DROUGHT RISK MANAGEMENT:

PRACTITIONER'S PERSPECTIVES FROM AFRICA AND ASIA

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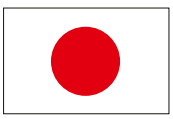

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Acronyms

AADP	Africa-Asia Drought Risk Management Peer Assistance Network
ADAF	Africa Drought Adaptation Forum
ADDN	African Drought Risk and Development Network
DDC	Drylands Development Centre
DRM	Drought Risk Management
EWS	Early Warning System
FAO	Food and Agriculture Organisation
GIS	Geographic Information System
HFA	Hyogo Framework for Action
IRIN	Integrated Regional Information Networks
IWRM	Integrated Water Resources Management
NGO	Non-Governmental Organization
SSC	South-South Cooperation
TSN	Trans-Nzoia Socio-Economic Network
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction

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Acknowledgements

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The stocktaking exercise and AADP more broadly benefited from the enthusiastic debate and engagement of the participants at the Africa-Asia Drought Adaptation Forum, held on 14-15 June 2011 in Bangkok. This group was engaged in the participatory interpretation of the survey data and presented important issues.

Executive Summary

The Africa–Asia Drought Risk Management Peer Assistance Project seeks to facilitate the sharing of knowledge and technical cooperation among drought-prone countries in Africa and Asia and thus to promote best practices in drought risk management (DRM) for development in the two regions. In order to establish a baseline to guide this activity, the United Nations Development Programme Drylands Development Centre (UNDP DDC) undertook a stocktaking exercise between March and June 2011 on drought impacts, causes, trends and solutions in Africa and Asia.

This report, based upon the findings of the stocktaking exercise, goes beyond presenting a sense of the similarities and differences among drought experiences in Africa and Asia, by painting a more detailed picture. This was made possible through consultations with key individuals in both continents, an online survey of some 400 people working in drought-related fields (collectively offering about 3,000 years of experience), the First Africa-Asia Drought Adaptation Forum and literature review.

Drought Impacts and Causes

The stocktaking exercise first considered and compared the impacts of drought on Africa and Asia, why there appears to be an increasing impact of droughts (the root causes) and how this is likely to change over the next 10 to 20 years.

According to the practitioners surveyed, Africa and Asia share many common experiences involving drought impacts, but the impact of drought in Africa is moderately more severe than in Asia. A decline in crop yields, a rise in food insecurity and a depletion of water for human use (e.g., for drinking, cooking and cleaning) most severely affect both regions. However, divergence of drought impacts between the regions is pronounced with respect to famine and implications on national economies, with Africa significantly more adversely affected.

Both regions overwhelmingly consider environmental degradation, poor water resource management and poor governance to be either a very important or the most important contributing cause of drought impacts. In Africa, environmental degradation is the greatest cause and, in Asia, it is only marginally less important than poor water resource management. As an aggregate factor for both regions, environmental degradation is the most important root cause of drought impact. An additional observation is that governments regard climate change and population growth pressures more seriously than other respondents.

The current clear and overwhelming consensus is that drought impacts and their causes will worsen over the coming 10 to 20 years. The vast majority of respondents who hold this view cite climate change as a major driver of future risk. A lack of political will is stymying an adequate response even to existing risks. So the additional threat to already stressed and over-burdened contexts of drought appears to intensify the feeling that DRM is ill-equipped to face future risks, as these are greater than existing ones. The belief that drought is inevitable

fuels a tendency to focus on devising better responses to drought rather than on taking preventive approaches such as improved land and water management. Furthermore, because government respondents consider climate change to be the top cause of drought impact, there is a tendency to shirk national ownership of drought mitigation measures in favour of demanding new and additional international adaptation finance.

There is a very significant lack of political will to engage in holistic DRM in Africa and Asia, even though drought is perceived by respondents to constitute a high (in Africa) or quite high (in Asia) risk to national economies.

Among the disincentives for DRM are its inherent complexity; its gradual and elusive effects; and its non-structural nature, which together can create a political vacuum where suitable interventions lose their lustre in comparison with other political priorities. But these issues mask, or generate, persistent and even more challenging deterrents. Calls for action on drought are irrelevant if they are not in step with political needs and desires. The classic example of mere political expediency is the provision of food aid for drought relief just in order to boost government popularity.

In both Africa and Asia, insufficient local capacity is cited as being a bigger barrier than insufficient national technical capacity. In tandem with this, poor local awareness is considered a relatively important barrier in both regions. In this regard, the undermining of local knowledge and practice on DRM has a doubly negative effect: it partially causes drought impacts and impedes action to reduce risk.

Drought Risk Management

The stocktaking exercise also highlighted how drought impacts and their causes are being addressed in the regions and what effect this is having.

The lack of integration of the various approaches to DRM, such as through sustainable land management, water resource management, food security and so on, is highlighted as a weakness, particularly at the national level, which is separated along sectoral lines. However, the DRM approach at the local level is generally considered more integrated (and as such is thus also frequently regarded as good practice). Local approaches tend to better emphasize vulnerability factors in relation to livelihood strategies and efforts to manage natural resources. Furthermore, there is wide agreement that greater traction for DRM occurs at lower levels and that efforts must go hand-in-hand with opportunities presented through democratization and decentralization reforms. There is also recognition of the enduring gap between top and bottom levels: the meso-level is a crucial link in the chain, with 'boundary organizations' (e.g., small- or medium-sized river basin management committees) playing a pivotal role as a basis for 'smart partnership' (i.e., cooperation among the partners where they share clear strategic roles, responsibilities and contributions toward the management of commonly experienced issues).

While there are various approaches to DRM, drought in Africa and Asia is dealt with predominantly as a food security and water resource issue and in relation to climate change and variability. Although climate change can be used as a scapegoat to mask other development challenges, it is largely acknowledged to be an opportunity to improve DRM. This is because it illuminates climate variability and associated climatic disasters, including drought, while broadening the basis for resource mobilization. Consequently, work related to adaptation to climate change is ramped up while longer-established, but related disciplines, such as climate-related disaster risk reduction, are bypassed (or re-branded). It is interesting to note that drought in Africa and Asia is already more commonly dealt with in relation to climate change and variability than as a disaster issue. Still, the main approaches seem to be a response to the main impacts of drought (e.g., decreased crop yields, increased food insecurity and depletion in water for human use) rather than an attempt to address the main causes of drought itself.

To indicate how effectively the combination of deployed DRM approaches has reduced risk of drought and especially the causes of its impacts, in Africa and Asia, the stocktaking exercise considered specific key areas where progress is required: policy frameworks and plans; drought risk assessment and the dissemination of early warning; and awareness and knowledge.

With respect to policy frameworks and plans, results indicate largely ad hoc, non-institutionalized approaches to DRM in both regions: Attention to DRM evaporates soon after the first rain drops hit the parched ground. A small, but not negligible, proportion of respondents, however, believe that trends in drought impact will improve. Such opinions are based on recent or new policy shifts toward DRM as well as observation of local good practice.

Possibly indicating a positive trend, the greatest progress regarding policy frameworks and plans relates in Africa to the encouragement of public and non-governmental organization (NGO) participation and in Asia to improved incorporation within national frameworks of the local aspects of drought.

With respect to drought risk assessment and the dissemination of early warning, the strong belief that well-established and highly regarded systems and processes are either non-existent or negligible is most apparent.

A representative statement of the stocktaking is that more work is needed to bring short-term weather forecasting and longer-term projections of climate change down to a local level, where meaningful management decisions can be taken. This needs to happen with a simultaneous recognition that changing social, economic and environmental conditions are undermining local knowledge and awareness about what to do and when to do it. This is especially the case in contexts where local people are more heavily dependent on word-of-mouth to share information, such as in remote dryland communities.

Additionally, the stocktaking highlighted that, if monitoring is not expanded to include all important indicators of pending drought risk, including non-climatic ones, or if it is not better linked with decision-making processes, then it should be no surprise if early warning does not result in timely action.

With respect to awareness and knowledge, awareness-raising about effective approaches, especially those highlighting cross-sectoral relationships, is commonly regarded as an essential first step in DRM. However, most survey responses paint a different picture of what is actually being practiced: Most people in Africa and Asia feel that drought awareness and knowledge are rarely shared. On the other hand, the emergence of many cases where good practice, new issues and other important information are widely disseminated through established institutions and networks is challenging this pattern.

Despite the general prevalence of significant drought impacts, trends toward greater impacts and poor progress toward comprehensive DRM in key areas, there are reports of good practice.

The most successful DRM practice is the cultivation of a community basis for action. With this is mind, a number of key concepts raised were:

- A need for an integrated development approach centred around sustainable land/ water resource management practices (i.e., not a segregated 'drought' project based upon a distinct stand-alone perspective, specialism, or sector)
- The importance of indigenous knowledge (not only as a specific area of importance, but as a thread running throughout all community-based considerations)
- The importance of numerous methods of local community awareness-raising on drought-related issues
- The importance of a community-led participatory approach and use of community organizations (e.g., farmers' groups and water user associations), especially in relation to sustainable local natural resource management
- A need for a stronger focus on diversification of livelihoods, including crop and livestock varieties and other income-generating activities

Opportunities for Africa-Asia Drought Risk Management Peer Assistance

This stocktaking exercise concludes by pulling the issues together in light of the aspiration of the interregional peer assistance network and particularly in light of its desire to be demand-driven. Opportunities exist where replicable good practice can fill gaps in key areas. The specific topics that emerged as opportunities for the Africa-Asia Drought Risk Management Peer Assistance Network (AADP) to contribute are:

- **Raising awareness about the value of indigenous knowledge:** The stocktaking exercise strongly emphasized that there must be a firm focus on identifying, analysing and documenting indigenous knowledge and techniques in particular locations to help

raise awareness about their contributions to DRM. This will likely hinge upon sustainable natural resource management and livelihood resilience. Therefore, AADP should further extend its reach to community-based practitioners to identify and extract the indigenous knowledge and locally proven practices more effectively and efficiently. At the same time, high-level decision-makers need to be more aware of the potential of community-based development processes and approaches in DRM, just as they need greater capacity to tap that potential.

- **Promoting a multifaceted approach to deal with drivers of drought risk:** To mitigate the root causes and impacts of drought, the stocktaking exercise showed the need to strengthen links among environmental management, water resource management, governance and adaptation to climate change. Applying a combination of these approaches to a place in particular danger of drought would be a good entry point for leveraging positive change.

- **Expanding awareness about the economic impact of drought and whether this influences political decision-making:** AADP can promote the inclusion of economic considerations in DRM planning and implementation while also exploring the juxtaposition between economic arguments for investment in DRM, on the one hand and continued widespread political apathy, on the other.

- **Investigating the integration into early warning systems of non-climatic indicators of drought:** AADP can consider how non-climatic indicators can be integrated with existing early warning systems to render them more pragmatic.

- **Keeping pace with the emergence of new issues and trends in the area of drought risk:** Examples include cases of urban drought, in which perceptions and issues are very different from those involving rural drought and the consideration of new or worsening drought hotspots, such as monsoon and delta regions of Asia.

The stocktaking exercise was a rare opportunity to hear from a variety of very experienced practitioners working in drought-related fields across Africa, Asia and elsewhere. Overall, there are many important similarities between DRM issues across the regions, which open up areas where greater knowledge-sharing will be effective. Furthermore, the stocktaking exercise showed specific themes of good practice that can be emphasized as AADP works to strengthen DRM in the most strategic areas.

