in Harare, Zimbabwe: Case of failure in urban environmental health and planning. *Reviews on Environmental Health*, 30(2):117–124.

COMESA–EAC–SADC Tripartite

2011 *Programme on Climate Change Adaptation and Mitigation in the Eastern and Southern Africa (COMESA-EAC-SADC) Region*.

Fratzke, S.

2015 Top 10 of 2015 – Issues #2: Displacement reaches record high as wars continue and new conflicts emerge. Migration Policy Institute (MPI), 17 December. Available from www.migrationpolicy.org/article/top-10-2015-%E2%80%93-issue-2-displacement-reaches-record-high-wars-continue-and-new-conflicts

Frouws, B. and C. Horwood

2017 *Smuggled South: An Updated Overview of Mixed Migration from the Horn of Africa to Southern Africa with Specific Focus on Protection Risks, Human Smuggling and Trafficking*. Regional Mixed Migration Secretariat (RMMS) Briefing Paper 3 series, prepared for Danish Refugee Council (DRC) and the RMMS Horn of Africa and Yemen.

Gemenne, F.

2010 Migration, a possible adaptation strategy? *Synthèses*, No. 03/10 June. Institute for Sustainable Development and international Relations (IDDRI), Paris. Available from www.iddri.org/Publications/Collections/Syntheses/Sy_1003_Gemenne_Migration.pdf

Global Camp Coordination and Camp Management (CCCM) Cluster

2014 *The MEND Guide: Comprehensive Guide for Planning Mass Evacuations in Natural Disasters*. Available from www.globalcccmcluster.org/system/files/publications/MEND_download.pdf

Global Challenges Foundation

2017 *Global Challenges Annual Report: GCF & Thought Leaders Sharing What You Need to Know on Global Catastrophic Risks 2017 (Global Catastrophic Risks 2017)*. Available from https://api.globalchallenges.org/static/files/Global%20Catastrophic%20Risks%202017.pdf

Government of Botswana

n.d. Communication on intended nationally determined contribution for the development of National Adaptation Plan on Climate Change. Available from www4.unfccc.int/ndcregistry/PublishedDocuments/Botswana%20First/BOTSWANA.pdf

1996 National Policy on Disaster Management, Presidential Directive No. CAB 27/96, August. National Disaster Management Office (NDMO)/Office of the President.

2009 National Disaster Risk Management Plan. NDMO/Office of the President.

2013 *National Disaster Risk Reduction Strategy 2013–2018: Beyond Vulnerability – Towards Resilience*. NDMO/Office of the President.

2017 Tutume Sub-District Disaster Contingency Plan 2017. Central District Council, Tutume Sub-District.

Government of Malawi

1964 Immigration Act 1964.

2006 Malawi's National Adaptation Programme of Action, under the United Nations Framework Convention on Climate Change, March.

2015a National Contingency Plan, Malawi 2016–2017.

2015b *National Disaster Risk Management Policy 2015*. Office of the Secretary and Commissioner for Disaster Management Affairs, Lilongwe.

2015c District Council Disaster Contingency Plan 2016/2017. District of Mangochi, Mangochi.

2016 Draft Salima District Council Disaster Contingency Plan 2015/2016. Salima District Council, Salima.

Government of Mozambique

2007 *National Adaptation Programme of Action (NAPA)*. Ministry for the Coordination of Environmental Affairs MICOA, Maputo.

2016a *Plano de Contingência para a Epoca Chuvosa e de Ciclones, 2016–2017.* Council of Ministers.

2016b *Vilankulo Plano de Contingência 2016–2017*. Province of Inhambane, Government of the Vilankulo District.

2016c *Plano de Contingência para a Epoca Chuvosa e de Ciclones, 2016–2017*. Province of Inhambane, Government of the Govuro District.

Government of South Africa

2002a Disaster Management Act, 2002 (Act No. 57 of 2002). *Government Gazette*, vol. 451, no. 24252. Available from www.cogta.gov.za/cgta_2016/wp-content/uploads/2016/06/DISASTER-MANAGEMENT-ACT.pdf

2002b Disaster Management Amendment Act (Act No. 16 of 2015). *Government Gazette*, vol. 606, no. 39520. Available from www.gov.za/sites/www.gov.za/files/39520_Act16of2015DisasterManAmendAct.pdf

2005 *National Disaster Management Framework*. In: *Government Gazette*, 29 April. Department of Cooperative Governance and Traditional Affairs, National Disaster Management Centre (NDMC).

2011a *City of Tshwane Disaster Management Plan.* City of Tshwane, Municipal Disaster Management Centre.

2011b *Methodological Report on Rebasing of National Poverty Lines and Development of Pilot Provincial Poverty Lines: Technical Report.* Statistics South Africa, Pretoria.

