

The Dimensions of Drought in Botswana

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Botswana is a drought prone country, as is widely known. The basic reasons for this are its semi-arid environment with its relatively low and variable supply of resources to society, its high and steadily growing demand for such resources as a result of rising activity levels in the rural areas, and certain changes or the lack thereof, in land use systems and environmental resource management. These general observations follow from an interdisciplinary view of an environmental hazard such as a shortage of rainfall as it operates within an ecological complex. Drought is more than just an unavoidable instance of climatic mishap occurring frequently in semi-arid regions; low rainfall becomes a drought when it leads to a shortage of some food for which society has a demand (cf. Sandford, 1977). And in the context of Botswana's socio-economic structure, the two most crucial rainfall dependent commodities are cereals for its human, and grazing for its cattle population. Looking at grazing supply as it varies with rainfall, Eastern Botswana faces the likelihood of a severe drought (possible downward adjustment in stock numbers of up to 25% or so) once every five year, according to Sandford (1977, 1979). The Botswana Society rightly launched the idea of a symposium on drought, and it was held in June 1978. Its objectives were to analyse the nature of drought, to review ways in which societies have responded to it and to evaluate steps which Botswana might consider to prepare for drought. A discussion of the Symposium's proceedings in Pula, is warranted - even though it is late.

Over 30 papers and speeches have been presented and discussed, mostly under 3 major captions: Physical Aspects, Social Aspects Combating and Ameliorating Drought.

Within a global trend toward greater rainfall variability, Southern Africa faces a likelihood of more below average rainfall years in the '80s. Given the highest ever pressure on Botswana's environment, extended droughts might occur. This is the gloomy prediction of the section on physical aspects (Cooke, Tyson). Even though the number of rainfall independent water points can still be increased, it would not counter the threat of drought, as additional boreholes are of

little use without good grazing to accompany them (Wilson). Increasing numbers of people and stock will - given present management and technology - increase environmental pressure and replacement levels of renewable resources will become lower than use levels; environmental degradation and reduced carrying capacities will then result (Grove). Various other papers put the Botswana conditions in the wider context of the (semi) arid part of Africa. This section is rounded off by an outline of a monitoring system of rainfall, desertification etc. based on satellite imagery and aerial photography (Verstapper).

The next section reviews social and cultural adaptations to conditions in semi-arid African environments focussing of course on Botswana (hunter-gatherers, pastoralists, agriculturalists). Such adaptations range from fission of groups, to outright migration of communities, including nomadic livestock holding, tributary payments of harvest shares, marriage patterns etc. Two contributions in this section stand out: the lucid analysis by Campbell of the 1960s drought in Botswana, and Devitt's brief but relevant linking of the impact of droughts to socio-economic stratification. Campbell concludes that it was "not just the drought which killed the cattle, but also prior overgrazing" (p. 108). Furthermore, foot-and-mouth diseases risks become larger in a drought. Another one of his points, namely that it is likely to be the smaller stock-holders who are most affected by the drought, is elaborated upon by Devitt who discusses the concepts of 'critical herd size' and 'concertina economy'. The former concept expresses that herds below a certain size are more drought-susceptible and possibly fundamentally unsustainable. The latter concept implies that in a drought the environmental resource niche occupied by a social stratum, will be invaded by people from the stratum one notch up, etcetera, ultimately increasing competition for resources at the very base of the stratification, even to the degree of forcing some of the poorest out of the community. Drought impacts are not neutral from a social justice point of view, and drought contingency programmes must take this into account.

The final 100 pages before the conclusions discuss information systems and networks for dealing with drought. "Modern" science and technology is presented side by side with "ethno-scientific" information (Berry and Ford, p. 166). The role of the Institutional Food Programme and nutritional surveillance as a monitoring and planning device are described. Various papers discuss impacts on agricultural activity and output levels (Jones on arable farming; Ward on Livestock). After papers on cattle production research and TGLP, Alidi rounds off this section by pointing at some approaches to

avoid long-term ecological damage. Education and training come first, as ways of changing basic but unsustainable attitudes on the desirability of large herds, and of changing farming practices, because "the fact remains that overgrazing and over-exploitation of our natural resources, not rainfall deficiency, are the main causes of drought" (p. 268).

The Conclusion presents two pages, one by Molosi on Botswana's future strategy, and one by Sandford, summing up the proceedings. Molosi argues for flexible, action-oriented strategy aimed at alleviation of problems. This Symposium had in his view provided much of the data on which to base a national drought relief plan.

Reading the proceedings more than 3 years after the Symposium, with one short duration drought in-between, one is struck by the lack of actual information on impacts of drought on various socio-economic groups and their activities. Apart from various proposed assumptions with regard to such impacts, the Symposium proceeded by discussing physical and macro-economic dimensions mainly. The latter it has done admirably, and the former may simply have been impossible at the time. The Symposium came in time to gear attention to drought, just one year before a short duration drought hit the Botswana crop farmers in 1978/79. Government action was needed to "alleviate" the problems to people (and to a limited degree: to cattle). Both the impacts of drought on various economic data, and the alleviative power of government actions have been intensively researched since. The Botswana Government should now be in a much better position (informationwise) to formulate a drought relief plan, and to direct it specifically at groups of people who need assistance most. Just in time, we can but hope, before the predicted drought period in the '80s commences. It remains a pity, that Government action still has to take the form of curative "relief" plans rather than preventive action. The latter would require the will to enforce and the power to effectuate stock control policies, and both appear to be absent. But this holds true for quite a large number of other African countries.

REFERENCES

- Sandford, S. "Dealing with Drought and Livestock in Botswana" London 1977.
- Sandford, S. "Toward a Definition of Drought" Proceedings of Symposium of Drought, Gaborone 1979.

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