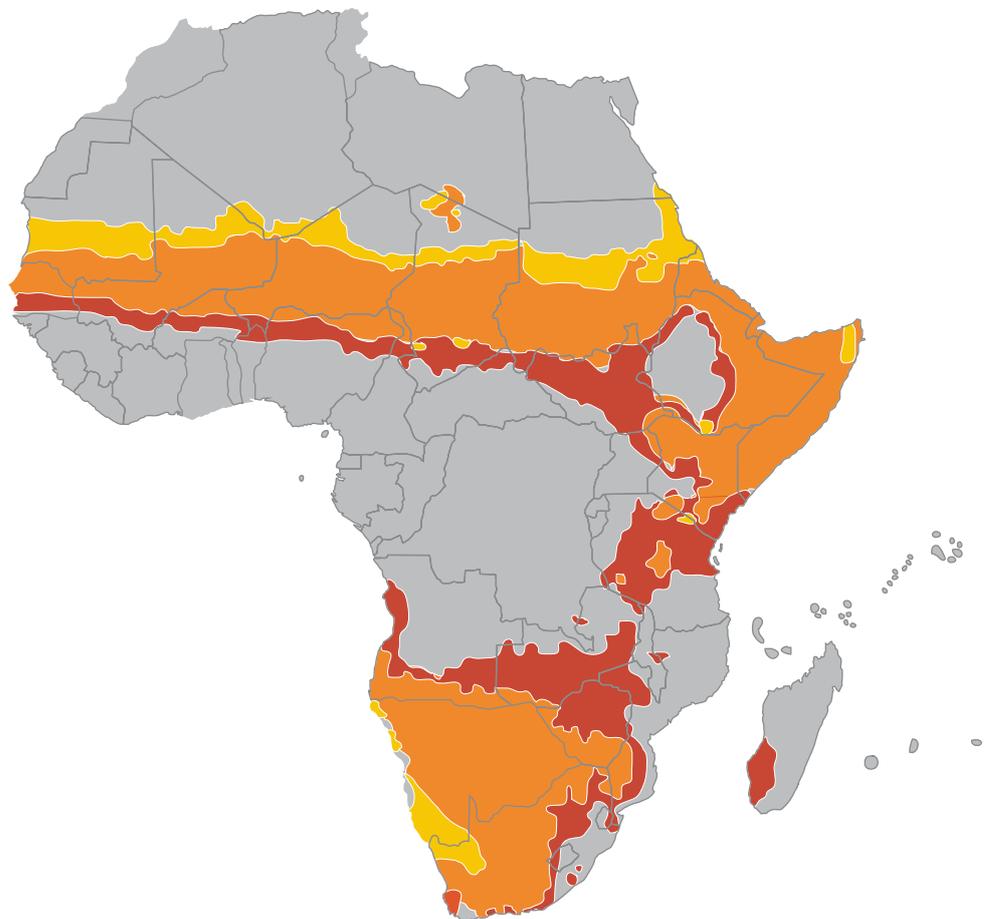


CLIMATE CHANGE ADAPTATION READINESS: LESSONS FROM THE 2015/16 EL NIÑO FOR CLIMATE READINESS IN SOUTHERN AFRICA

ALEX BENKENSTEIN



*African perspectives.
Global insights.*

SOUTH AFRICAN INSTITUTE OF INTERNATIONAL AFFAIRS

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Cover image source: RIASCO, 'RIASCO Action Plan for Southern Africa: Response Plan for the El Niño-Induced Drought in Southern Africa, May 2016 – April 2017, July 2016, p. 29, <http://reliefweb.int/sites/reliefweb.int/files/resources/RIASCO%20Action%20Plan%20Draft%20Document%20PDF%20version.pdf>. Estimates based on intergovernmental Panel on Climate Change (IPCC) data.

ABSTRACT

Southern Africa is experiencing its worst drought in at least 35 years. The drought is associated with an acute El Niño cycle, a periodic weather phenomenon that affects weather patterns across large regions of the globe, including Southern Africa. While the El Niño cycle is not linked directly to broader climate change processes, an assessment of the region's responses to the current drought does provide insight into its capacity to respond to severe environmental stresses. Insights drawn from such an assessment allow for a deeper understanding of climate adaptation readiness in the region. The paper concludes that there is a need to expedite the development of regional and national response plans to severe environmental stresses, and in particular to strengthen capacity to effectively implement and co-ordinate appropriate actions. At the national level, response capacity in numerous Southern African states remains low. Even in South Africa, where government capacity is the highest in the region, implementation delays and co-ordination challenges have hampered effective responses to the drought. Yet despite these problems, there have also been successes in regional and national responses to droughts and longer-term climate challenges. Such programmes and innovative responses can be scaled to achieve more far-reaching impacts and thereby further develop the region's climate adaptation readiness.