1

Introduction

A wealth of knowledge-based resources on drought risk management (DRM) exists in Africa and Asia, yet the opportunities for sharing successful experiences, disseminating lessons learnt and scaling up innovative practices within and especially across the regions are limited.

In Africa, the United Nations Development Programme Drylands Development Centre (UNDP DDC), with co-sponsorship by the UN International Strategy for Disaster Reduction (UNISDR), has been leading the African Drought Risk and Development Network (ADDN) since 2005. ADDN aims to bridge the gaps between knowledge producers and users by promoting applied discussion and improving stakeholders' access to information that will help them better react to the increased threats of drought and climate change in the drylands of Africa.

Based on the benefits of the implementation of ADDN, the Africa-Asia Drought Risk Management Peer Assistance Project was developed with financial support from the Government of Japan in late 2010. The project seeks to create an enabling environment for interregional knowledge-sharing and technical cooperation among drought-prone countries in Africa and Asia and is thus designed to encourage and to facilitate the use of best practices in DRM for development in the two regions.

Inter alia, the project is establishing an applied interregional Africa-Asia Drought Risk Management Peer Assistance Network (AADP), building on the pool of experiences and expertise of ADDN and drawing on its well-established capabilities. This broad-based network is intended to serve as a clearing house for identifying, documenting and promoting the application of experiences, expertise and models of good practice in DRM among regional, national and local development practitioners in Africa and Asia. It also intends to improve the capacity of decision makers and practitioners in their efforts involving policy-making, development planning and programme/project implementation in both regions.

The establishment of a baseline for the project first required the gathering of information on the impacts, causes, trends, solutions and needs of DRM in both regions. For this, a stocktaking exercise was required, the results of which are in this report.

The stocktaking exercise was undertaken between March and June 2011. Findings were established through consultations with key individuals in Africa and Asia, an online survey undertaken by some 400 people[1] working in drought-related fields (see Annex B), the First Africa-Asia Drought Adaptation Forum[2] (referred to from this point as the 'Forum') and literature review.

The focus of the stocktaking exercise was especially guided by the recommendations of the prior three Africa Drought Adaptation Forums (ADAFs), especially the most recent[3], the development of the Drought Risk Reduction Framework and Practices publication (UNISDR, 2009) and the views of experts from various institutions in Africa and Asia and, to some extent, from institutions elsewhere that have relevant regional experience.

Key themes that emerged as being pivotal to DRM and thus the target of the stocktaking research were:

- The root causes of vulnerability to drought
- The presence of necessary policy and governance frameworks, including political commitment and responsibilities from national to local levels for drought risk reduction
- The relevance of existing early warning indicators for drought management
- Innovative approaches to drought risk reduction and adaptation to climate change
- Coordination and communication of drought awareness and knowledge within government and among the general public

The stocktaking exercise also needed to be mindful of socio-economic and environmental trends such as population growth, poverty, water demand (e.g., due to industrialization and growth in agribusiness), soil degradation, climate variability and climate change.

Furthermore, in recognition of the accumulated information and data in Africa through ADDN, special attention of the stocktaking exercise was oriented to the Asia region. It thus attempted to ensure a healthy coverage of perspectives and experiences from drought hotspot countries in South and South-east Asia, especially Afghanistan, Pakistan, India, China, Myanmar, Vietnam and Indonesia (Ehrhart, Thow, de Blois and Warhurst, 2008). The Near and Middle East, Mongolia and Australia also received attention for the unique insights they provide. In Africa, the sub-Saharan region is a clearly recognized drought hotspot among other African high-risk subregions.

1 Of the 400 participants of the survey, 324 were completed in entirety with in-depth responses.
2 The First Africa-Asia Drought Adaptation Forum, 14-15 June 2011 in Bangkok, Thailand.
3 The 3rd ADAF, 17-19 September 2008 in Addis Ababa, Ethiopia.

The recent United Nations Global Assessment Report on Disaster Risk Reduction 2011 (UN, 2011) included a chapter on drought because of its significant implications for development and the relative lack of emphasis and attention that it receives compared with rapid-onset natural hazards. The chapter explains that, in the absence of systematic data, it is impossible to provide a global assessment of patterns and trends in drought impacts and loss. The same is true regarding an accepted understanding of DRM benefits. Evidence is thus mainly presented as various forms of observation, case study and context specific research. Overall, this masks the seriousness of drought.

Consequently, the findings presented in this report are important because they provide insights regarding the DRM landscape in the two regions that are otherwise hard to capture. Similarly, it is unlikely that a comparison of views on DRM between Africa and Asia has hitherto been assimilated, other than via ad hoc meetings and correspondence among a handful of individuals interested and engaged in networks and their establishment.

The robustness of the report derives from the design of its focus (who, what and where) and the collection of the (subjective) opinions of many individuals working on drought-related issues for a wide range of institutions across Africa, Asia and elsewhere. Indeed, the accumulated number of years of experience of those individuals who participated in the online survey amounts to some 3,000 years. This report is therefore able to go beyond generating a 'sense' of what the similarities and differences might be, by painting a more detailed picture.

Chapter 2 considers and compares the impacts drought is having in Africa and Asia, why this is happening (the root causes) and how this is likely to change over the next 10 to 20 years. It also considers what is impeding the reduction in risk (i.e., the barriers to addressing root causes).

Chapter 3 goes on to explain how various approaches being deployed in the regions are addressing this situation and the effect that this is having. The stocktaking also explains what good practice DRM is considered to be and what aspects are replicable.

Chapter 4 concludes the report by considering how good practices may actually help fill the identified gaps and areas of greatest concern. Therefore, the report brings findings together with some suggestions regarding opportunities where AADP could focus attention based upon the stocktaking exercise. In this way, it attempts to set the scene for the peer assistance network in a way that is demand-driven.

2 Drought Impacts and Causes

2.1 Drought Impacts

Drought may have a number of different and interconnected social, economic and environmental impacts. Some of these include: fire; decline in crop yields and thus increased food insecurity; livestock losses; forced sale of household assets; forced sale of land; increased crime; depletion of water for human use (e.g., for drinking, cooking and cleaning); decline in health (e.g., through malnutrition or lack of safe drinking water); displacement/migration; civil unrest/conflict; famine; depletion in water for use in business/industry (e.g., hydropower); and national economic impact.

As can be seen in Figure 1, the overall pattern illustrating the severity of drought impacts in Africa is very similar in broad terms to that in Asia, but with Africa experiencing marginally more significant impacts. Thus, Africa and Asia share many experiences with drought impacts. Comparing individual types of possible drought impacts (i.e., fire, decline in crop yields and thus increased food insecurity, livestock losses) between the regions reinforces this message. It can be seen that the perceived significance (i.e., low, medium, high and very high[4]) of each potential impact is similar in Africa and Asia.

Both regions are impacted most significantly by declines in crop yields and thus increased food insecurity and by the depletion of water for human use (e.g., for drinking, cooking and cleaning).[5] In Asia, no respondent felt that declines in crop yields and thus increased food insecurity were unusual or unlikely.

4 Low: It is unusual/unlikely for this impact to occur. Medium: Impact is limited and recovery is swift. High: Impact is widespread and long-lasting. Very High: impact is very severe, widespread and has long-lasting implications.

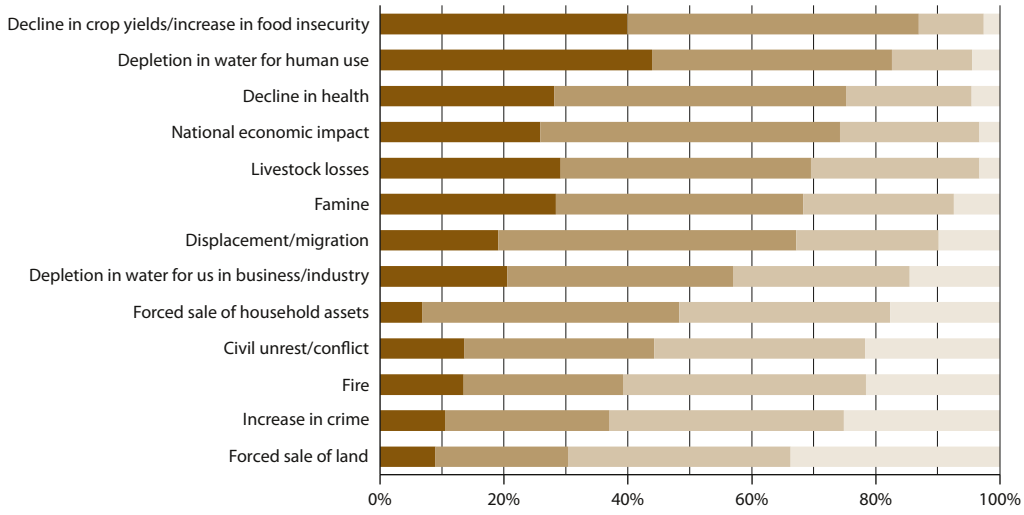
5 There is no evident reason why, in a small number of cases, outlying opinion considered these drought impacts to be of low (or medium) severity.

A divergence between the regions is noticeable with respect to famine and the impact of drought on national economies, as Africa is significantly more adversely affected than Asia. Civil unrest/conflict and a decline in health (e.g., through malnutrition or a lack of safe drinking water) are also more widespread in Africa than in Asia.

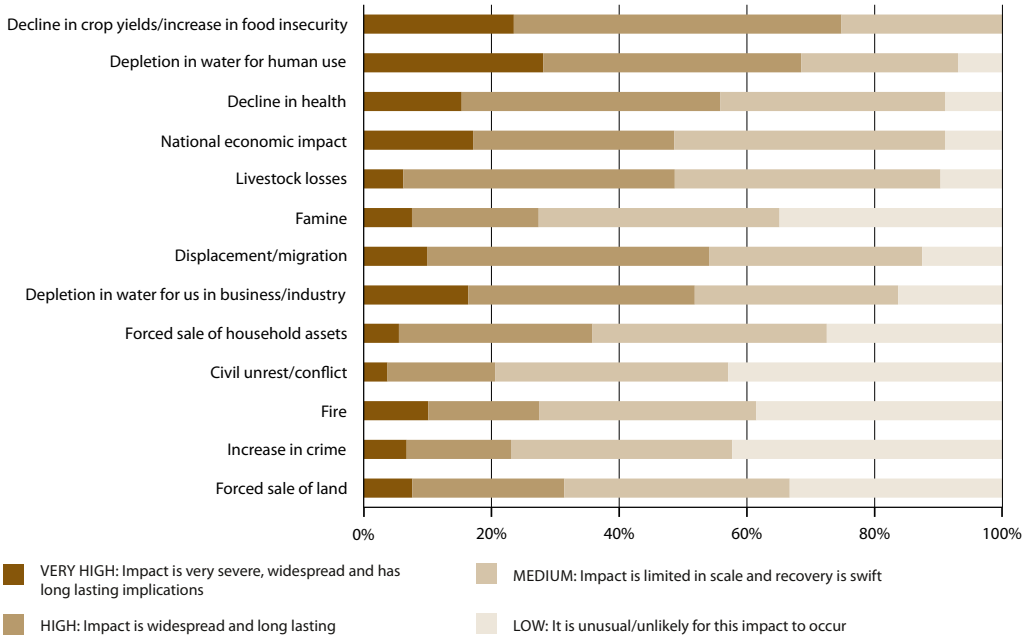
Some respondents reported that violence against women in a household is often linked with pressures brought about through drought.

