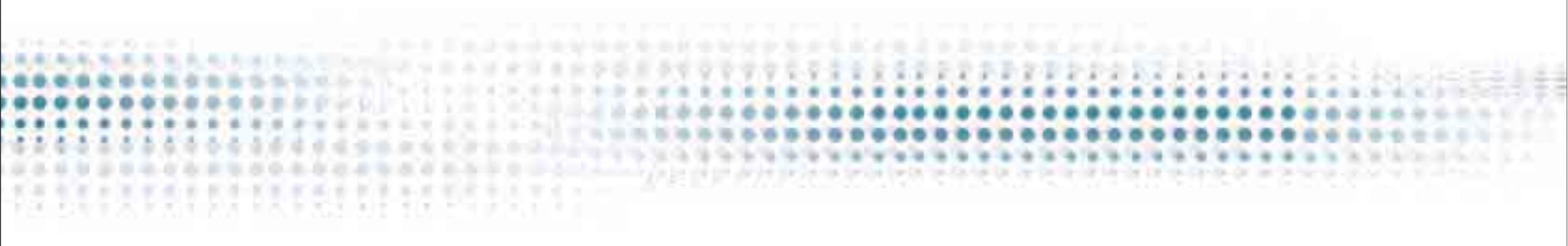


# INTEGRATED DROUGHT MANAGEMENT

LESSONS FOR SUB-SAHARAN AFRICA



\*"if it be not now, yet it will come: the readiness is all"



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## FOREWORD

I strongly believe it is essential to create greater awareness about drought and growing water scarcity and about the massive and widespread impact of this phenomenon.



- ● Drought is considered by many to be the most complex but least understood of all natural hazards, affecting more people than any other hazard. Drought has become almost synonymous with Africa and therefore the strong international concerns over drought and the African continent, expressed in international programmes like the International Decade for Natural Disaster Reduction (1990-2000), the United Nations Convention to Combat Desertification, 1996 and UNESCO's International Hydrological Programme (IHP).

With this concern in mind, a unique gathering took place in Pretoria, South Africa in September 1999 under the theme "Integrated Drought Management - Lessons for sub-Saharan Africa". The uniqueness of the Conference lies in the highly multi-disciplinary nature of the programme and the delegates, mainly from the African continent, including politicians, weather forecasters, educators, agriculturalists and social scientists.

**"If it be not now, yet will come: the readiness is all"**

*Hamlet: Shakespeare*

In opening the conference, his Excellency, Ronnie Kasrils, the South African Minister of Water Affairs and Forestry, warned that time is fast running out for

devising a policy of sustainable human development. The world is facing "full-scale emergencies" on several fronts, including the serious degradation of soil and water resources, which is endemic on the African continent. Mr. Kasrils based his warning on a recently released UNEP report, GEO-2000. He stressed a crucial observation of the report that, overarching many of the complex causes of this dramatic degradation of our environment, lies the gap between rich and poor countries.

UNESCO, with its broad focus on sciences and education for development, strongly supported the conception and also the outcomes of this conference. We sense that integrated drought management is a development vision which can draw role-players together across disciplines, nations and even continents and start closing development gaps. A centre, as recommended by the conference, somewhere in the region, which can facilitate this and create integration momentum, is something tangible and the process of its realisation can be promoted with this brochure.

**Andras Szöllösi-Nagy**

*Director, Division of Water Sciences, UNESCO*



## INTRODUCTION

Apart from climate, human activity is one of the major factors responsible for environmental degradation and desertification, which has already damaged nearly a third of the world's arable land.



- ● Drought is a chronic problem in sub-Saharan Africa. Apart from climate, human activity is one of the major factors responsible for environmental degradation and desertification, which has already damaged nearly a third of the world's arable land. The most seriously affected are the dryland areas of Africa south of the Sahara and, according to expert opinion, desertification still continues to accelerate.

Until recently, drought and desertification were perceived mainly as technical problems. Their solutions were seen as largely requiring physical measures to arrest and reverse the process of degradation. Policy responses to drought have concentrated on food needs and more recently, food security. Non-food assistance, e.g. water and health, have always had a crisis focus and often failed to yield significant benefits for the target population.