ABOUT THE AUTHOR

Alex Benkenstein is the Programme Head of the Governance of Africa's Resources Programme of the South African Institute of International Affairs (SAIIA), which he joined in November 2010. His work at SAIIA has focused on a number of resource governance-related issues, particularly in the fields of fisheries, ocean governance and mining. He graduated from the University of Stellenbosch with an MA in International Studies (cum laude) and is currently completing an MA in Programme Evaluation at the University of Cape Town.

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ABBREVIATIONS AND ACRONYMS

DAFF	Department of Agriculture, Forestry and Fisheries
ENSO	El Niño–Southern Oscillation
FAO	UN Food and Agriculture Organization
NJDCC	National Joint Drought Coordination Committee
RIASCO	Regional Inter-Agency Standing Committee
RVAA	SADC Regional Vulnerability Assessment and Analysis Programme
UNFCCC	UN Framework Convention on Climate Change
WC/WDM	water conservation and water demand management
WFP	World Food Programme

INTRODUCTION

A large proportion of the Southern African region is semi-arid or arid, characterised by high rainfall variability, frequent droughts and low soil moisture. The region has experienced four significant droughts since 1980, but the current drought (2015–2016) has been particularly severe. While its full impact cannot yet be assessed, it is already considered to be the worst drought in at least 35 years. Its severity has been ascribed in part to an acute El Niño weather pattern – a naturally occurring phenomenon that leads to the surface warming of the eastern and central Pacific Basin, which in turn has knock-on effects across much of the world. El Niño occurs every three to seven years and is thus a periodic, natural weather phenomenon not linked to longer-term climate change processes. However, the 2015/16 drought in Southern Africa has provided insights into the institutional and policy responses required to address such severe environmental stresses; in this respect, an analysis of the region's experiences may contribute to improved climate adaptation readiness. This paper provides a synthesis review of climate adaptation readiness in SADC. While comprehensive country-level assessments of climate adaptation readiness fall beyond its scope, an overview of regional responses as well as selected country-level examples (particularly from South Africa) serves to inform preliminary insights into gaps and priority actions to support enhanced climate adaptation readiness in the region.

CLIMATE CHANGE STRATEGIES AT COUNTRY AND REGIONAL LEVELS

The Paris Agreement, adopted at the 2015 UN Framework Convention on Climate Change (UNFCCC) Conference of the Parties, represents a significant milestone in global efforts to address climate change. Global climate negotiations have tended to focus on reducing levels of carbon dioxide and other greenhouse gases in order to prevent global temperature rises of more than 2°C above pre-industrial levels. Increasingly, however, there is recognition that a certain level of climate change impact is inevitable, and there is thus an urgent need for countries to implement both mitigation and adaptation actions.

Developing countries are particularly vulnerable to climate change, where vulnerability is understood as a function of both exposure and adaptive capacity. The resilience of ecosystems and societies in many regions has also been undermined by multiple stress factors such as the overutilisation and degradation of natural resources, urbanisation, population growth, pollution and other factors. Moreover, the capacity of developing countries to adapt to climate change is constrained by limited technological, financial and other resources. In this respect, debates around climate adaptation must also include consideration of the support that may be provided to developing countries in terms of financing, technology and capacity development.

The UNFCCC process has required country-specific inputs on climate actions through various frameworks, including national adaptation programmes of action, nationally appropriate mitigation actions, low emission development strategies and, most recently, intended nationally determined contributions. In many instances these engagements have spurred the development of country-level and regional climate strategies. Such strategies

The Southern African region will be both drier and hotter in the future, with reduced rainfall levels as well as changes in the intensity and frequency of precipitation, resulting in more extreme weather events and longer periods between rainfalls

synthesise the latest research on likely climate impacts and outline specific adaptation and mitigation targets, actions and timeframes. SADC¹ published a climate change adaptation strategy for the water sector in 2011,² and a paper outlining policy options on climate response for SADC member states in 2012.³ These documents have emphasised that the SADC region is particularly vulnerable to climate change, stemming not solely from direct climate change impacts but also from a combination of social, economic and environmental factors that interact with climate change. Climate models suggest that the Southern African region will be both drier and hotter in the future, with reduced rainfall levels as well as changes in the intensity and frequency of precipitation, resulting in more extreme weather events and longer periods between rainfalls.