Figure 1: Drought Impacts

Africa



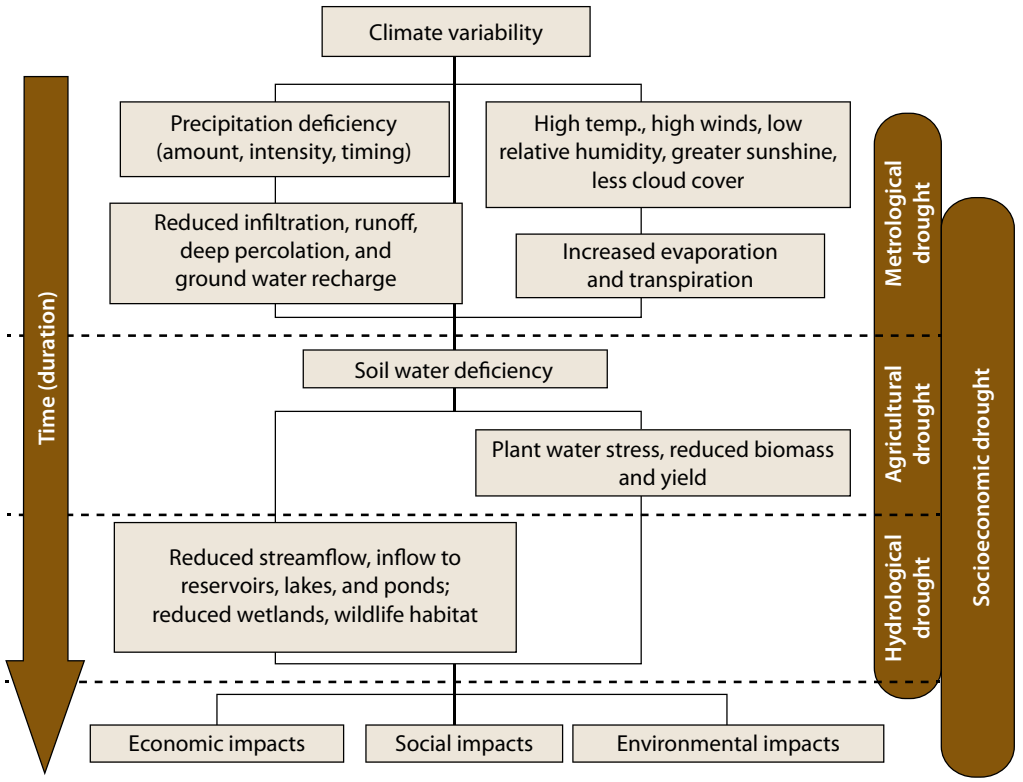
Asia



2.2 Root Causes of Drought Impacts

The drought impacts stem from a combination of factors, as illustrated in Figure 2. An increase in rainfall variability is one aspect, but how this affects communities and nations depends upon how well people, the economy and the environment can cope.

Figure 2: Relationship between Meteorological, Agricultural, Hydrological and Socio-Economic Drought



Source: UNISDR (2009)

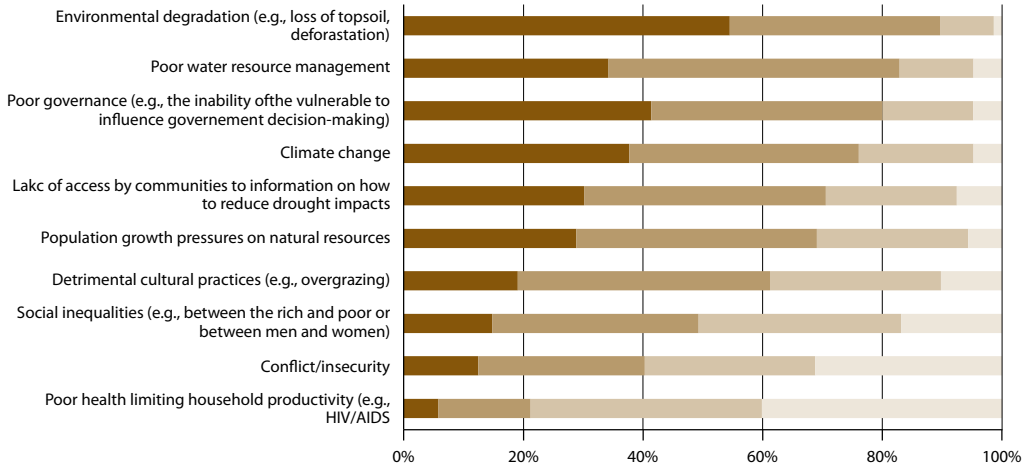
There are many issues, especially when poverty-related, that undermine the ability to withstand reduced water availability (a meteorological drought) and to prevent it from developing into agricultural and hydrological drought with social, economic and environmental impacts. These deep-rooted problems drive and sustain drought risk. As can be seen in Figure 3, this stocktaking exercise focused on a consideration of:

- Poor health limiting household productivity (e.g., HIV/AIDS)
- Lack of access by communities to information about how to reduce drought impacts
- Detrimental cultural practices (e.g., overgrazing)
- Social inequalities (e.g., between the rich and poor or between men and women)
- Poor water resource management

- Environmental degradation (e.g., loss of topsoil, deforestation)
- Poor governance (e.g., inability of the vulnerable to influence government decision-making)
- Population growth pressures on natural resources
- Climate change
- Conflict/Insecurity

Figure 3: Root Causes of Drought Impacts

Africa



Asia

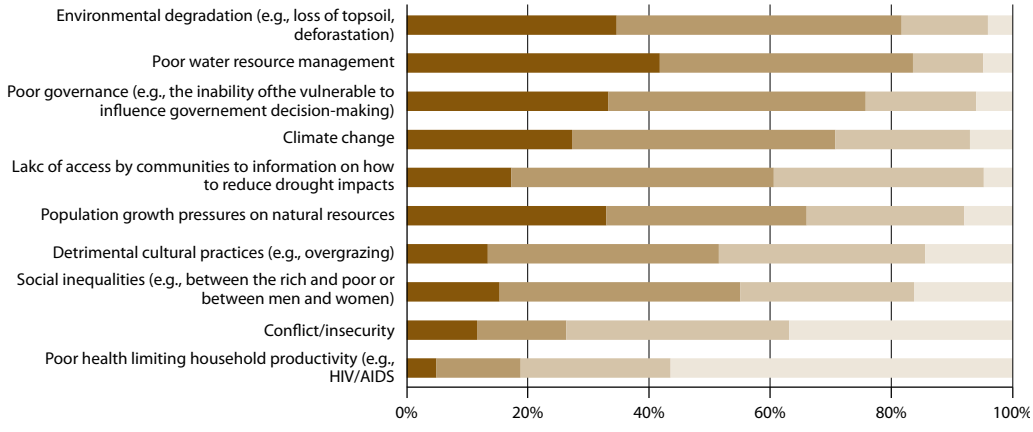


Table 1 summarizes a comparison of the findings on the root causes behind drought impacts between regions outlined in Figure 3. The highlighted cells indicate the most important issues, reflected in both Africa and Asia, but with slightly differing emphases.

Both regions overwhelmingly consider environmental degradation, poor water resource management and poor governance to be either a very important or the most important contributing cause of drought impacts. In Africa, environmental degradation is the highest-ranking root cause and, in Asia, it ranks only marginally lower than poor water resource management. Combined for both regions, environmental degradation is the most important root cause of drought impact.

Table 1: Comparing the Root Causes of Drought Impacts between Africa and Asia

Root causes	Summary comparison of findings between Africa and Asia
Poor health limiting household productivity (e.g., HIV/AIDS)	Not considered to be particularly important in either region (ranking the least important overall), with most respondents in Asia viewing it as least important
Lack of access by communities to information on how to reduce drought impacts	A relatively important issue overall, especially in Africa, where a greater proportion of respondents consider this to be most important.
Detrimental cultural practices (e.g., overgrazing)	Broadly similar
Social inequalities (e.g., between the rich and poor or between men and women)	Broadly similar
Poor water resource management	Broadly similar, with both regions overwhelmingly considering this to be very important or most important overall. In Asia, it is the highest-ranking root cause and, in Africa, it is among the top three.
Environmental degradation (e.g., loss of topsoil, deforestation)	Broadly similar, with both regions overwhelmingly considering this to be very important or most important overall. In Africa, it is the highest-ranking root cause and, in Asia, it ranks only marginally lower than poor water resource management. Combined for both regions, this is the most important root cause of drought impact.
Poor governance (e.g., the inability of the vulnerable to influence government decision-making)	A top-three root cause in both regions, with slightly greater emphasis in Africa.
Population growth pressures on natural resources	Broadly similar and, overall, most consider this to be an important issue.
Climate change	Overall, among the most important of issues in both regions, but especially in Africa
Conflict/Insecurity	The majority of respondents in both regions do not consider this to be among the more important root causes.

Climate change is also recognized as a very important issue. In fact, government officials rank climate change as the leading root cause of drought impact. This issue is important to analyse in greater depth to gauge its meaning and implications for DRM.

The Forum debated the propensity to attribute drought impacts to climate change and whether this was justified, complimentary to further DRM progress, or actually obstructive to work on existing deep-rooted causes of drought risk. For example, the Forum debated whether it is possible that climate change is being used as a political scapegoat in developing countries to mask development shortcomings that should and could be better managed. This was also a topic of discussion at a Water Integrity Network meeting. One case presented during the meeting explained how a country's Ministry of Irrigation and Water Resources had been sceptical of climate change, which was later used to justify problems with water provision. The ministry did this despite an earlier study highlighting silting problems and a recommendation to improve river flow in order to help avert such water shortage (Water Integrity Network, 2010).

In practice, it is very hard to identify, organize and explain how the various causes of drought impacts interrelate. This presents a significant challenge. Climate change impacts are similarly complex. Therefore, ascertaining how drought and climate change are connected in a given environment is especially difficult, as the combined relationship can be quite ambiguous.

For example, in reference to the humanitarian crisis in the Horn of Africa in 2011, Integrated Regional Information Networks (IRIN) stated that, as the subregion experiences its driest periods in 60 years, a situation that will push the numbers needing aid to beyond 10 million, some have been quick to blame climate change. But the IRIN report nevertheless states that "no single event can be attributed to climate change" (IRIN, 2011).

While there have been concerted efforts to raise awareness about climate change and to promote advocacy, ongoing dialogues and debates focus mostly on scientific and technical information at the global and regional levels. Consequently, emphasis tends to be on centralized broad-brush thinking about the implications and what should or could be done. Failure to integrate indigenous knowledge and practices into such discourse often creates the impression that an increasing risk of drought is inevitable. This may explain the great concern among survey participants about climate change as a root cause of drought impact, despite uncertainty about future climate projections. In any event, the belief that drought is inevitable fuels a tendency to focus on devising better responses to drought rather than on taking preventive approaches such as improved land and water management.

In Africa and Asia, local practice as a basis for DRM is very valuable. Any undermining of local resilience to manage drought is detrimental and is a root cause of any drought impacts. In particular the stocktaking highlights the loss of traditional knowledge about coping with drought as a critical impediment. Such loss could be the result of forced seasonal migration, changes in accessibility to land, increasingly unpredictable weather patterns associated with climate change and an increase in invasive species of plants.