Throughout the world there is now a growing recognition that drought and desertification are multi-faceted problems requiring a developmental rather than a crisis management approach. The challenge lies in moving towards the integration of a variety of actions, which can mitigate the crisis, and

create opportunities for improving the quality of life, maintaining ecosystems and generating wealth and sustainable development.

Some of the lessons learned in this regard for sub-Saharan Africa have been captured in this brochure to help create national, regional and international momentum towards integrated drought management.



## ● ● Why sub-Saharan Africa

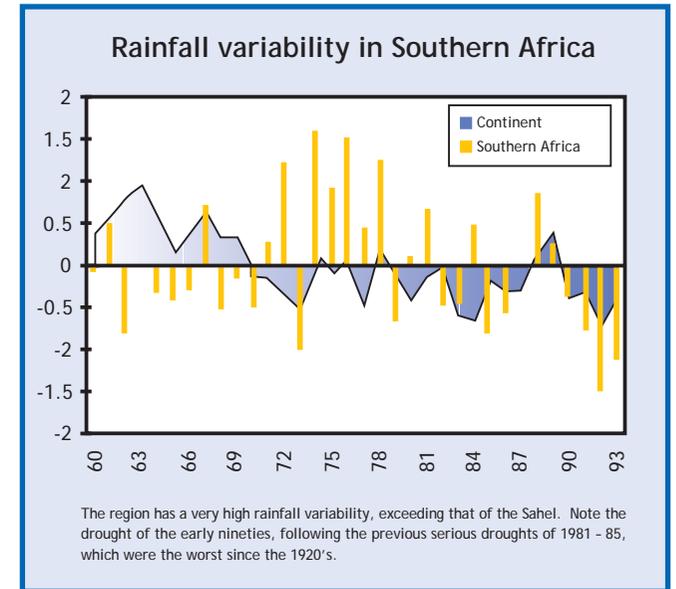
The region clearly makes up the core of the global drought and desertification problem. Despite being mostly arid to semi-arid, the region supports large numbers of people, two thirds of whom are in situations in which endemic water scarcity can be expected.

Severe droughts in the 1980's and 1990's significantly reduced food production and disrupted national economies to such an extent that some 20 countries had no alternative but to appeal for international support.

Agriculture has remained the most important sector in the African economy, with 70 percent of agricultural output coming from small farmers. The traditional farmers relying on rain for their animals and crops in such a fragile environment, are ecologically, geographically and economically marginalized and remain poor. In fact, there is a spiralling impact, leading to the advance of desertification, in which one disaster increases the vulnerability of communities to the next disaster.

Poor health conditions and mortality rates related to

lack of access to clean drinking water and sanitation have severely diminished welfare and productivity. Population pressure on marginal lands will increase



the already high vulnerability to drought. This situation must be viewed together with the global climate change outlook in which the balance of opinion is that the continent will experience a decreasing water reliability in coming decades.

All this points to a massive developmental challenge for African leaders, which will clearly require a regional dimension and co-ordinated international support.

## Vulnerability



## + Hazard



## = Disaster



## ●● From reaction to preparedness

While we cannot manage climate variability, appropriate intervention of man to reduce his vulnerability to drought can compensate nature's erratic behaviour.

In the words of Dr. Don Wilhite, Director of the National Drought Information Center in the USA, we need to become pro-active.

*"Drought must be seen not only as a natural hazard, but the human side, the vulnerability of people, should also be recognised. Drought planning is to bring the physical and the social aspects closer to each other."*

Wilhite, in analysing the sub-Saharan situation, stresses the crucial importance of drought preparedness as an integral part of planning for sustainable development. Mitigating the effects of drought requires all components of the cycle of disaster management (page 8) rather than just the crisis management focus still prevalent throughout the world.