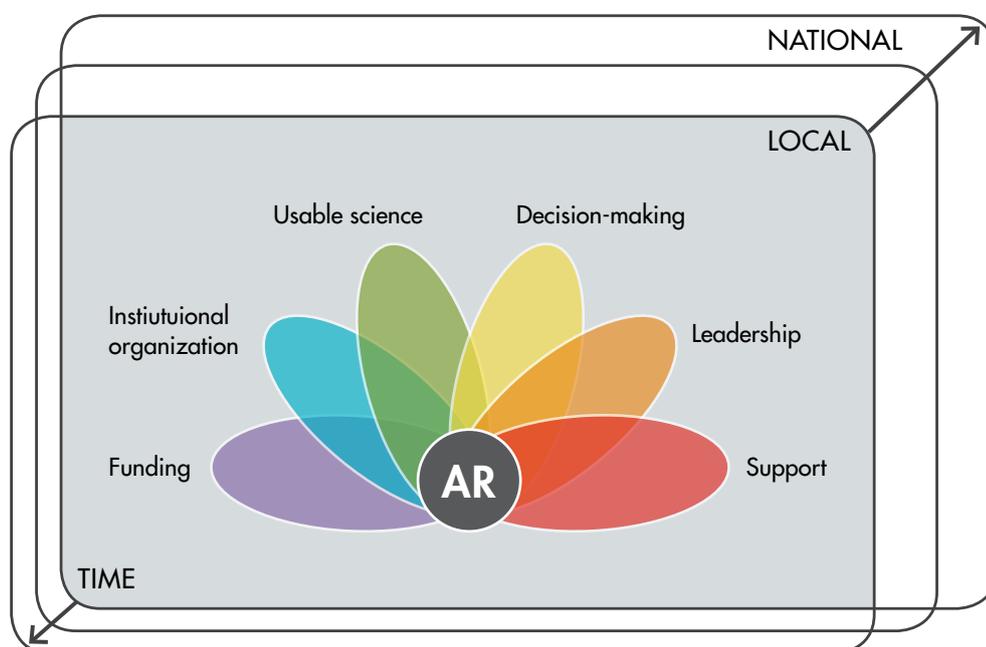
The SADC region's adaptive capacity varies widely and is shaped by factors such as the level of economic development, education, access to credit and technological development. Furthermore, it is important to note that, even where adaptive capacity is high, adaptation is neither inevitable nor automatic. In this respect, climate researchers have increasingly begun to emphasise the need to assess adaptation readiness in order to inform national and regional responses to climate change. Researchers James Ford and Diana King have noted that the concept of 'readiness' in the context of climate change has predominantly been used in assessments related to climate finance.⁴ For example, the UN Development Programme and the Global Adaptation Index both provide frameworks that support the assessment of countries to plan for, assess, deliver, monitor and report on climate finance activities. The researchers argue that adaptation readiness should be conceptualised more broadly, as the extent to which human systems (eg, nations, regions, businesses, communities, etc.) are prepared to adapt, providing an indication or measure of the likelihood of adaptation taking place. In other words, adaptation readiness evaluates the extent to which key governance factors are present that play a fundamental role in determining if and how adaptation takes place.⁵

Climate adaptation readiness may be assessed through a framework of nine components, namely political leadership; institutional organisation; stakeholder involvement; availability of climate change information; appropriate use of decision-making techniques; explicit consideration of barriers to adaptation; funding for adaptation; technology

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- 1 Member countries: Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.
 - 2 SADC, *Climate Change Adaptation in SADC: A Strategy for the Water Sector*, 2011, http://www.sadc.int/files/2213/5293/3544/SADC_Climate_Change_Adaptation_for_the_Water_Sector_booklet.pdf, accessed 15 September 2016.
 - 3 SADC, 'SADC Policy Paper on Climate Change: Assessing the Policy Options for SADC Member States', 2012, http://www.sadc.int/files/9113/6724/7724/SADC_Policy_Paper_Climate_Change_EN_1.pdf, accessed 15 September 2016.
 - 4 Ford JD & D King, 'A framework for examining adaptation readiness', *Mitigation and Adaptation Strategies for Global Change*, 20, 2015, pp. 505–526.
 - 5 Ford JD *et al.*, 'How to track adaptation to climate change: A typology of approaches for national-level application', *Ecology and Society*, 18, 3, 2013, p. 40.

development and diffusion; and adaptation research.⁶ The presence of all these factors is not necessarily required for effective adaptation, and adaptation will always be context specific at local, national and regional levels. However, this framework does provide an important conceptual tool through which adaptation readiness may be assessed, thereby laying the foundation for strategies and interventions to support the further development of adaptation readiness. For example, one of the key challenges related to climate adaptation, in Southern Africa and in other developing regions, is the prioritisation of adaptation action in the context of a variety of pressing developmental challenges.