2.3 Trends in Drought Impacts and Their Causes

The clear and overwhelming consensus among survey respondents and interviewees is that, because there is insufficient political will to arrest existing risks, drought impacts and their causes will worsen in the coming 10 to 20 years. The vast majority of respondents who hold this view cite climate change as a major driver of future risk. This additional threat to already stressed and overburdened drought-stricken places appears to strengthen the belief that existing drought management frameworks and practices are ill-equipped to face future risks, which will be even greater than current ones.

The full list of issues that are considered to be drivers of deteriorating conditions are included under:

- Climate change impacts (e.g., more extreme events, erratic rainfall/less predictability in weather, shifting climate zones, rising sea levels and the spread of invasive species of plant)
- Increasing water demand to keep pace with population expansion and economic development, leading especially to withdrawal of groundwater (e.g., for irrigation, livestock, human and industrial use) and overall damage to the hydrological cycle
- Increasing poverty (especially how it impacts the search for fuel wood and a consequent acceleration of deforestation)
- Environmental degradation (e.g., deforestation, encroachment on protected areas) and poor land management (e.g., impoverished soil, salinization, industrial pollution)

A small, but not negligible, proportion of respondents believe that trends in drought impact will improve. Such opinions are based on a belief in eventual benefits of recent and new policy shifts toward DRM and observation of local good practice.

Government respondents cite a strengthened policy landscape in India as a prime example of why drought trends will improve in that country, where overall food production and the capacity to distribute food from areas of surplus to deficit, combined with employment guarantee schemes and the deployment of groundwater management based technologies, are the key approaches supporting this view. However, there is an unusually high variation between the government and non-government views regarding the status of DRM in the country. The former believes that considerable headway has been made and will continue, but evidence on the ground in vulnerable communities via civil society organizations is quite different. Another factor that can mask the reason for improving drought impact data for one population is the possible mitigation of food security risks in one location to the detriment of another through expanding agribusiness, which has local social and environmental implications.

2.4 Barriers to Addressing Causes of Drought Impacts

In addition to appreciating the conditions that create drought risk and lead to drought impacts, it is necessary to understand what is hindering or preventing their removal. The factors could be a lack of:

- Technical capacity at the local level
- Technical capacity at the national level
- Political will
- Funding
- Local awareness
- Other priorities

As has been reported for several decades and as Figure 4 illustrates, a lack of political will for DRM is still considered to be a very significant factor in both Africa and Asia. Some of the disincentives for DRM (that have also been understood for some time) are the inherent complexity of drought as a multifaceted phenomenon that stretches beyond an understanding of meteorological conditions alone and its gradual, elusive effects, the seriousness of which takes a while to become apparent. The non-structural nature of drought can also create a political vacuum in which suitable interventions lose their lustre in comparison to other political priorities. But these issues may mask, or generate, persistent and even more challenging deterrents. So the Forum went a step further in trying to articulate why 'lack of political will' is such a stubborn barrier and what it really means.

With respect to data, there is no linear and direct relationship between the provision of timely and accurate scientific data (even across meteorological, hydrological, agricultural, social and economic issues) predicting drought impacts, on the one hand and an increase in the political will to mobilize resources and prevent losses, on the other. This is important for the discussion on barriers to risk management.

Even when benefits of a risk management approach seem clear and economically and morally sound, calls for action are irrelevant if they are not in step with political needs and desires. The classic example of mere political expediency is the provision of food aid for drought relief just in order to boost government popularity. In some countries, there have been reports that this happens even when there is neither the existence nor threat of drought. Consequently, the Forum suggested the possibility that drought warning systems may not be monitoring all of the right things: there are politically related triggers at work that can influence drought risk. These need to be better understood and circumvented (see Chapter 3.2.2).

Additional observations regarding the findings include the fact that a lack of technical capacity at the local level is a greater barrier in Africa than in Asia, but, in both cases, local capacity is cited as being a larger barrier than national technical capacity. Linked with this viewpoint, a lack of local awareness is considered to be a relatively important barrier in both regions. In this sense, the undermining of local knowledge and practice on DRM has a doubly negative effect:

it causes drought impacts (as the previous section discusses) and it prevents the deployment of effective strategies to reduce risk (as this section discusses).

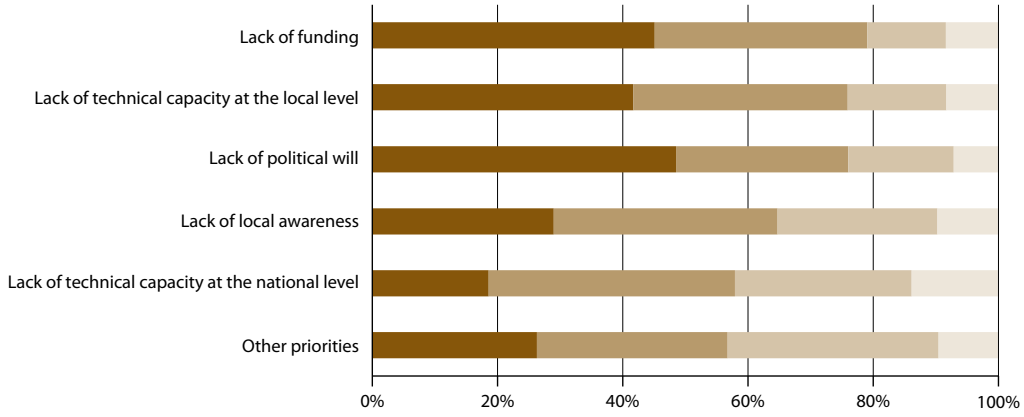
In order to ensure the transfer of capacity from higher to lower levels, efforts must go hand-in-hand with democratization and decentralization reforms. The current uprisings in some Arab States were cited as opening new opportunities. The Forum also noted how greater traction for DRM occurs at lower levels, such as in the experience of UNDP Morocco. Decentralized efforts are commonly perceived to be more effective in actually bearing results. There is also recognition that the gap between top and bottom levels has to be better bridged: the meso-level is a crucial link in the chain. As such, 'boundary organizations' that operate at the meso-level (e.g., small- or medium-sized river basin management committees as applied in Namibia under the approach of the Forum for Integrated Resource Management) can play a pivotal role as a basis for 'smart partnership' (i.e., collaboration among partners who share clear strategic roles and responsibilities and who contribute toward the management of common problems).

In Africa, insufficient funding is cited as a severe barrier to addressing causes of drought impacts, even though government, donors, the private sector and the public mobilize significant funding during periods of drought-incurred severe food insecurity, such as that which the Horn of Africa is currently enduring. This poses a question of whether the funds raised are used effectively and efficiently to also tackle causes and to mitigate future risks of drought disasters.

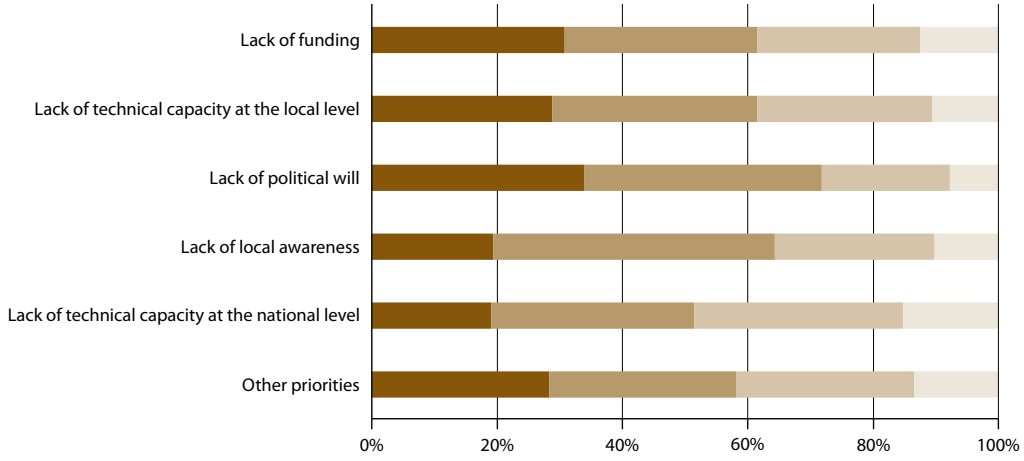
Finally, a general observation on the findings is that there is a sense that many barriers are slightly more deeply entrenched in Africa than in Asia.

Figure 4: Barriers to Addressing the Causes of Drought Impacts

Africa



Asia



3

Drought Risk Management

3.1 Approaches and Practices

There is wide appreciation of the fact that a multifaceted approach to DRM is required. The approach must recognize the wide scope of drought and thus the implications for coherent strategies to manage it across sectors, levels and disciplines. Furthermore, the applicability of a particular approach depends on the timing of interventions (before, during and after impact). Box 1 contains an indicative list of DRM activities that may be necessary. During the exercise, it was underscored several times that the restoration of the whole hydrological cycle is a broad objective that can be contextualized and used as a basis for connecting key approaches complimentarily.

In practice, the lack of integration of the various approaches, such as through sustainable land management, water resource management, food security and so on, is highlighted as a weakness, particularly at the national level, which is separated along sectoral lines. However, the DRM approach at the local level is generally perceived more integrated (and, as such, is also frequently regarded as good practice). Local approaches tend to better emphasize vulnerability factors in relation to livelihood strategies and natural resource management efforts.

With respect to the perceptions of how drought is actually managed in practice rather than in theory, observation in Africa and Asia again makes it clear that the findings for the two regions are correlated, as is evident in Figure 5. In Africa and Asia, drought is dealt with predominantly as a food security issue and a water resource issue and in relation to climate change and variability, while the least common approaches concern the effects of drought on business and industry and their relation to local governance and land degradation.

Box 1: Indicative List of DRM Activities

Immediate safety net measures:
- Supplying food aid and other non-food items to affected communities
- Providing emergency livestock purchases and subsidies to transport animals to market
- Providing supplementary livestock feeding (fodder, forage, hay distribution, water hauling, opening of strategic grazing area, etc.)
- Promoting emergency vaccination and de-worming
- Providing seed distribution, stockpiling cereals and low-interest agriculture loans and emergency assistance programmes
- Facilitating borehole rehabilitation and water-trucking
- Establishing a local coordinating body to ensure emergency response based upon priorities

Short-term measures:
- Developing water use guidelines based on the types and duration of drought
- Developing emergency water allocation strategies
- Increasing communication of climate-related information, with specific advisories
- Increasing local drought monitoring capacity and infrastructure
- Providing support to farmers for purchase of drought and crop insurance
- Establishing food subsidy programmes for drought-affected individuals
- Providing support to most vulnerable groups, such as women and youth

Mid-term measures:
- Expanding efforts to promote rainwater harvesting
- Introducing improved soil management techniques that decrease soil erosion and increase water-holding capacity of soil
- Adopting alternative cultivars or crops that are more drought-resistant or heat-tolerant
- Addressing bottlenecks in seed delivery systems
- Establishing a system for sharing of experience and capacity development for vulnerable groups in their adaptation measures/responses

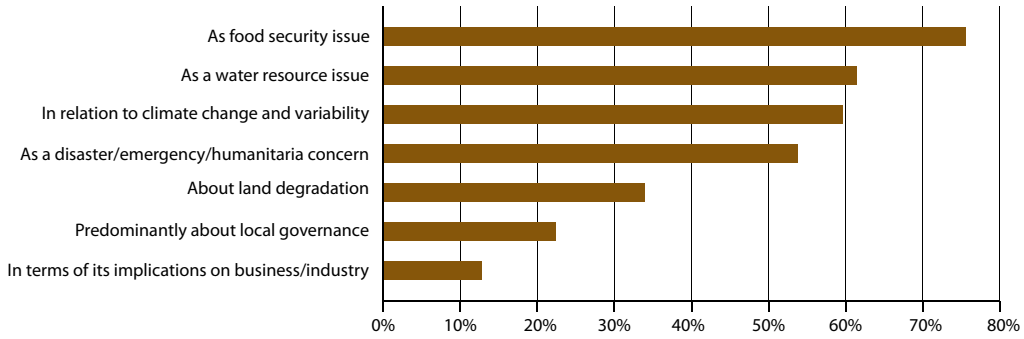
Long-term measures:
- Investigating business and farm/ranch diversification strategies (e.g., selecting drought-tolerant varieties, implementing irrigation where feasible and diversifying away from rain-fed crops to less water-dependent products, such as honey from bee-keeping)
- Addressing deforestation and desertification (land degradation in drylands)
- Reviewing the effectiveness of mid-term measures and strengthening capacities as needed
- Strengthening market access and rural infrastructure
- Reinforcing legal, policy and institutional frameworks for drought risk mitigation and dryland development

Source: UNDP (2011).

