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Drought and Southern Africa: A Note from the Harare Regional Drought Monitoring Centre

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Drought is a normal part of southern Africa's climate and one of the most important natural disasters in southern Africa. In fact, it is becoming increasingly unusual for drought not to occur somewhere in southern Africa each year. The dependence of most southern African economies on rainfed agriculture emphasizes the importance of drought early warning products for short- and long-term decision making in various sectors of the national economies of the region. Following the 1991–92 drought, which ravaged more than 80% of southern Africa, many in southern Africa now realize the value of meteorological information in weather-sensitive decisions. Requests for advanced drought information have come to the drought monitoring center from a wide spectrum of users, including farmer groups, donor agencies, finance houses, politicians, economists, the media, and hydrologists. Information has been requested for precipitation predictions for periods ranging from ten days, to seasons (in the case of farmer organizations), to as long as four to five years (in the case of agricultural financing institutions). The creation of a regional drought monitoring center (DMC) in Harare, Zimbabwe, in 1989 (the DMC opened in 1991) was long overdue, according to some farmers' representatives, nongovernmental organizations, universities, government departments, and other regional and international organizations. Many of these organizations have called for the enhancement of the DMC, including increases in manpower, more computer hardware and software, and applications-oriented research to enable the center to develop into a regional center of excellence in applied meteorology and to act as a regional climatological data archive and backup facility.

Will all this awareness and support that the DMC has enjoyed live through nondrought years? Laing (1994) cautions about the possibility of apathy after a few years of good rains. Wilhite (1992) has also given similar warnings; these warnings need to be taken seriously by all those who have supported drought monitoring institutions in the past.

Sustainability of Drought Monitoring Schemes

The return of good rains for a few years in succession usually sees rapid widespread economic recovery in most southern African countries. Schemes previously designed to provide drought information and relief logistics are allowed to collapse. When drought recurs, crisis rather than proactive management approaches are formulated, often at phenomenal cost. How do we ensure that drought monitoring schemes survive periods of good rains? Some have suggested that the term *drought monitoring* in itself presents problems. Indeed, questions have been raised: "If there is no drought, what do we monitor? What is the difference between a drought monitoring scheme and a rainfall monitoring scheme?" Wilhite (1992, 1993) has also suggested that terms such as *drought watch* suggest an on/off situation. For southern Africa, development goals often contain conflicts and dilemmas. Often, individual governments are faced with urgent problems, such as reducing poverty, fighting disease, reducing unemployment, and so forth. Once drought appears to have abated, most governments in developing countries find it rational to divert financial resources to other sectors of the economy that promise to generate wealth and employment. Governments in most developing countries have always had a tendency to view scientific programs as nondevelopmental activities. That line of thinking must change. Another problem arises from the word *drought*. Drought monitoring is too specific: a climate monitoring center is probably more sustainable than a drought monitoring center, since climate encompasses a wider range of weather phenomena, drought included.

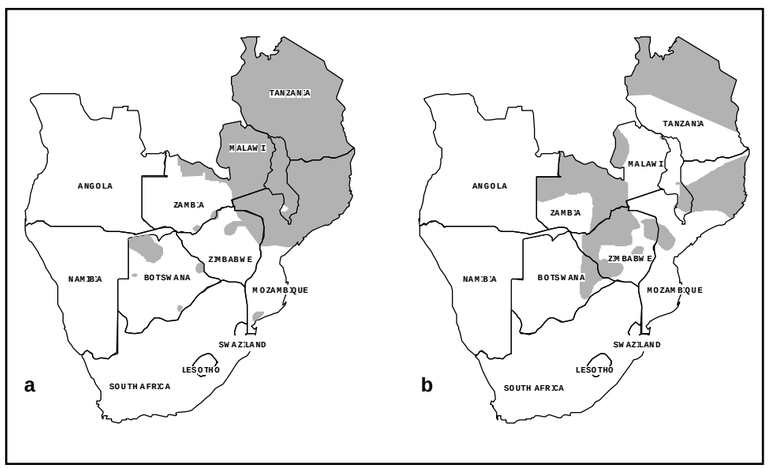

Figure 1. Drought-affected areas of southern Africa for (a) 20 December 1993 and (b) 28 February 1994.

Because of poverty, general economic decline, and conflicting development objectives, nationally based drought monitoring schemes are unlikely to survive during good rainfall years in developing countries. A regionally based climate monitoring center financed from contributions by member countries has a chance to enjoy economies of scale and may be sustainable. According to a report by the National Civil Protection Coordination Committee of Zimbabwe, about Z$2 billion was spent on a drought relief program as a result of the 1991–92 drought in Zimbabwe alone. If prices were to stay at current levels, that amount of money would sustain a drought center such as the one in Harare for about 500,000 years. Globally, the impact of the 1982–83 drought is estimated to have been about US$13 billion. The cost of setting up and maintaining a drought monitoring facility is small compared to the impacts of drought. The benefits are particularly substantial for tropical countries, where most droughts can be predicted with reasonable skill.

1993–94 Rainy Season

As southern Africa continued to recover from the 1991–92 drought, the whole region expected the good rains experienced during 1992–93 to continue into 1993–94. As early as October 1993, the DMC issued a forecast for the season based mainly on the observed and expected trend in the El Niño/Southern Oscillation, the anomalies in some of the region's main synoptic features, and the region's expected rainfall cycles. Normal rainfall was predicted across most of the region for the period October to December; some deficits were forecast for the later half of the season (January to April). Figure 1 shows actual drought-affected areas for this time period over southern Africa. The rainy season over southern Africa spans the months October to April; as of 20 December 1993, areas north of about 18°S latitude had not received any meaningful rainfall, with most areas recording well below 50% of the normal expected rainfall. Before the end of December, Tanzania had declared the drought a national disaster. The short rains in Tanzania failed completely. By contrast, some of the areas that climatologically do not enjoy excellent rains—such as Namibia, Botswana, southern Zimbabwe, southern Zambia, and central Mozambique—recorded excess rainfall throughout the first half of the season. By the end of December, some areas had received rainfall equivalent to their normal seasonal total. Dams filled up, large acres of land were put under crops, and the possibility of drought seemed remote.

The period from about January to February saw a gradual shift in the rainfall pattern. The deficits that were widespread north of the 18th parallel were cleared in a short time as heavy rains battered those areas. In its updated forecasts, the DMC predicted further improvement to the north and diminished rainfall to the south. From about mid-February, a dry spell that extended into the entire month of March hit most of southern Zambia, southern Malawi, eastern Botswana, most parts of Zimbabwe, and Mozambique. Crops planted

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late were written off as a loss, according to press reports. Figure 1 shows the areal extent of drought during the 1993–94 season (20 December–28 February). Drought is here defined as rainfall below 75% of normal (South Africa and Angola were not included in the analysis). Unlike the situation during the 1991–92 drought, when drought warnings were either not received or not taken seriously, warnings about potential rainfall shortages during the 1993–94 season were disseminated to most key users and the media. During 1991–92, decision makers complained that they were not warned; this time, the DMC provided timely information to everyone.

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