FIGURE 1 ELEMENTS OF ADAPTATION READINESS (AR)



Source: Ford JD & D King, 'A framework for examining adaptation readiness', *Mitigation and Adaptation Strategies for Global Change*, 20, 2015, p. 510

EL NIÑO AND THE 2015/16 DROUGHT IN SOUTHERN AFRICA

The warming or cooling of equatorial sea-surface temperatures in the Pacific Ocean, associated with changes in atmospheric pressure, is linked to changes in temperature and rainfall patterns across large areas of the world. This El Niño–Southern Oscillation (ENSO)

6 *Ibid.*

also has a significant impact on Southern Africa's climate. ENSO cycles between warm periods (El Niño), associated with reduced rainfall, and colder, wetter periods (La Niña). Since 1977, El Niño events have occurred in 1982/83, 1986/87, for most of 1991–1995, and in 1997/98.⁷ The 2014–2016 El Niño has been among the strongest on record.

The current El Niño resulted in below-average rainfall in Southern Africa during the 2014/15 season, which worsened further in the 2015/16 season. From October 2015 to February 2016 rainfall was less than 75% of the average across most of Mozambique, Zimbabwe, Botswana, Namibia, Swaziland, Lesotho and South Africa, as well as significant portions of Zambia, Malawi, Angola and Madagascar. Across vast areas of South Africa, Zimbabwe, Zambia and Botswana, 2015 recorded the driest October–December since 1981. The rains were also 10 to 50 days late. In South Africa, 2015 was the driest year yet recorded. Temperatures have also been far above average. The combination of low rainfall and high temperatures has had widespread impacts across a range of sectors, including health, energy (the region relies significantly on hydropower) and, in particular, agriculture. Crop harvests were substantially reduced for two consecutive seasons and more than half a million livestock deaths were recorded.⁸

Estimates of the potential impact of the drought vary, but in all cases are significant. The Southern African Food and Nutrition Security Working Group reported in November 2015 that nearly 29 million people are food insecure in Southern Africa due to the carry-over effects of the past poor harvest combined with other structural factors.⁹ In 2016, the World Food Programme (WFP) stated that an estimated 40 million rural people and 9 million poor urban people would be affected by the drought. The drought's impact is particularly acute for rain-dependent small-scale farmers, who represent at least half of the region's population.¹⁰

Crop production in the 2014/15 growing season was 30% below average, meaning that stocks were low ahead of the peak of El Niño during the 2015/16 growing season. South Africa's maize yield for the 2015/16 growing season was nearly 50% lower than the five-year average. Maize production in the region is expected to be at least 30% below average due to the combined effect of late planting and drought stress. Moreover, water supply for rural areas, as well as electricity production, is also critically affected in several countries, from Namibia to Zimbabwe.¹¹

7 Mason SJ, 'El Niño, climate change, and Southern African climate', *Envirometrics*, 12, 2001, pp. 327–345.

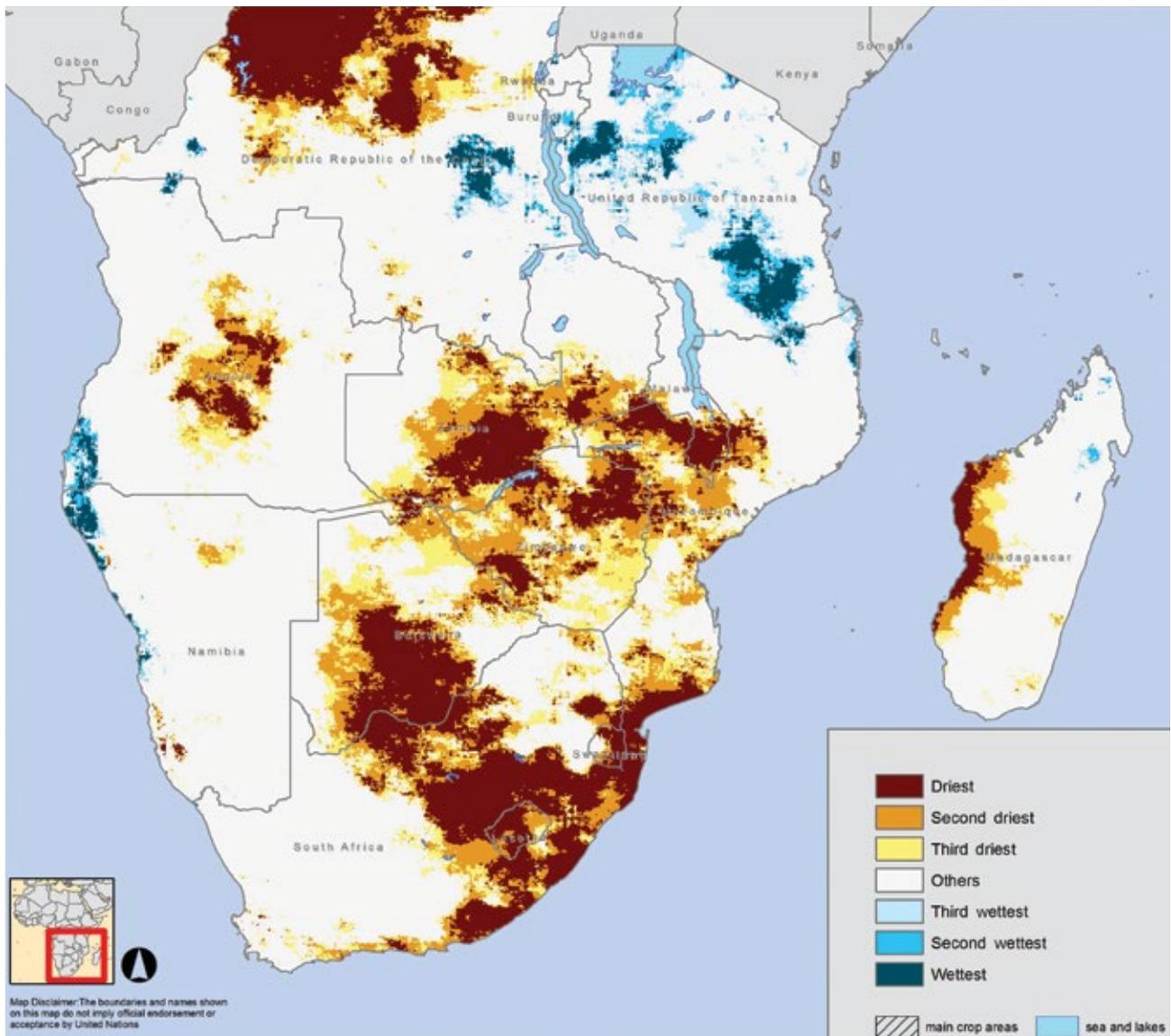
8 WFP (World Food Programme), *WFP Regional El Nino Situation Report*, 5 February 2016, <http://documents.wfp.org/stellent/groups/public/documents/ep/wfp281523.pdf>, accessed 4 October 2016.