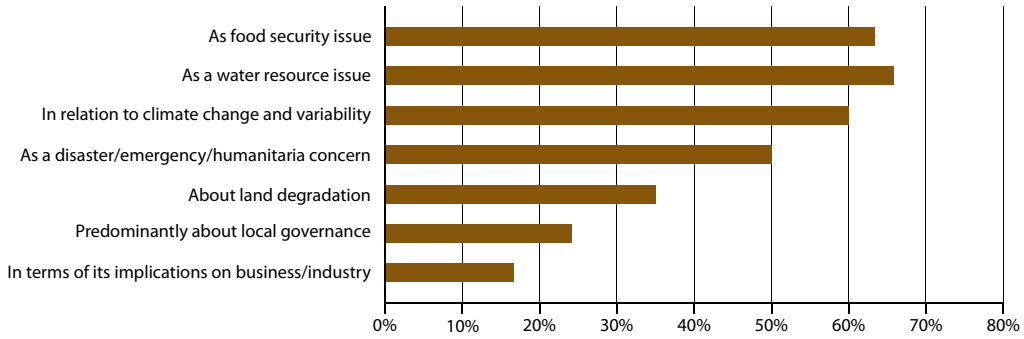
The predominant approaches appear to reflect a response to the major drought impacts observed (e.g., decline in crop yields and increased food insecurity and depletion of water for human use) rather than to their main causes. In particular, although environmental degradation and poor governance are considered to be very important causes of drought impacts, drought is not commonly approached with these causes directly in mind. However, these causes are arguably cross-cutting issues that can be a part of the predominant approaches. Of possible importance for the search for strong entry points, poor water resource management is

Figure 5: Approaches to Drought Risk Management

Africa



Asia



noted as a very important cause of drought risk, but water resource management is also an established common approach to deal with drought. As a cross-cutting theme, it is highly appropriate. Integrated water resource management (IWRM) complements the restoration of the hydrological cycle principle already mentioned.

Although climate change and variability are not currently considered to be a dominant cause of drought impact, predictions for the next 10 to 20 years strongly emphasize its likely harm. It appears that drought-related practitioners are responsive to this concern and are already focusing considerable attention on this issue, despite uncertainty over future implications. Indeed, climate change is largely acknowledged to be an opportunity to enhance DRM, as it is seen to shed renewed light on the issues of climate variability and associated climatic disasters, including drought, while broadening the basis for resource mobilization. This results in an acceleration of work related to adaptation to climate change while longer-established but related disciplines, such as climate-related disaster risk reduction, are bypassed (or re-branded). Indeed, it is interesting to note that drought is already dealt with in Africa and Asia more commonly as an issue of climate change and variability rather than as a disaster issue.

Forestry, forms of diversification of livelihood, the introduction of drought-resistant crops and education/awareness were the most common examples of DRM among many important contributions.[6]

3.2 Progress and Gaps in Core Areas of Drought Risk Management

This section indicates how effective the combination of DRM approaches has been in reducing drought risk in Africa and Asia. The Hyogo Framework for Action (HFA), a unique interface for paradigms on climate change, variability and disasters, was a template for the design of this aspect of the stocktaking exercise. Box 2 summarizes the HFA in the context of this work.

Box 2: Capturing Concepts of Drought Risk Management within the Hyogo Framework for Action

According to a strong majority of views obtained through consultation with selected experts, the commitment of nations to the HFA is suited to promote DRM.

There has been considerable progress toward better understanding the relation between drought risk reduction frameworks and the multi-hazard disaster risk reduction HFA. For example, an ad hoc group on drought was convened in China in June 2006. At this meeting, the members discussed elements for drought policies in line with the priorities of the HFA. In October 2006, findings were presented at the 2nd ADAF as part of the ADDN for deliberation and refinement. There has since been further review by experts and organizations, including at the 3rd ADAF in Ethiopia in September 2008.

Meanwhile, awareness and understanding of adaptation to climate change has been rapidly growing. The relationship between climate change adaptation and disaster risk reduction has received considerable attention and funding for the two issue areas has so far been closely overlapping.[7] Indeed, the negotiating text for the post-2012 agreement invites United Nations Framework Convention on Climate Change (UNFCCC) Parties to support an Adaptation Framework by "enhancing climate change related disaster risk reduction strategies, considering the HFA where appropriate" (UNISDR, 2010).

Such processes have strengthened the relevance of the HFA as a conceptual basis for drought discourse.[8] Progress on the HFA, as presented in the Global Assessment Report on Disaster Risk Reduction 2011, can offer insight into progress in DRM. However, some arguments claim that, drought, as a slow onset and multi-faceted hazard with particularly subtle and complex impacts, can require some unique efforts compared with other natural hazard types, such as floods or cyclones (UNDP, 2011). Mindful of this, the latest thinking regarding the links between drought and the HFA has informed the design of some core elements of the stocktaking survey, especially those concerning the issues covered in this section.

6 Others include: irrigation schemes; drought as a health issue; water harvesting and saving; food reserves; mainstreaming ecosystem services; waste management; biodiversity and resource conservation; index-based insurance for drought impacts on agriculture; and emergency funds.

7 As of October 2010, the Kyoto Protocol's Adaptation Fund had approved two projects and endorsed six more – all of which are fundamentally disaster risk reduction initiatives whose components overlap with the HFA priorities (UNISDR, 2010).

8 Alternatives include frameworks under the United Nations Convention to Combat Desertification (UNCCD), natural resource management and livelihoods-based frameworks.

3.2.1 Policy Frameworks and Plans

Effective DRM that deals with deep-rooted problems requires broad support from national to local levels. A key area is the integration of DRM concepts and principles into development planning and practices. Without this integration, society will find it difficult to do more than respond to the impacts of drought as they are felt.

Establishment of national drought policies and plans is imperative to guide this agenda across sectors and administrative levels and various tools have been produced to help in this process (UNDP, 2011). In the words of Mr. Michel Jarraud, Secretary-General of the World Meteorological Organization, "Our ability to lessen or mitigate the impacts associated with drought is contingent on putting in place comprehensive national drought policies."[9] However, the establishment of such policies does not necessarily mean that those policies will be implemented or appropriately funded, as survey respondents report.

The propriety of key aspects of policy and planning for the needs of DRM depends upon answers to questions that include:

- Do they emphasize prevention of drought impacts over response?
- Do they deal with new drought risks (e.g., because of climate change, in urban areas, in the context of delta regions)?
- Do they support long-term investment to overcome deep-rooted problems?
- Do they encourage public and non-governmental organization (NGO) participation?
- Do they facilitate coordination among numerous government and non-government stakeholders?
- Are they based on real local issues?

Findings based on answers to these questions are shown in Figure 6.

Overall, the results indicate that approaches to DRM are ad hoc and non-institutionalized in both regions: Attention to DRM evaporates soon after the first raindrops hit the parched ground.

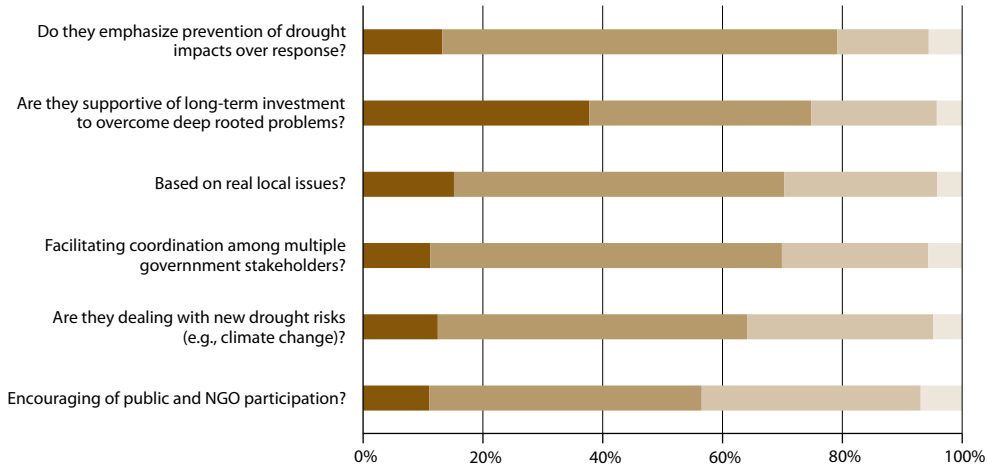
Most respondents stated that only occasional efforts were made to reflect DRM principles within policy and planning frameworks. The topic of greatest concern in Africa involves long-term investment to overcome deep-rooted problems. In this case, nearly 40 percent of respondents felt that long-term investment is not represented at all. In Asia, the weakest aspect regarding the integration of DRM in policies and plans involves the response to new drought risks associated with recent socio-economic and environmental trends.

In both regions, a core concern is that the emphasis is on response rather than on prevention. Indeed, this is a common theme of the entire stocktaking exercise and is mentioned in relation

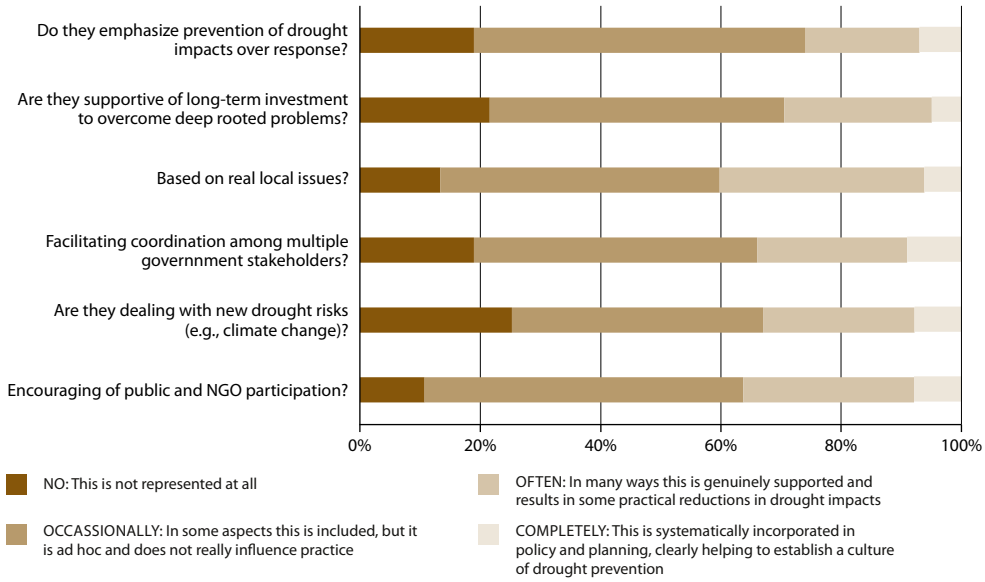
9 An expert meeting was convened in Virginia, USA, in July 2011 for the preparation of a Compendium on National Drought Policy. See: http://www.wmo.int/pages/mediacentre/press_releases/pr_921_en.html

Figure 6: Policy Frameworks and Plans

Africa



Asia



to all manner of drought topics and issues, not just policies and plans. As reported earlier, a lack of prevention is usually attributed to disincentives – particularly compared with politically popular relief aid.