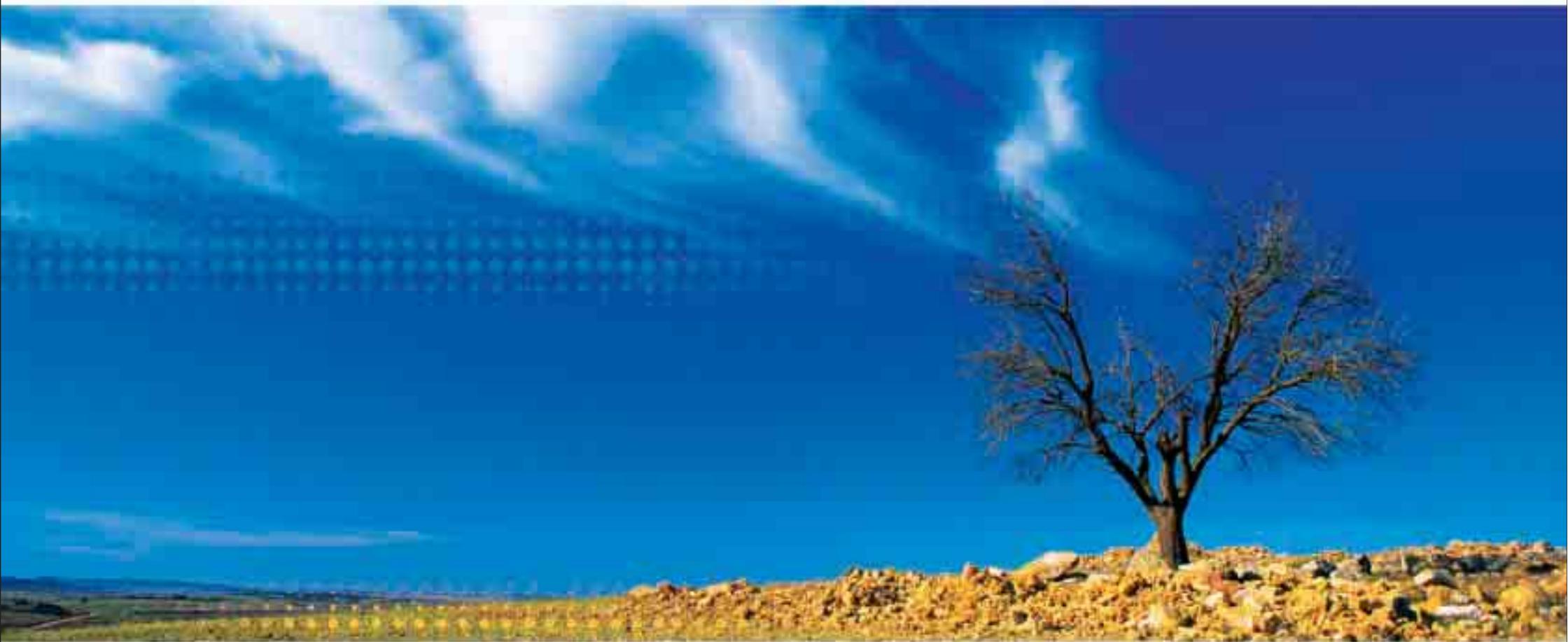
*"Drought planning is the action taken by individual citizens, industry and the government in advance to mitigate impacts and conflicts arising from droughts".*

Drought preparedness holds the potential to bring together vital elements of management, e.g.:

- Co-ordination of state, local, and tribal government actions;
- Co-ordination with various agencies;
- Understanding of vulnerable sectors;
- Information flow within and between governments;
- Co-ordination of requests for assistance;
- Efficiency of allocation of natural, financial and human resources;

Preparedness can also help to identify

- Vulnerable sectors and populations;
- Stakeholders who should be involved;
- Actions to reduce vulnerability;
- Gaps in data and information;
- Research and institutional needs;
- Educational needs.



## LESSONS FOR SUB-SAHARAN AFRICA

“Drought planning in the water sector continues to be neglected and without more emphasis on planning in non-drought years, crisis management rather than crisis prevention will prevail. Prevention implies a more developmental approach to emergency assistance to protect livelihoods before lives are threatened.”

Calow et. al (1999)

## ● ● Mainstreaming of drought

Past reactive responses have done little to reduce the risk associated with drought. The lesson, above all, is that drought in all its manifestations requires a much more planned and developmental, rather than crisis management approach.