9 FSNWG (Southern African Food and Nutrition Security Working Group), 'Southern Africa Food & Nutrition Security Update – November 2015', <http://reliefweb.int/report/south-africa/southern-african-food-and-nutrition-security-working-group-fsnwg-issue-4>, accessed 4 October 2016.

10 WFP, *op. cit.*

11 *Ibid.*

FIGURE 2 SEASONAL RAINFALL FROM OCTOBER 2015 TO JANUARY 2016 IN SOUTHERN AFRICA



Source: European Commission, 'El Niño: Devastating impact on southern Africa's harvests and food security', 12 February 2016, <https://ec.europa.eu/jrc/en/news/el-nino-devastating-impact-southern-africa-harvests-and-food-security>, accessed 14 October 2016

As food insecurity and water scarcity increase, there are early signs of worsening malnutrition in a region that exhibits high rates of chronic malnutrition

Crop failures, livestock deaths and other impacts on the agricultural sector have severe and direct consequences for the livelihoods of rain-dependent smallholder farmers, but food scarcity and increased reliance on imports also drive up food prices, thereby affecting both the rural and urban poor. For example, maize prices are 73% higher than average in Malawi and 53% higher in Zimbabwe, while in Mozambique they have increased by 50% in one year alone. Similar price increases have occurred across the region.¹²

The WFP has warned that, as food insecurity and water scarcity increase, there are early signs of worsening malnutrition in a region that exhibits high rates of chronic malnutrition. Some highly impacted areas exhibit higher than average rates of moderate and acute malnutrition. People with greater nutritional needs remain most at risk, including young children, nursing mothers, the elderly and those living with tuberculosis and/or HIV/AIDS.¹³

DROUGHT RESPONSES

Using computer models, scientists can forecast El Niño events up to nine months in advance. While farmers, policymakers and other stakeholders were thus not unaware of the impending El Niño cycle, its severity was not anticipated. El Niño does not always cause drought in Southern Africa, in part because only about 30% of rainfall variability can be accounted for by El Niño cycles, but also because the effect of the event is sometimes reduced by sufficient soil moisture and groundwater reserves carried over from the previous season.¹⁴ In other words, drought should be considered not exclusively as a weather-related phenomenon, as it also has an important social and economic dimension.¹⁵ However, the severity of the peak El Niño effect on the 2015/16 rainy season, as well as the compound effects of drought and heat in this period considered together with low rainfall and high temperatures in the preceding rainy seasons, soon became apparent.