2015a *National Disaster Management Centre Annual Report 2014/2015*. Department of Cooperative Governance and Traditional Affairs, NDMC.

2015b *National Action Plan to Combat Racism, Racial Discrimination, Xenophobia and Related Intolerance, 2016-2021*, Draft for Public Consultation. Department of Justice and Constitional Development.

2016a *Integrated Urban Development Framework: A New Deal for South African Cities and Towns*. Department of Cooperative Governance and Traditional Affairs, Pretoria.

2016b South Africa national adaptation strategy. Draft, September. Department of Environmental Affairs.

2017 Guideline on the development and structure of a disaster management plan. Department of Cooperative Governance and Traditional Affairs Notice 415 of 2017, *Government Gazette*, no. 40865 (26 May). Available from www.gov.za/sites/www.gov.za/files/40865_gen415.pdf

Government of Zambia

2007 *Formulation of the National Adaptation Programme of Action (NAPA) on Climate Change: Final Report*. Ministry of Tourism, Environment and Natural Resources, Lusaka.

2010 Immigration and Deportation Act 2010 (Immigration and Deportation Bill No. 18 of 2010).

2012 *Zambia 2010 Census of Population and Housing: National Analytical Report,* December. Central Statistics Office, Lusaka.

2015a Draft 2015/2016 National Contingency Plan. Office of the Vice President, Disaster Management and Mitigation Unit (DMMU), Lusaka.

2015b *National Disaster Management Policy*. Office of the Vice President, DMMU, Lusaka.

Government of Zambia and International Organization for Migration (IOM)

2016 *Guidelines: Protection Assistance to Vulnerable Migrants in Zambia*. Government of Zambia and IOM, Lusaka.

Government of Zimbabwe

n.d. Immigration Act (Acts 18/1979, 32/1979 (s. 16), 29/1981 (s. 59), 13/1983 (s. 21), 23/1984 (s. 24), S.I. 78/1987, 8/2000, 22/2001).

n.d. *Zimbabwe's National Climate Change Response Strategy*. Ministry of Environment, Water and Climate, Harare.

n.d. *Zimbabwe National Contingency Plan, November 2016–October 2017*. Department of Civil Protection, Harare.

2016 *Zimbabwe Diaspora Policy*, July. Ministry of Macro-Economic Planning and Investment Promotion.

Guadagno, L.

2015 Reducing migrants' vulnerability to natural disasters through disaster risk reduction measures, including migrants in disaster prevention, preparedness, response and recovery efforts. *Migrants in Countries in Crisis (MICIC) Issue Brief,* October.

Guha-Sapir, D., R. Below and Ph. Hoyois

n.d. Emergency Events Database (EM-DAT): The CRED/OFDA International Disaster Database. Université Catholique de Louvain, Brussels. Available from http://www.emdat.be

Harrison, P. et al.

2014 Urban Resilience Thinking for Municipalities. University of Witwatersrand and Gauteng City-Region Observatory, Johannesburg.

Holloway, A. et al.

2013 *Humanitarian Trends in Southern Africa: Challenges and Opportunities*. Regional Inter-Agency Standing Committee, Southern Africa; Food and Agriculture Organization of the United Nations (FAO), Rome.

Horwood, C.

2009 *In Pursuit of the Southern Dream: Victims of Necessity. Assessment of the Irregular Movement of Men from East Africa and the Horn to South Africa.* International Organization for Migration, Geneva.

Index for Risk Management (INFORM)

2017 *Inform Global Model: Interpreting and Applying – Guidance Note*. Available from www.inform-index.org

Inter-Agency Standing Committee (IASC)

2007 *Inter-Agency Contingency Planning Guidelines for Humanitarian Assistance*. IASC, Geneva.

2015 Contingency plan template. Available from www.humanitarianresponse.info/en/coordination/preparedness/document/iasc-contingency-plan-template

Inter-Agency Standing Committee, Inter-Agency Humanitarian Partnership Team

2011 Violence against foreigners and communities of diversity: Preparedness and response plan for the Republic of South Africa. Draft.

Intergovernmental Panel on Climate Change (IPCC)

2012 Summary for policymakers. In: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (C.B. Field et al., eds.). Cambridge University Press, Cambridge and New York, pp. 3–21. Available from www.ipcc.ch/pdf/special-reports/srex/SREX_Full_Report.pdf

Internal Displacement Monitoring Centre (IDMC)
2016a IDMC global figures 2016: New displacements. Available from www.internal-displacement.org/database/www.internal-displacement.org/database/ (accessed 20 July 2017).