## ● ● New risk management focus

Reduced government intervention during drought crises will mean higher risks carried by the vulnerable communities. The major policy implication is a sustained government effort to reduce risk and vulnerability through a variety of measures at local, regional and national level, including:

- A national drought policy as focus for integration and resourcing;
- A horizontal integration over all sectors impacted by drought, inter alia natural resource management, health and population development and rural and urban development;
- A vertical integration linking policy and planning down to grass-roots communal problem solving;

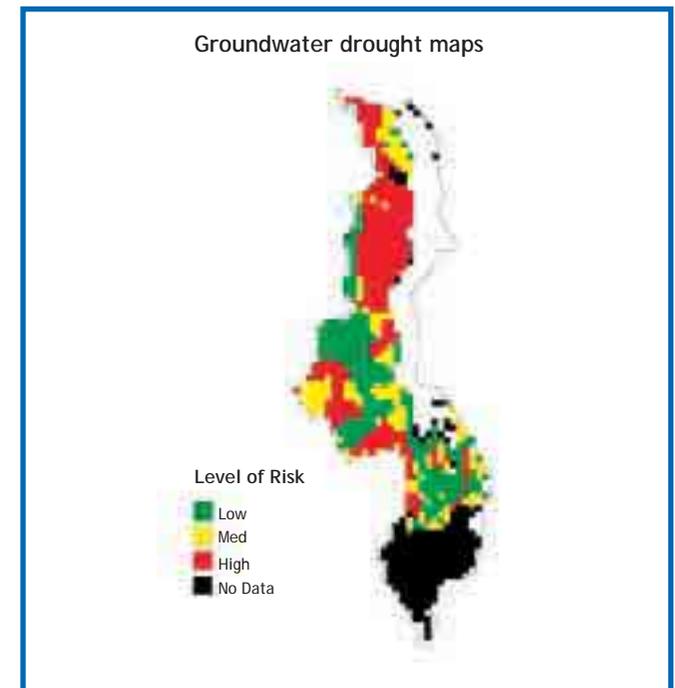
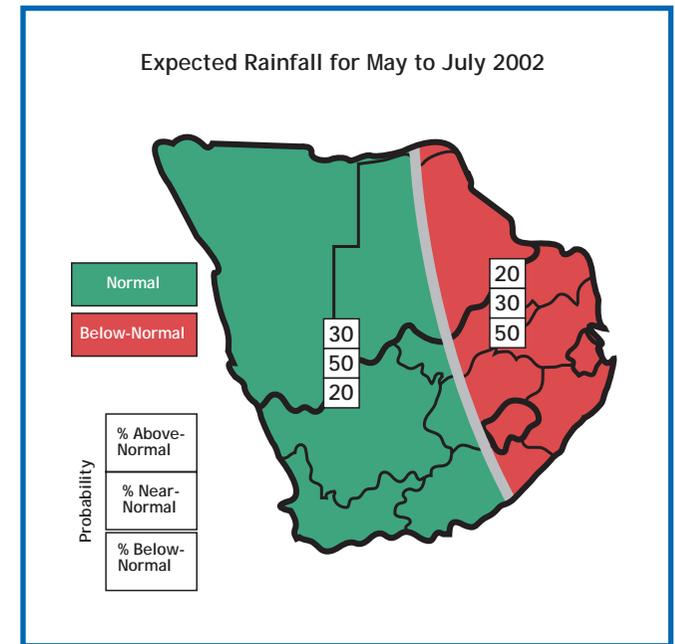
- Government-private sector partnerships to increase resources and opportunities;
- Government attention to traditional impediments to drought management in rural communities and to sustainable living in general, e.g. power relationships and land tenure issues;
- People-centred policies that bring new hope to communities;
- Involvement of the beneficiaries in the policy-making;
- Focus on the protection of livelihoods instead of the past compartmentalisation approach;
- A major focus on community education and capacity building.