At the regional level, mechanisms such as the Southern Africa Regional Climate Outlook Forum and the Famine Early Warning Systems Network provided important forums for the co-ordination of co-operative responses. Vulnerability assessments were conducted by national agencies and the UN's Food and Agriculture Organization (FAO). National Vulnerability Assessment Committees have been conducting vulnerability assessments in Southern Africa for at least a decade, and this has been supplemented by the outputs of SADC's Regional Vulnerability Assessment Committee. Each year the SADC Regional Vulnerability Assessment and Analysis Programme (RVAA) convenes a dissemination forum. The 2015 report noted that cereal production had fallen by 21% over the last season and that the number of food-insecure people in the region had increased by 13%

12 *Ibid.*

13 *Ibid.*

14 Meissner R & I Jacobs-Mata, 'South Africa's Drought Preparedness in the Water Sector: Too Little Too Late?', SAIIA (South African Institute of International Affairs) Policy Briefing, 155. Johannesburg: SAIIA, 2016.

15 *Ibid.*

over the last year, due in large part to the poor 2014/15 rainfall season. The risk of El Niño for the 2015/16 rainfall and agricultural season was also highlighted.¹⁶

FAO had established a Global Task Team on El Niño in 2015 to co-ordinate its responses to the impacts on agriculture, food and nutrition security and the livelihoods of affected populations. In December 2015 FAO's Global Information and Early Warning System issued a special alert on the effects of El Niño in the Southern African region. In February and March 2016 SADC meetings were convened to address a co-ordinated response to the drought, outlining a range of short-term and medium/long-term actions. It was at this time that the SADC Council recommended that a 'regional drought disaster' be declared and a humanitarian appeal for assistance be issued by the SADC chairperson.¹⁷ A SADC El Niño Logistics and Coordination Team was established in April 2016, composed of SADC Secretariat staff and regionally based UN agencies, in order to support a co-ordinated response to the drought.

The regional humanitarian appeal and the declaration of a regional drought disaster were subsequently issued in June 2016. By this time Lesotho, Malawi, Namibia, Swaziland and Zimbabwe had declared national emergencies, while South Africa had declared a drought disaster in eight of its nine provinces and Mozambique had issued an institutional red alert for its central and southern provinces. It was estimated that \$2.4 billion would be required to support the humanitarian needs of the affected populations, with a particular focus on Angola, the Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Swaziland, Zambia and Zimbabwe. The humanitarian appeal was issued in the same month that the 10th RVAA meeting was held. The meeting report indicated that the number of food-insecure people in Southern Africa had increased by 31% over the past year, now accounting for almost 14% of the region's population.¹⁸

The humanitarian appeal noted that the impact of the current El Niño pointed to insufficient mitigation and response capacity in many Southern African countries. Despite various national preparedness measures, most of the countries in the region were 'inadequately equipped to meet the needs of the affected populations and unable to translate global weather forecasts related to El Niño and La Niña into locally usable information'.¹⁹ The appeal called for strengthening or, where necessary, creating systems at the country and regional level to manage climate variability risks in the face of weak

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- 16 SADC, *SADC Regional Vulnerability Assessment and Analysis Synthesis Report 2015*, http://www.sadc.int/index.php/download_file/view/4306/1041/, accessed 14 October 2016.
- 17 SADC, *Regional Humanitarian Appeal*, June 2016, https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjBi-O7hu_RAhUIKcAKHYpSDmYQFggbMAA&url=https%3A%2F%2Fwww.sadc.int%2Ffiles%2F4814%2F6840%2F2479%2FSADC_Regional_Humanitarian_Appeal_June_20160713.pdf&rusg=AFQjCNGC6dBVzbBqvmYGux95xYIykcz4Ow&sig2=ix169rykbCNsKG5Y5QmNfg, accessed 20 September 2016.
- 18 SADC, *SADC Regional Vulnerability Assessment and Analysis Synthesis Report 2016*, <http://reliefweb.int/report/lesotho/sadc-regional-vulnerability-assessment-and-analysis-synthesis-report-2016-august-2016>, accessed 20 September 2016.
- 19 SADC, June 2016, *op. cit.*, p. 28.

national and local governance capacities. This would contribute to limiting the recurrence of the acute food insecurity and livelihood crises that may result as a consequence of extreme weather events.²⁰

Shortly following the publication of the SADC Regional Humanitarian Appeal, FAO released the Southern Africa El Niño Response Plan.²¹ This plan was intended to support co-ordination among FAO's global and national units, with a focus on reducing the food gap created by the poor planting season, protecting and enhancing livestock production at country level, and strengthening co-ordination, information and analysis relating to El Niño/La Niña and agriculture at all levels. The FAO Southern Africa Resilience Hub was assigned responsibility for overall co-ordination, in close consultation with partner governments, FAO country-level representatives, and FAO's technical units at the organisation's headquarters and regional office for Africa. The response plan committed the FAO to support existing structures such as the SADC Disaster Risk Reduction Unit and collaborate with the WFP on a series of interventions.