2016b *Global Report on Internal Displacement (GRID 2016)*. IDMC, Geneva. Available from www.internal-displacement.org/globalreport2016/

International Federation of Red Cross and Red Crescent Societies (IFRC)
n.d. *Zambezi River Basin Initiative*. IFRC, Southern Africa. Available from www.ifrc.org/PageFiles/113731/Zambezi_River_Project_LR3_0.pdf

2010 *World Disaster Report 2010: Focusing on Urban Risk*. IFRC, Geneva.

2012 Contingency Planning Guide. IFRC, Geneva. Available from www.ifrc.org/PageFiles/40825/1220900-CPG%202012-EN-LR.pdf

International Organization for Migration (IOM)
2009a Briefing note on HIV and labour migration in Botswana. IOM Regional Office for Southern Africa, Pretoria.

2009b Briefing note on HIV and labour migration in Mozambique. IOM Regional Office for Southern Africa, Pretoria.

2009c *Migration in Zimbabwe: A Country Profile*. IOM, Geneva. Available from https://publications.iom.int/books/migration-zimbabwe-country-profile-2009

2011 *Glossary on Migration*. Second edition, International Migration Law Series No. 25, IOM, Geneva. Available from https://publications.iom.int/books/international-migration-law-ndeg25-glossary-migration

2013 *Health Vulnerabilities Study of Mixed Migration Flows from the East and Horn of Africa and the Great Lakes Region to Southern Africa.* IOM, Geneva. Available from https://publications.iom.int/books/health-vulnerabilities-mixed-migrants-east-and-horn-africa-and-great-lakes-southern-africa

2014 *Migration in Malawi: A Country Profile 2014*. Available from https://publications.iom.int/books/migration-malawi-country-profile-2014

2015 *World Migration Report 2015 – Migrants and Cities: New Partnerships to Manage Mobility*. IOM, Geneva. Available from https://publications.iom.int/books/world-migration-report-2015-migrants-and-cities-new-partnerships-manage-mobility

International Organization for Migration South Africa (IOM) and United Nations Development Programme (UNDP) South Africa
2012 Draft report on project implementation sites (community mapping/profile report): Support to the South African Government to strengthen communities of diversity and peace, January.

Ionesco, D., D. Mokhnacheva and F. Gemenne
2017 *The Atlas of Environmental Migration.* Routledge/Taylor & Francis Group, Oxford and London; Earthscan from Routledge, London; IOM, Geneva, p. 16.

Karanja, E.
2017 Urban disasters highlight need for resilience in Africa. United Nations International Strategy for Disaster Reduction (UNISDR), 10 May. Available from www.unisdr.org/archive/53015

Kreft, S., D. Eckstein and I. Melchior
2017 *Briefing Paper – Global Climate Risk Index 2017: Who Suffers the Most from Extreme Weather Events? Weather-related Loss Events in 2015 and 1996 to 2015*. Germanwatch, Berlin and Bonn. Available from https://germanwatch.org/en/download/16411.pdf

Lal, P.N. et al.
2012 National systems for managing the risks from climate extremes and disasters. In: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (C.B. Field et al., eds.). Cambridge University Press, Cambridge and New York, pp. 339–392. Available from www.ipcc.ch/pdf/special-reports/srex/SREX_Full_Report.pdf

Lavell, A. et al.
2012 Climate change: New dimensions in disaster risk, exposure, vulnerability, and resilience. In: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (C.B. Field et al., eds.). Cambridge University Press, Cambridge and New York, pp. 25–64. Available from www.ipcc.ch/pdf/special-reports/srex/SREX_Full_Report.pdf

Lefko-Everett, K.
2004 Botswana's changing migration patterns. Migration Policy Institute (MPI), 1 September. Available from www.migrationpolicy.org/article/botswanas-changing-migration-patterns (accessed 27 May 2017).

Lesolle, D./University of Botswana
2012 *SADC Policy Paper on Climate Change: Assessing the Policy Options for SADC Member States*. Southern African Development Community (SADC) Research and Policy Paper Series 01/2012, SADC, Gaborone.

Liu, M. and M.C. Huang
2014 Compound disasters and compounding processes: Implications for disaster risk management. Input paper prepared for the Global Assessment Report on Disaster Risk Reduction 2015. United Nations International Strategy for Disaster Reduction (UNISDR), Geneva.

Migrants in Countries in Crisis Initiative (MICIC)
2016 *Guidelines to Protect Migrants in Countries Experiencing Conflict or Natural Disaster*. MICIC Secretariat, Geneva.

Oxford Policy Management
2015 Developing financing mechanisms to support the implementation of the draft ´Policy Framework for Population Mobility and Communicable Diseases in the SADC Region´: Situational Analysis. March, unpublished.