## ●● Drought planning

Drought planning should become the key instrument to achieve the mainstreaming of drought. It should focus on both the improvement of governmental response to drought emergencies and on greater attention to reducing risks associated with drought occurrences. Because of its importance, the process of drought planning has been formalised for wider use in Africa by the United Nations Environment Program (UNEP) and the World Meteorological Organisation (WMO).

## ●● Closing the information gap

The sciences of observing and monitoring conditions on the ground through remote sensing as well as of weather forecasting have made significant, if not major, advances. There is now a crucial need for integration of the macro level and the micro level, i.e. between the global and regional observations and forecasts on the one hand and the "at risk" community on the other. This must be achieved through regular interaction with users, the tailoring of information products to user needs and helping users decide what actions they can or should take.





## ●● Traditional knowledge

One of the most important principles of the Convention to Combat Desertification has been the recognition that local people have a lot of relevant traditional knowledge about their environment and have indigenous coping mechanisms and methods which are well adapted to local conditions. With the fresh focus on mitigating the

Typical examples are the traditional African practices for the conservation of water and soil, for example:

- Construction of ridges (bunds, "dignettes" or "dignes") with stones or earth;
- Construction of "zai" or water pockets;
- Establishment of special zones for protection ("mise en d'effens") of degraded land.

This traditional knowledge is largely neglected and external solutions are imposed when conventional development projects are designed.

vulnerability of rural people it has become crucial to protect, integrate, enhance and validate traditional and



local knowledge and practices. What is required is a thorough understanding of the successes and failures of current practices, of the approaches to risk prevention, reduction or shifting of those faced with drought. Such knowledge is needed at grassroots as well as national and international level so that policies can be properly translated into actions that are rich in local content, planned in conjunction with local people.

### ●● Empowering people

Education can play a vital role in informing people about risks and ways of achieving increased self-reliance through improved risk management. Environmental education should also be given more prominence in formal education. Greater government commitment is required in this field which is still largely spearheaded by donor agencies.

### ●● Fresh focus for science

Science is crucial to drought management, but it needs to move from a one-dimensional focus on weather and climate forecasting to a host of other factors heightening vulnerability to drought impacts -

health, food access, population and resource management issues and the appropriate packaging and communicating of scientific information.