The third overarching co-ordination plan for Southern Africa was the Response Plan for the El Niño-Induced Drought in Southern Africa, published by the Regional Inter-Agency Standing Committee (RIASCO).²² RIASCO is part of a global network of inter-agency standing committees established for co-ordination, policy development and decision-making involving key UN and non-UN humanitarian partners. Both the FAO and RIASCO response plans addressed the question of alignment with the SADC appeal, outlining their particular emphases in relation to the broader humanitarian response.

The RIASCO Response Plan emphasised the need for sequenced and prioritised intervention, ensuring that alongside the necessary humanitarian response regional governments were also empowered to address systemic issues to avoid repeat shocks and build resilience. Using multi-dimensional poverty indices, combined with an assessment of response capacities and exposure, the RIASCO Response Plan identified Malawi, Mozambique and Zimbabwe as Tier 1 countries, with the most urgent need for humanitarian assistance. Angola, Lesotho, Madagascar and Swaziland were classified as Tier 2, while Namibia, Tanzania and Zambia were placed on a 'close monitoring watch list' and Botswana and South Africa were 'affected by drought but with sufficient coping capacity'.²³

20 *Ibid.*

21 FAO (UN Food and Agriculture Organization), 'Southern Africa El Niño Response Plan (2016/17)', July 2016, <http://www.fao.org/3/a-i5981e.pdf>, accessed 20 September 2016.

22 RIASCO (Regional Inter-Agency Standing Committee), 'RIASCO Action Plan for Southern Africa, May 2016 – April 2017', July 2016, <http://reliefweb.int/sites/reliefweb.int/files/resources/RIASCO%20Action%20Plan%20Draft%20Document%20PDF%20version.pdf>, accessed 20 September 2016.

23 *Ibid.*

TABLE 1 RISK SCORE FOR PRIORITISATION OF HUMANITARIAN INTERVENTION

Country	Vulnerability	Exposure and impact	Lack of capacity to cope	Risk score
Angola	6.0	1.7	6.2	4.0
Botswana	2.0	3.7	4.0	3.1
Comoros	3.0	3.2	7.8	4.2
Lesotho	5.0	4.2	6.8	5.2
Madagascar	8.0	2.7	8.0	5.6
Malawi	7.5	8.5	8.2	8.0
Mauritius	1.0	1.0	3.6	1.5
Mozambique	7.0	6.1	8.5	7.1
Namibia	4.0	6.0	5.1	5.0
Seychelles	1.0	1.0	4.1	1.6
South Africa	2.0	2.3	3.7	2.6
Swaziland	4.0	3.7	4.9	4.2
Tanzania	6.0	3.5	7.3	5.4
Zambia	6.5	4.8	6.9	6.0
Zimbabwe	5.5	7.4	7.6	6.8

Source: RIASCO, 'RIASCO Action Plan for Southern Africa, May 2016 – April 2017', July 2016, <http://reliefweb.int/sites/reliefweb.int/files/resources/RIASCO%20Action%20Plan%20Draft%20Document%20PDF%20version.pdf>, accessed 20 September 2016

INSIGHTS FROM SOUTH AFRICA'S DROUGHT RESPONSE

An effective drought response is a complex governance task requiring effective co-ordination across a range of government departments as well as with private sector and civil society actors. In addition, regional responses require co-ordination among governments, donors and a host of multilateral and civil society humanitarian agencies. Effective climate change adaptation is most likely to succeed where science- and policy-guided approaches overlap with local stakeholder-led identification of weaknesses and opportunities, and where proactive drought management is understood and dealt with as a key component of long-term resilience building.²⁴

At the national level Southern African countries have developed various policies and institutional structures to address climate change and extreme weather events. South

Effective climate change adaptation is most likely to succeed where science- and policy-guided approaches overlap with local stakeholder-led identification of weaknesses and opportunities

24 Midgley A & N Methner, 'Climate Adaptation Readiness for Agriculture: Drought Lessons from the Western Cape, South Africa', SAIIA Policy Briefing, 154. Johannesburg: SAIIA, 2016.

Africa's National Climate Change Response White Paper (2011), for example, highlights the threat of increasing climate risk and the need for strengthened disaster risk reduction and management. The country's Agricultural Drought Management Plan (2005) outlines the responsibilities of the Department of Agriculture, Forestry and Fisheries (DAFF), provincial departments of agriculture, local government and farming communities before, during and following a drought. The DAFF has also developed a draft Climate Change Sector Plan, aligned to the outcomes of South Africa's Long Term Adaptation Scenarios Flagship Research Programme.