Regional Inter-agency Standing Committee (RIASCO)
2016 *RIASCO Action Plan for Southern Africa, May 2016–April 2017.*

Southern African Development Community (SADC)
2016a *Regional Humanitarian Appeal June 2016*. SADC, Gaborone.

2016b SADC Disaster Preparedness and Response Strategy and Fund 2016–2030: Enhancing coordination for effective disaster preparedness, response and resilience. Draft, July.

2017 *Regional Humanitarian Response, Final Report, March 2017*. SADC, Gaborone.

Technical Centre for Disaster Risk Management, Sustainability and Urban Resilience (DiMSUR)
2015 *DiMSUR Strategic Plan 2016–2026*. Maputo, DiMSUR; Nairobi and Maputo, UN-Habitat.

United Nations
n.d. *Sendai Framework for Disaster Risk Reduction 2015–2030*.

The United Nations Conference on Housing and Sustainable Urban Development (Habitat III)
2016 New urban agenda: Draft outcome document for adoption in Quito, October 2016. Prepared in September. Available from http://habitat3.org/the-new-urban-agenda/

United Nations Department of Economic and Social Affairs (UN DESA), Population Division
2013 Cross-national comparisons of internal migration: An update on global patterns and trends. Technical paper no. 2013/1.

2014 Country profiles. World Urbanization Prospects: The 2014 Revision. Available from https://esa.un.org/unpd/wup/Country-Profiles/

2015a Trends in international migration, 2015. *Population Facts,* no. 2015/4, December.

2015b *Trends in International Migrant Stock: The 2015 Revision.* United Nations database, POP/DB/MIG/Stock/Rev.2015. United Nations, New York.

United Nations Development Programme (UNDP)
2016 *Human Development Report 2016: Human Development for Everyone.* UNDP, New York.

United Nations Development Programme (UNDP) Namibia
n.d. PIMS 4711: Scaling up community resilience to climate variability and climate change in Northern Namibia, with a special focus on women and children. Available from https://info.undp.org/docs/pdc/Documents/NAM/Prodoc%20Final%20Revised%20SCORE%20Prodoc%20(Updated%20February%205,%202015).pdf

United Nations Economic Commission for Africa (UNECA)
2015 *Assessment Report on Mainstreaming and Implementing Disaster Risk Reduction in Southern Africa*. UNECA, Addis Ababa.

(Office of the) United Nations High Commission for Refugees (UNHCR)
n.d. UNHCR statistics: The world in numbers. Available from http://popstats.unhcr.org/datavizGT2016/index.html (accessed 20 July 2017).

United Nations Human Settlement Programme (UN-Habitat)
2015 *Sustainable Urban Development in Africa*. UN-Habitat, Nairobi.

United Nations International Strategy for Disaster Reduction (UNISDR)
2015 *Global Assessment Report on Disaster Risk Reduction 2015 – Making Development Sustainable: The Future of Disaster Risk Management*. UNISDR, Geneva.

University College London, Disaster Planning Unit (DPU)
2008 *Urbanisation and Municipal Development in Mozambique: Urban Poverty and Rural-Urban Linkages*. University College London, DPU, London.

US Department of State
2016 Country narratives. In: *Trafficking in Persons Report June 2016*. Department of State, Washington, D.C.

Websites

100 Resilient Cities–Pioneered by the Rockefeller Foundation (100RC)
- 100 Resilient Cities home page. Available from www.100resilientcities.org

Index for Risk Management (INFORM)
- INFORM country risk profiles for 191 countries. Available from www.inform-index.org/Countries/Country-profilesRef.

International Organization for Migration (IOM)
- Emergency manual. Available from https://emergencymanual.iom.int

Migrants in Countries in Crisis Initiative (MICIC)
- MICIC home page. Available from https://micicinitiative.iom.int

Nansen Initiative: Disaster-Induced Cross-Border Displacement
- Nansen Initiative home page. Available from www.nanseninitiative.org/

Platform on Disaster Displacement: Follow-up to the Nansen Initiative
- Platform on Disaster Displacement home page. Available from http://disasterdisplacement.org

PreventionWeb
- Key concepts. Available from www.preventionweb.net (accessed 20 July 2017)

Southern African Development Community (SADC)
- Regional Vulnerability Assessment and Analysis Programme. Available from www.sadc.int/sadc-secretariat/directorates/office-deputy-executive-secretary-regional-integration/food-agriculture-natural-resources/regional-vulnerability-assessment-analysis-programme-rvaa/ (accessed 20 July 2017)

United Nations International Strategy for Disaster Reduction (UNISDR)
- Terminology. Available from www.unisdr.org/we/inform/terminology (accessed 20 July 2017)

World Bank
- Country profiles. Available from www.worldbank.org/en/country/botswana (accessed 27 May 2017)

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International Organization for Migration

The UN Migration Agency