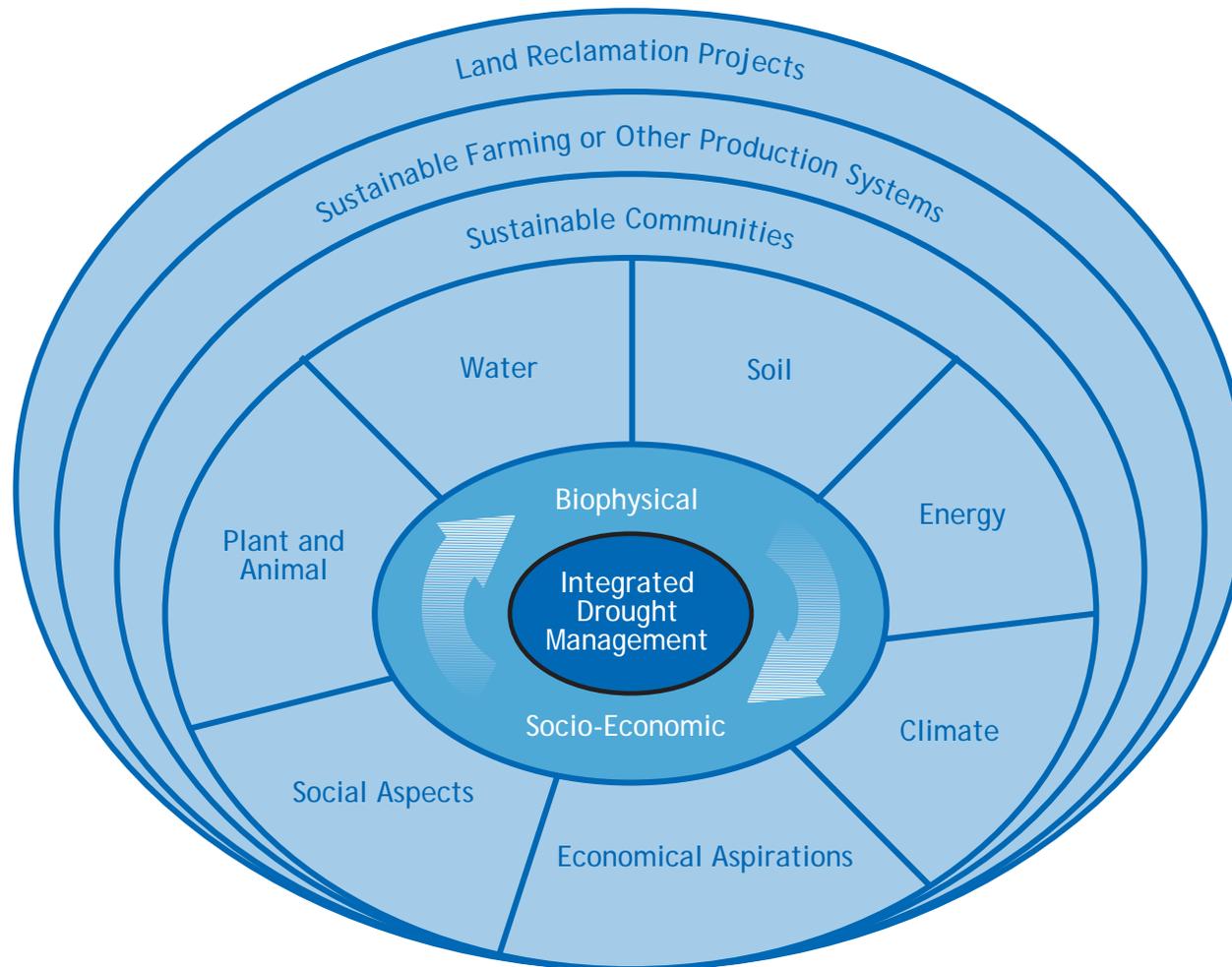
### ●● Regional approach

Given the nature of drought, a regional co-operative management and research and development approach is required to deal with it effectively, and within the financial and human resources of the region. The creation, 1996, of a distinct sector for water within the SADC structure, and in 1999 the formulation of a "Regional Drought Management Strategy for SADC" are important first steps in this direction.

### ●● International co-operation

The international community needs to confront the challenge, expressed in the UN GEO-2000 report, to address the massive gap between rich and poor countries and the relationship of this gap to the global environmental crisis. The new approaches to drought management represent tremendous opportunities for long-term co-operation rather than short-term aid responses.

# The What and the Who



A Framework of multi-disciplinary and integrated plans for Drought Management  
*Seely (1999)*

## Who can make a difference

Integrated drought management will only have a chance of success in the sub-Saharan region if a variety of role-players start playing their crucial parts:

*National governments:*  
 to initiate, co-ordinate and support the process

*The "at risk" communities:*  
 reached with more participative management approaches

*The private sector:*  
 to add capacity, create initiative and share risk

*The general public:*  
 to start influencing policy decisions based on greater public awareness on environmental issues

*The region:*  
 to achieve co-operative management of the regional manifestations of drought and for sharing limited financial, human and institutional resources.

*The international community:*  
 to focus on long-term co-operation in response to the global environmental crisis.



## THE WAY FORWARD: AN INTERNATIONAL DROUGHT CENTRE

As a tangible way to move forward with integrated drought management, the conference strongly moved for the establishment of an International Drought Centre for the region.

The overall aim for such a facility would be to help minimise the impact of damaging drought events in the region through sound risk management and in this way reduce dependency on relief assistance in times of severe drought.

- Such a facility should build on existing initiatives in the region and should serve as integrator rather than as specialist institution;
- With the power of the Internet, a regional centre could play a tremendously integrative role, once an appropriate network of participating and supporting institutions had been established;
- The centre should have a strong policy focus and serve as an information clearing house for the whole region;

- The centre should forge strong links with well-established international institutions such as drought management centres in the United States and Australia. As such it should regularly host international expertise.

- The initiative should be taken by a consortium of national governments of drought-prone countries or existing regional organisations such as SADC.
- Part of the international financial resources currently used for drought relief assistance should be channelled into this initiative;
- The International Hydrological Programme of UNESCO is well placed to lead the drive towards this important regional facility.