The number of respondents who feel that there is a systematic incorporation of issues into policy and planning is very slim in both regions. Where issues are often integral to policy and planning, the greatest progress in Africa has been in the encouragement of public and NGO participation. In Asia, it has been in improved incorporation of the real local aspects of drought into national-level frameworks.

3.2.2 Drought Risk Assessment and Dissemination of Early Warning

An assessment of risk is the basis for decision-making. If the risk is not known, then it is not possible to manage and reduce it efficiently. Further, awareness of risk should lead to action. With these principles in mind, the stocktaking exercise investigated these key questions:

- How effectively does a drought warning generate funding that can be used to avoid losses?
- How well is an identified threat of drought communicated to vulnerable communities?
- How well does this lead to local action that helps reduce any impacts?

Overall, the pattern of results is similar for the two regions. Most apparent is the strong feeling that there are very few examples of systems and processes for drought risk assessment and the dissemination of early warning being well established and highly regarded (see Table 2).

Table 2: Perceptions on the Effectiveness of Drought Risk Assessment and Early Warning

Topic	Number of people who feel the topic is well established and highly regarded		
	Africa	Asia	Elsewhere
Effectiveness of a drought warning to generate funding	0	2	0
Communication of drought to vulnerable communities	0	4	0
Likelihood of warning leading to local action	3	1	0

Notably, those institutions actually responsible for Early Warning Systems (EWSs) express most of the few positive views. This is a divergence between the producers and users of the monitoring information and data and raises a question about the feasibility and practicality of the existing drought assessment and early warning systems and processes.

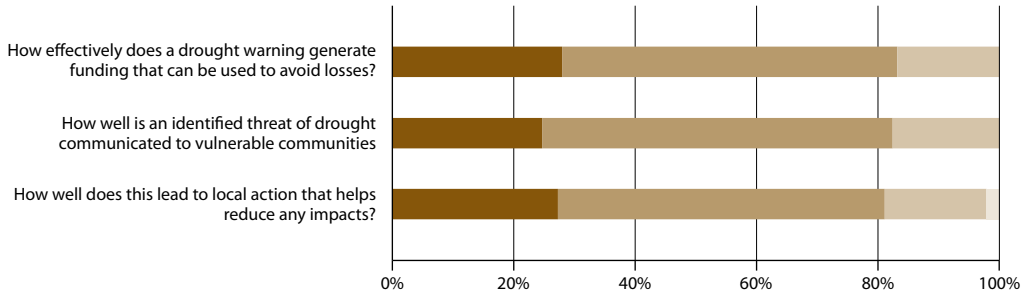
A representative statement of the stocktaking overall is that more work is needed to bring short-term weather forecasting and longer-term projections of climate change down to a local level, where meaningful management decisions can be taken. This needs to happen along with a simultaneous recognition that changing social, economic and environmental conditions are undermining local knowledge and awareness about what to do and when to do it. This is especially the case in contexts where local people are more heavily dependent on word-of-mouth to share information, such as remote dryland communities. Furthermore, recognition that such people have no use for 'academic' consideration of the linkages with climate change needs to inform efforts to link warning systems with the people affected by weather events (IRIN, 2011).

Lastly, it is noted that, even if good information exists, non-climatic pressures regularly hamper action. In particular, scientifically defined drought is deemed irrelevant if it does not suit political needs, agendas and desires. Consequently, if monitoring is not expanded to

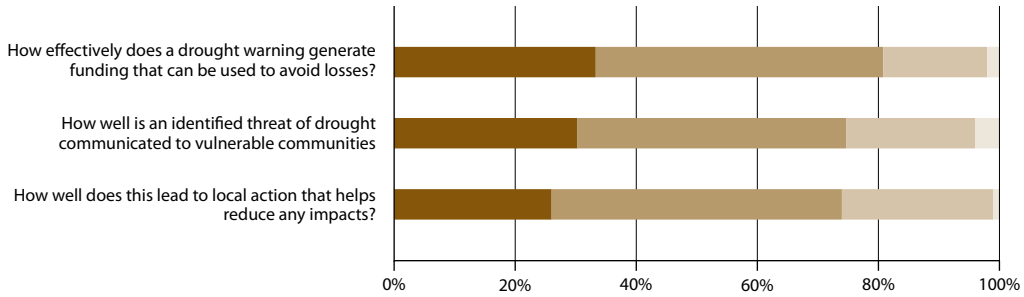
include all important indicators of pending drought risk, including non-climatic ones, or is not better linked with decision-making processes, then it should be no surprise if early warning does not produce timely action. For example, the stocktaking exercise was informed of an experience in which changes in some food tariffs in one country led to increased demand for the neighbouring country's food reserves. This country then further depleted food reserves to bolster an electioneering campaign. Consequently, there was a lack of food when agricultural productivity weakened and failed on account of meteorological drought. This leaves the question: Should the scope of EWS be expanded to better monitor trade, political cycles and other non-climatic issues and, if so, how?

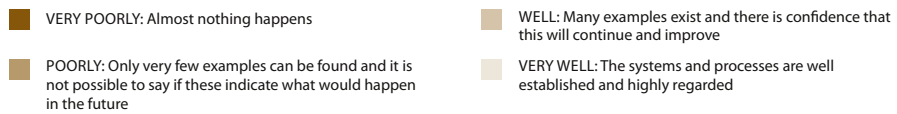
Figure 7: Drought Risk Assessment and the Dissemination of Early Warning

Africa



Asia





3.2.3 Awareness and Knowledge

Periodic recurrence of drought disasters in many parts of Africa and Asia highlights the importance of reviewing and reforming drought management comprehensively: from short-term emergency response to efforts to build longer-term resilience, from narrowly-scoped sectoral to comprehensive broad-based support and from dominant scientific bases to open participatory processes. To promote these changes, raising awareness and sharing experiences about effective approaches as well as scaling up those approaches and especially highlighting

cross-sectoral relationships, is commonly regarded as an essential first step. The Forum stressed that it is still a challenge to promote synergy among existing global, national and lower-level mechanisms and to implement them appropriately for given localized contexts. Strengthened partnership at regional, interregional and global levels is clearly necessary as the key driving force to enhance collective resource mobilization and coordinated implementation of DRM.

Analysis of the accumulated consensus of opinion makes it apparent that the proportion of survey respondents' views is almost identical between the regions (see Figure 8). Most people in Africa and Asia feel that drought awareness and knowledge are rarely shared. In a positive development, the emergence of many cases where good practice, new issues and other important information are widely disseminated through established institutions and networks is challenging this paradigm. Indeed, government respondents especially feel that sharing drought awareness and knowledge is quite well established in several instances. Such views, however, may indicate a greater familiarity with national platforms and committees (see Box 3) and some publications rather than a sense of how such mechanisms and tools supplement other sources of information to best support drought-affected communities.

Box 3: High-Level Mechanisms and Processes for Awareness and Knowledge Sharing and Coordination

Across national borders, south-south cooperation (SSC) has been gaining momentum.[10] Indicative of this is the G20 report Boosting SSC in the Context of Aid Effectiveness, produced in 2010. Furthermore, middle-income countries are increasingly active in international development and have set up their own modalities for development support and knowledge transfer. These include Brazil's Agency for Cooperation, India's Ministry of External Affairs Technical Cooperation Division, China's International Poverty Reduction Centre and Korea's Development Institute and similar institutional arrangements are also established in Mexico and Turkey, among others.

In several countries, institutions and programmes dedicated specifically to drought monitoring, awareness-raising and disseminating information have been developed. Some of these identified by the exercise include the Drought Research Unit of the India Meteorological Department, the Drought Prone Areas Programme in India and the Department of Forecasting Services and Disaster Mitigation in China.

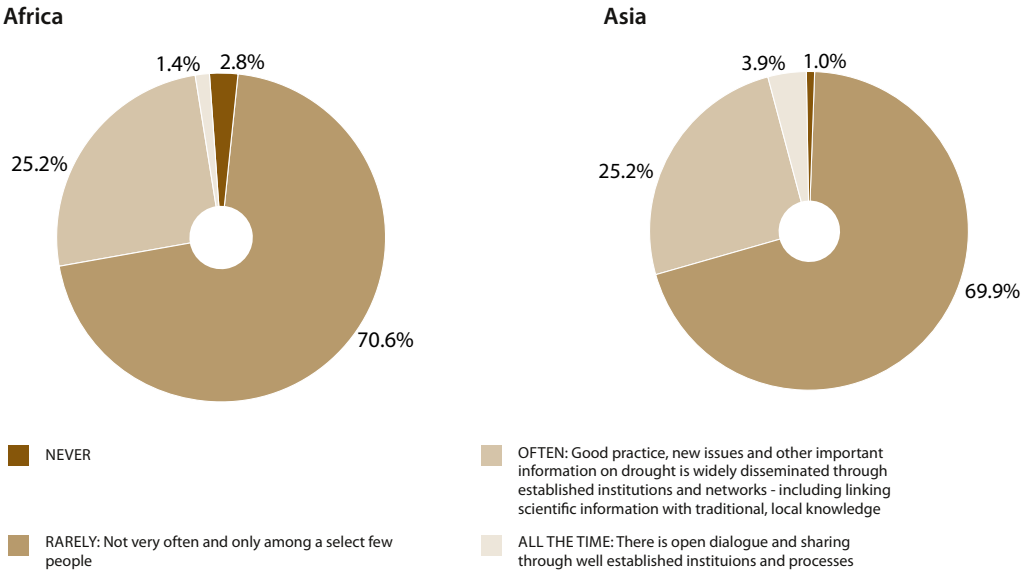
Many countries have established inter-sectoral coordination platforms at the national level (and sometimes at the provincial and lower levels) that have relevance for DRM. In Uganda, for example, these include the National Sustainable Land Management Platform coordinated by the focal points for the United Nations Convention to Combat Desertification (UNCCD) National Action Programme in the Ministry of Agriculture, Animal Industry and Fisheries; the National Intersectoral Climate Change Technical Committee coordinated by the UNFCCC Focal Point in the Ministry of Water and Environment; and the National Disaster Risk Management Platform coordinated by the Disaster Preparedness and Refugees Department in the Office of the Prime Minister. Other countries will have similar arrangements.

10 Evidence includes the High Level Event on South-South Cooperation and Capacity Development in Bogota, Columbia, March 2010, which collected 110 case studies illustrating good practice in SSC, and the High Level United Nations Conference on South-South Cooperation in Nairobi, Kenya, December 2009.