In 2015 the South African government established a National Joint Drought Coordination Committee (NJDCC) led by the Minister of Cooperative Governance and Traditional Affairs and the National Disaster Management Centre. The NJDCC includes a range of government departments, as well as agencies such as the South African Weather Service. This co-ordinating structure assisted in supporting responses across government and facilitated a multi-stakeholder response. However, researchers have noted that in terms of South Africa's broader drought and climate change response, many of the responsible institutions are seriously hampered by a lack of human and financial resources, contested roles and responsibilities, weak inter-governmental co-operation, and a poor understanding of the paradigm shift from 'pre-emptive response' to 'prevention'.²⁵ This shift from 'response' to 'prevention' is equally urgent in the water sector, where water conservation and water demand management (WC/WDM) efforts require ongoing implementation through collaborative governance efforts that include the government, major water-use sectors and the broader citizenry. The refurbishment, operation and maintenance of bulk water supply systems and water distribution systems need to be improved, and the role of sub-national (municipal) entities in addressing WC/WDM requires strengthening.²⁶

In Mozambique, national vulnerability assessments have been carried out by the country's Technical Secretariat for Food Security and Nutrition, while the Ministry of Agriculture and Food Security assessed loss of and damage to crops and livestock. The assessments have informed the government's response to the drought, which has included food assistance, the provision of agricultural inputs, drilling/rehabilitation of water boreholes and water trucking to affected communities.²⁷ These efforts have been supplemented by extensive programmes implemented by the UN and other humanitarian agencies. A country-level strategic response plan published in April 2016 noted, however, that the capacity to respond in terms of funding was very low, with only one-fifth of the affected population having been assisted by that date.²⁸

25 *Ibid.*

26 Meissner R & I Jacobs-Mata, *op. cit.*

27 UN Office for the Coordination of Humanitarian Affairs, '2016 Strategic Response Plan – Mozambique', April 2016, <http://reliefweb.int/report/mozambique/mozambique-strategic-drought-response-plan-2016>, accessed 4 October 2016.

28 *Ibid.*

The livestock sector is an important component of the agricultural economies of the region, as over 60% of the region's total land area is non-arable. Moreover, three-quarters of the region's livestock is kept under smallholder, traditional farming systems. Improving the resilience and efficiency of livestock agriculture is therefore critical to achieving sustainable agricultural development and food security in the region.²⁹ While the immediate humanitarian response rightly focuses on mitigating livestock losses and providing tools for farmers to recover from the damage inflicted by the current drought, in the longer term a shift is required towards more drought-tolerant breeds and livestock species. These efforts can be supported by national breeding and restocking programmes. Subsistence, emerging and small-scale commercial farm systems are at high risk due to their dependency on rain-fed natural pastures and limited access to capital resources and management technologies.³⁰ Climate change and agricultural policies must address the requirements of this highly vulnerable component of the larger agricultural system. Similarly, in crop agriculture systems, land management systems such as conservation agriculture must be supported for enhanced resilience, as evidence suggests farmers practicing conservation agriculture were better able to withstand the negative impact of the 2015/16 drought. Context-specific strategies at the sub-national level, such as the recently launched Western Cape SmartAgri Programme, provide the basis for holistic, commodity-specific and spatially explicit strategies that are supported by scientific and local knowledge and experience.³¹

Context-specific strategies at the sub-national level, such as the recently launched Western Cape SmartAgri Programme, provide the basis for holistic, commodity-specific and spatially explicit strategies

CONCLUSION

The FAO El Niño Response Plan emphasises that the crisis facing Southern Africa in 2016 is one of livelihoods. Without an effective and co-ordinated response, the region risks a growing humanitarian burden, protracted relief operations through to 2018, intensified vulnerabilities and a potential rise in migration as income and labour opportunities shrink.³² In addition to the existing urgent humanitarian interventions required, there is a need for longer-term actions that address the vulnerabilities of the region and promote enhanced resilience, prosperity and food security. While regional and national-level drought response plans have been developed, it is necessary to expedite the development of such plans and, in particular, to strengthen capacity to effectively implement and co-ordinate appropriate actions. At the national level, response capacity in numerous Southern African states remains low. Even in South Africa, where government capacity is the highest in the region, implementation delays and co-ordination challenges have hampered effective responses to the drought. Yet there have also been successes in the regional and national responses to drought and longer-term climate challenges. Such

29 Dzama K, 'Is the Livestock Sector in Southern Africa Prepared for Climate Change?', SAIIA Policy Briefing, 153. Johannesburg: SAIIA, 2016.

30 *Ibid.*

31 Midgley A & N Methner, *op. cit.* See also GreenAgri, 'SmartAgri', <http://www.greenagri.org.za/smartagri-2/smartagri-plan/>, accessed 4 October 2016.

32 FAO, *op. cit.*

programmes and innovative responses can be scaled to achieve a more far-reaching impact and thereby further develop the region's climate adaptation readiness.

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