## A MAJOR INTERNATIONAL CO-OPERATION OPPORTUNITY

The many initiatives towards more planned drought management throughout sub-Saharan Africa, both nationally and regionally, since the severe droughts of early nineties

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New experiences from developed countries towards systematic and integrated implementation of such approaches

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an important opportunity for rapid progress in addressing the mainstreaming of drought in countries, with regional and international co-operation.



By means of this brochure UNESCO invites governments, policy-makers, development experts, scientists and other interested parties to actively advance the concept of an International Drought Centre for sub-Saharan

Africa and help make it a reality

#### INTERNATIONAL HYDROLOGICAL PROGRAMME

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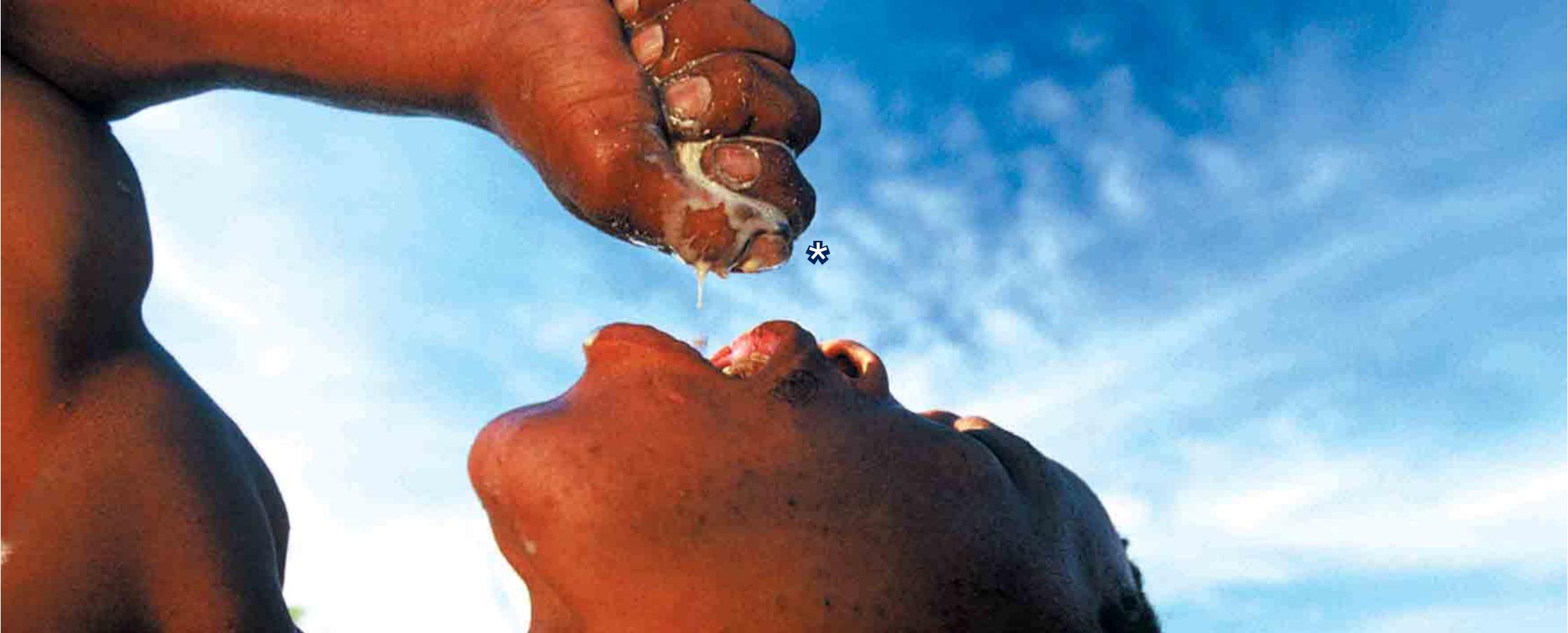
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\*"for waters shall burst forth in the wilderness and streams in the desert"  
Isaiah 35:6

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