Regardless of the interpretation of these issues, other aspects of the stocktaking exercise strongly emphasize the acute need for improved sharing of good practice, particularly the dissemination of locally proven knowledge and practices as an integral part of DRM.

With respect to practicality, some have suggested the introduction of innovative methodologies for knowledge-sharing that would complement long-established ones such as publications. It is important to fill a niche by providing needed information in a timely, accessible, practical and user-friendly format. For example, the Solar Drip Irrigation Project from Benin, West Africa, has introduced video recording as a new tool for the collection of knowledge about drought and for raising awareness.[11] Without clear, practical benefits and the deployment of appropriate methods of dissemination, network fatigue is a real threat.

Figure 8: Awareness and Knowledge



3.3 Proposals for Replicable Good Practice Drought Risk Management

3.3.1 Introduction to Good Practice

Based upon the input of those involved in the stocktaking exercise in Africa, Asia and internationally, the previous sections have highlighted some DRM gaps in policy frameworks and plans, drought risk assessment, the dissemination of early warning and awareness and knowledge. Aside from pointing out gaps, the stocktaking exercise also sought to identify

11 Solar Drip Irrigation Project - Benin, West Africa. Available at http://www.youtube.com/watch?v=RTtBEbf-NRs

replicable good practice DRM. This section outlines the core themes of good practice DRM, illustrated with some examples, as shared by participants in the stocktaking.

Considering the multifaceted nature of DRM, it is important first of all to note that good practice greatly depends on specific local contexts. Further, Kyoto University has recently studied the question of what constitutes 'good practice' and the preliminary research results from India, Bangladesh and Vietnam were presented at the Forum. For example, the research has been investigating how good practice relates to sustainability: Can a specific practice be considered 'good' if it is only short-term? In the opinion of Rajib Shaw, Associate Professor at the Graduate School of Global Environmental Studies at Kyoto University, good practice should be considered as a long-term adaptive learning process rather than as a fixed set of rules. Another angle of investigation sees good practice as something that acts as or supports a link among community, local, subnational and national levels. In the context of Gujarat, India, consideration of what constitutes good practice DRM thus includes the term 'SETU', which means 'bridge'.

Salvano Briceno, Former Director, UNISDR, offers another perspective about what constitutes good practice DRM:

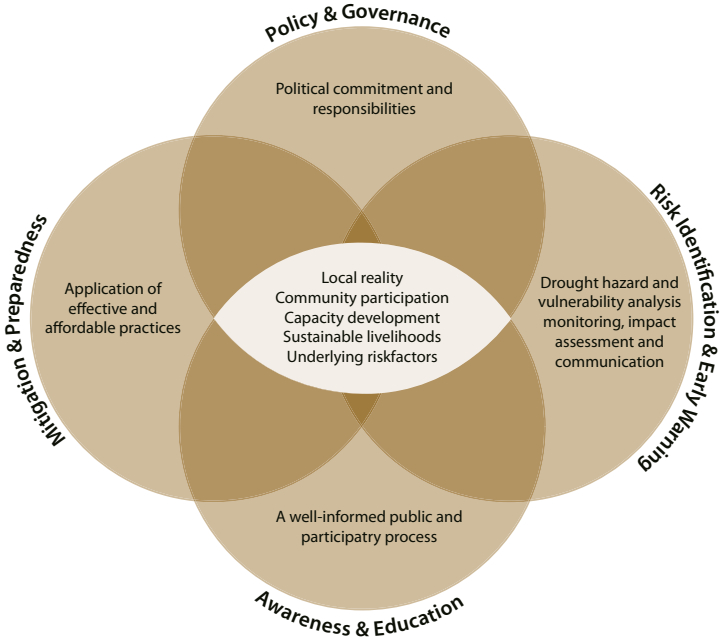
"[Good practice DRM] starts with awareness-raising of high-level authorities (usually head of state or government provided they are visionary leaders capable of catalysing cultural changes), followed by intensive public awareness campaigns (mainly through the media), development of multi-hazard risk reduction strategies, policies, programmes and activities, involving community-based organizations and in which, awareness, education and training are high priority activities."

It is clear from these research results and the general views of participants in the stocktaking exercise that the individual examples and practices described in this section should not be considered in isolation. Instead, a package of integrated human, social, natural, financial and physical practices within policy, legal and institutional frameworks is necessary to promote DRM effectively. This is referred to as an 'integrated development approach'. Figure 9 illustrates the different elements of a drought risk reduction framework.

Additionally, the examples and practices described in this section are simply indicative of the issues highlighted by participants in the stocktaking exercise itself. There are, of course, many other DRM examples in Africa, Asia and elsewhere. Indeed, the forerunner to this exercise, 3rd ADAF, also compiled a list of 'Key information, good practices and challenges', which is included in UNISDR (2009).[12] A function of AADP itself would be to collate these and other experiences in an accessible format for interested users.

12 Annex 4 'Key information, good practices and challenges to illustrate the proposed drought risk reduction framework, results of the 3rd African Drought Adaptation Forum, 17-19 September 2008, Addis Ababa, Ethiopia' in UNISDR (2009).

Figure 9: Proposed Main Elements for Drought Risk Reduction Framework



Source: UNISDR (2009)

3.3.2 Examples of Good Practice Drought Risk Management

The most dominant theme among successful DRM practices that the stocktaking exercise noted is that of a community-level basis for action. With this is mind, some key issues raised were:

- A need for an integrated development approach centred around sustainable land/ water resource management practices (i.e., not a segregated 'drought' project based upon a distinct stand-alone perspective, specialism, or sector)
- The importance of indigenous knowledge (not only as a specific area of importance, but as a thread running throughout all community-based considerations)
- The importance of numerous methods of raising local community awareness about drought-related issues
- The importance of a community-led participatory approach and use of community organization, (e.g., farmers' groups and water user associations), especially in relation to sustainable local natural resource management
- A need for a stronger focus on diversification of livelihoods, including crop and livestock varieties and other income-generating activities

One statement sums up a key finding of the stocktaking exercise, applicable in Africa and Asia, that touches on the main concepts of good practice identified here:

"*Community level initiatives* that are low cost, locally appropriate, technically sound, in sync with the local government and rooted in indigenous knowledge and practices have proved most successful. *Integrated programmes* that address local water resource management, livelihood security, savings, education, health and participatory development planning have been successful in a number of locations and are fairly replicable with the ability to be scaled-up. Unfortunately they remain as isolated pilot projects and are rarely documented, disseminated and advocated in an effective manner. They have only begun to scratch the surface of the policy influencing domain" (Dr. Anshu Sharma, Board Member, SEEDS India, in contribution to the stocktaking survey. Italics added by author.).

The examples of good practice provided in Table 3 have been placed within an HFA-based template so that they will be consistent with the progress and gaps in core areas of DRM outlined in Section 3.2. The Table is also consistent with the layout of findings on good practice in UNISDR (2009). In practice, the allocation of an example to one category that seems most appropriate may not necessarily do justice to its characteristics associated with other categories. It is necessary to point out that this is an indicative list based on the inputs from the participants of the exercise. Examples of good practice, such as these, require to be documented, compiled and widely disseminated to avoid overlapping efforts and to maximize the impacts of DRM initiatives.

Jeff Camkin, Professor, Water Resource Management, at University of Western Australia gives a concluding comment that acts as a rare illustration of DRM that successfully combines community-level actions with an enabling policy and institutional environment:

"The city of Perth managed its way through a major drought in 2001-02 very effectively. This was achieved through a multi-faceted approach of strong political leadership, collaboration between government agencies which traditionally have misaligned or competing objectives, programmes to include the community in finding the solutions (including discussion forums and funding for water saving products and activities), technical investigations and increased funding for water resource management and drought response. The drought that came to Perth and the other capital cities in Australia provided an opportunity to support the community in changing its views and practices relating to water. The political process took notice, then leadership. The challenge now is to ensure that the drought is remembered and that changes are implemented before the next drought in the cycle."

Table 3: Examples of Replicable Good Practice Drought Risk Management

1. DRM policy frameworks and plans

- Development and application of training manuals and events: E.g., the Food and Agriculture Organisation (FAO) of the United Nations has developed a manual on drought management and several training sessions have been organized to foster policy change and to build the capacity of countries to adopt a long-term drought management planning approach.
- Mainstreaming sustainable land management into local development plans: E.g., UNDP DDC has provided the policy and technical support in mainstreaming drylands issues into district development plans and budgetary frameworks in six Cattle Corridor districts in Uganda.
- Development of drought plans at the national, provincial, watershed and community levels: E.g., Turkey's Drought Action Plan sets up provincial drought Commissions to address unique local challenges, needs and priorities effectively and reflect this in national planning process.
- Results-based training-by-doing for policy/strategy development and its implementation.

2. Drought risk assessment and the dissemination of early warning

- Community-led drought monitoring: E.g., Forum for Integrated Resource Management initiative in Namibia promotes community-led participatory monitoring of local climatic, socio-economic and environmental conditions based on a set of indicators identified by the community-based organizations and scientist, such as livestock conditions, fodder availability and rainfall data.[13]
- Integrated climate risk monitoring: E.g., A joint programme between the United Nations Environment Programme, UNDP and FAO, entitled 'Enabling Pastoral Communities to Adapt to Climate Change and to Restore their Rangeland Environments' in the Afar Region of Ethiopia, integrates the policy aspect, capacity-building and environmental restoration to address climate change impacts in dryland areas. This is done by building upon a strong and well-established community-based communication system for early warning and water resource sharing.
- Increased role of media: Mass media can play an important role in disseminating weather and climate information to farmers, farmers' groups and community associations at the local level.
- Utilization of various technologies and techniques: Remote sensing, spatial modelling, underground water management, etc. as part of a people-centred early warning system.[14]

3. DRM awareness raising and knowledge management

- Creation and strengthening of communities of practice: Networks, such as AADP, partnerships and coordination mechanisms facilitate knowledge-sharing and technical cooperation.
- Up- and out-scaling of proven practices: E.g., successful example of multi-year license system for the use of government afforestation forest land pastures by Bedouins during drought years in Israel is increasing shared with and replicated in nearby tribes. Afforestation areas provide more biomass than open, traditional grazing lands and thus, the higher costs incurred during years of average rainfall become a payment or 'insurance' against drought.[15]

13 There is a self-reporting dilemma, as people could report what they think will provide them with the most benefits. Therefore, local data requires verification. See Table 3.4. for more information on formation and strengthening of community organisation to facilitate locally owned and agreed development decisions.

14 It is important to note, however, that remote sensing has its limitations, as it may show green areas, but these could be drought-tolerant species encroaching on agricultural land and thus actually creating water resource stresses, not indicating rainfall and crops.

15 Personal communication, Clara Ariza, Programme Associate, Swiss Agency for Development and Cooperation, in June 2011.

- Use of various technologies in information sharing: E.g., cell phones are increasingly used in Kenya to communicate market conditions (sale prices) before livestock are moved for sale.
- Integration of drought adaptation approaches within agricultural extension services.
- Public Participation Geographic Information System (GIS): E.g., Public Participation GIS exercise to monitor drought helped communities in Ghana realize the impact of their activities and develop indigenous measures to remedy the prevailing situation. GIS is considered to be one of the most effective way to allow communities to visually measure the environmental impact of local practices and, through this, to come up with locally owned solutions.
- Community-to-community visits and training-by-doing: E.g., In-field exchange and peer assistance tools are used widely to improve diversification of livelihoods, crops and livestock, such as introduction of early-maturity, short-duration and drought-tolerant crop varieties and changing cultivation practice.
- Knowledge products: E.g., Environmental update leaflet produced by the Desert Research Foundation of Namibia that provides factual information to parliament (to mitigate poorly informed decision-making).

4. Reducing underlying factors of drought risk

The stocktaking exercise identified how most approaches used to manage drought are a response to drought impacts rather than a means to mitigate and prevent them in the first place. Therefore, good practice in reducing underlying factors of drought risk resonates with a particularly important theme of the stocktaking exercise. Furthermore, the same subjects identified as being of most critical importance as root causes of drought impacts dominate the good practices described (Section 2.2, Table 1). These subjects are environmental degradation, poor water resource management and poor governance. These issues interconnect throughout many examples provided, combined with an emphasis upon the importance of community organization.

- Assessment of demonstrable economic benefits associated with natural resource management: E.g. Community-based natural resource management that protects wildlife for tourism in Namibia has provided economic incentives and thus enjoys the support of the Namibian government. The success of the scheme, though, has been dependent upon international funding and has been bolstered by good rains.
- Application of an enclosure system for natural regeneration in pastoral areas: E.g., The Rehabilitation of Arid Environments Trust, initiated in 1982, has been implementing large-scale participatory communal enclosures in different part of Kenya for sustainable land rehabilitation and utilization for grazing resources, sale of cut grass for fodder or thatching, grass seed, poles and fuelwood, and bee keeping, amongst others.
- Promotion of agroforestry technologies to small-scale farmers.
- Introduction of robust implementable local by-laws on natural resource use: E.g., National legislation frameworks are often not implemented due low local capacity, limited relevance to local contexts, and lack of awareness, etc. The law in Uganda prohibiting the burning of bushes before March each year has worked because offenders are easily identified and receive quick public punishment through local by law mechanisms, which deters others.
- Control of invasive species (alien and indigenous).
- The promotion of the Water 3R approach: E.g., 3R approach, which entails a mix of water retention, recharge and reuse interventions to increase the water buffer in the soil and in the aquifers, is piloted in the Middle East and North Africa region, as an applied concept under IWRM for higher resilience in drought- or flood-prone areas (Steenbergen, Tuinhof and Knoop, 2011).

- Improvement of water retention through the promotion of rainwater harvesting and storage and moisture conservation: E.g., 90 percent of the total rainfall in Bangladesh can be conserved in the paddy fields by constructing and maintaining 15-centimetre levees around the fields. This technique of rainwater harvesting is sufficient to stabilize crop yield in moderate drought scenarios. Construction of 2-meter-deep farm ponds in 5 percent of the land area is sufficient for supplemental irrigation to stabilize rice yield. This is economically viable even if there is a drought once every five years. Traditional practices such as moisture conservation through mulching by straw, water hyacinth, rice husk, etc. are also encouraged.
- Development of infrastructure network that allows the transport of water for essential drinking, domestic and public health functions.
- Water audits: Water audits system has been introduced by the UK Department for International Development in India as a key starting point for diagnosis.
- Formation and strengthening of community organization to facilitate locally owned and agreed development decisions:

Example 1: In Afghanistan, facilitation of Water User Associations is provided to reach agreement on by-laws and rules on water sharing in times of drought. Monitoring, training and coaching are provided to ensure that capacity and support are available to implement decisions. Thus, the focus is on reinforcing local governance.

Example 2: In Namibia, information is shared through 'boundary organizations', such as basin management committees or the highly regarded Forum for Integrated Resource Management, so that people can understand each other.

Example 3: Trans-Nzoia Socio-economic Network (TSN) is a grassroots organization of smallholders in Kenya. Hundreds of TSN members strive to venture into specialized high-value horticulture so that they can realize more returns from small plots of land while at the same time conserving the environment. They are also striving to be less dependent upon the vagaries of the weather. TSN members are considering coordinated production systems and the cooperative marketing of agricultural produce. Some members have already put in place rudimentary water harvesting and distribution equipment, others have dug irrigation furrows close to rivers and boreholes and still others are entering alternative farming like mushroom cultivation. They are farming at the recommended distance away from rivers, planting trees in water catchments and practising agro-forestry to meet their wood demands; encroachment in protected and reserved areas is consequently decreasing. Further, they are making more money to meet their needs. Up-scaling and expansion through more investment and capacity-building are now needed. The smallholders need infrastructure (water harvesting, drawing and irrigation systems), micro (on-farm) agro-processing all the way to bulk storage, transport facilities and appropriate credit facilities to initiate, sustain and expand their ventures.

- Safety net transfers: E.g., Government and Multi-Donor Productive Safety Net Programme in Ethiopia has helped build community assets like watershed management, small-scale irrigation, water harvesting at the household level, small roads and household assets.

5. Drought preparedness and early response

- Weather-indexed insurance schemes.
- Social welfare system: E.g., in Australia, a social welfare system that provides relief and support from local government, civil society and the national government partially mitigates the human, social and economic impacts of drought.
- Cash-for-work schemes: E.g., Drought response and recovery supports often inject cash through cash-for-work schemes on a large scale. There must also be swift destocking before cattle die or lose their value.

4

Conclusions

4.1 Opportunities for Africa-Asia Drought Risk Management Peer Assistance

In light of identified drought impacts and their causes and trends, this section draws together the analysis of the status of DRM in Africa and Asia that provided fresh insight into gaps in policy frameworks and plans, drought risk assessment, the dissemination of early warning and awareness and knowledge, on the one hand and existing good practices, on the other. In doing so, it shows where opportunities for DRM peer assistance could most usefully be applied.

In broad terms, the general functions of AADP, as recommended by the Forum, can involve:

- Mapping out DRM information and data (e.g., practitioners, organizations, projects, policy frameworks, research results, documentations, etc.) and integrating them into a drought database
- Identifying, collecting, analysing, documenting (translating, when necessary) and disseminating DRM-related lessons, innovative or promising practices and case studies. These products can be utilized as advocacy and public awareness-raising tools.
- Promoting interregional exchange of similar experiences and transfer of proven tools and approaches across Africa and Asia

More specifically, the stocktaking exercise indicated areas of need that warrant special focus. Emphasis here was on community-based DRM, where there has been considerable progress in reducing drought risks and impacts in some areas, but much less progress in scaling this up to influence national policy and national legal and institutional frameworks.

The stocktaking exercise also suggests that local-level DRM initiatives rarely have the necessary capabilities and commitment for knowledge-sharing. Furthermore, investment in knowledge-sharing is generally very low.

The stocktaking exercise identified these areas as opportunities for AADP to add value:

- Raising awareness of the value of indigenous knowledge
- Promoting a multifaceted approach to deal with drivers of drought risk
- Expanding awareness of the economic impact of drought and how this influences political decision-making
- Investigating the integration into early warning systems of non-climatic indicators of drought
- Keeping pace with the emergence of new drought risk issues and trends

These are presented below.

4.1.1 Raising Awareness of the Value of Indigenous Knowledge

The stocktaking exercise strongly emphasized that there must be a firm focus on identifying, analysing and documenting indigenous knowledge and techniques in particular locations to help raise awareness of their contributions to DRM. This will likely hinge upon sustainable natural resource management and livelihood resilience. Therefore, AADP should further extend its reach to community-based practitioners to identify and extract the indigenous knowledge and locally proven practices more effectively and efficiently. At the same time, there is a need to increase the awareness and capacity of high-level decision-makers with respect to the potential of community-based development processes and approaches in DRM.

It is disappointing that this particular call for action is far from new. Integrating top-down and bottom-up approaches has rarely been practised, despite the disaster risk reduction community promoting it over the past few decades. The Forum considered the reasons for this. Some of the challenges include:

- Local knowledge about drought is mostly invisible. Knowledge is largely passed down orally and rarely recorded, especially beyond local languages. The identification and recognition of local practice require participatory approaches, which presents its own challenges. Therefore, potentially highly replicable experiences are not easily accessible, even to interested practitioners outside these communities or countries. This impedes testing and validation as well as the dissemination of local practices.
- The external value given to local knowledge compared with scientific 'expert' data is very low. Local knowledge may be considered superstitious (e.g., dragon flies flying high or low as indicators of pending weather systems) and thus all experiences dismissed.
- To counter this challenge, it might be better to engage local people rather than to 'accept' local knowledge per se. In this regard, though, low governance is a further impediment

to the identification, validation and dissemination of indigenous knowledge applied to overcome drought-related problems. Therefore, existing practices do not become institutionalized.

The role of AADP could be to focus on awareness around these issues. Evidence of the value of indigenous knowledge needs to be collated, translated and widely deployed. The experience of the community-based disaster management in Bangladesh through the Comprehensive Disaster Management Programme by the Disaster Management and Relief Division, Ministry of Food and Disaster Management, was cited as a positive example of a system in which there has been headway.

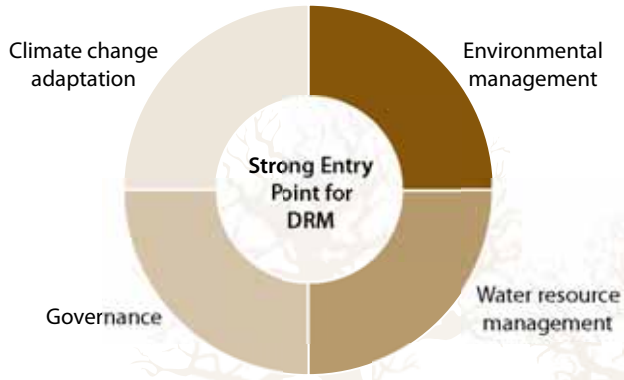
4.1.2 Promotion of a Multifaceted Approach to Deal with Drivers of Drought Risk

The main approaches to DRM appear to reflect a response to the dominant drought impacts rather than their main causes.

Almost all respondents felt that climate change and variability will result in a trend toward increasing impacts of drought, especially because of a general lack of commitment to and emphasis on sustainably and comprehensively dealing with the existing risk situation. However, climate change is presently not considered to be the most significant cause of drought impact. Instead, environmental degradation, poor water resource management and poor governance are the greatest concerns.

But with increasing attention focused upon climate change and variability (it is already a widely adopted approach to deal with drought and government respondents cite it as the main risk driver), there is an argument for strengthening links between environmental management, water resource management, governance and adaptation to climate change. The stocktaking exercise suggests that applying a combination of these approaches to a place in particular danger of drought would be a good entry point for leveraging positive change.

Figure 10: Approach to Drought Risk Management



AADP could focus upon improving understanding and application of examples where multifaceted DRM approaches are deployed in ways that tackle the causes of drought risk.

4.1.3 Expanding Awareness of the Economic Impact of Drought and How This Influences Political Decision-Making

Frequently, including in this stocktaking exercise, there is a feeling that economic impacts of drought cause political anxiety. Therefore, it is surmised that an economic argument for preventive actions will be warmly received and will thus trigger shifts in policy and practice. Box 4 provides an example of such an economic analysis of drought impacts in China.

Box 4: China's Crop Losses Due to Climate Variability and Change

Between 2004 and 2007, Chinese farmers lost nearly US$8 billion of crops to drought. In the drought-prone north and north-east, annual crop losses to drought by 2030 could be 6 to 7 percent of the total yield due to expected decreases in precipitation during critical months of the growing season. In such a scenario, annual drought losses could be as high as US$9 billion in north-eastern China alone (McKinsey & Company, 2009).

However, it is intriguing to note that, although participants in the stocktaking exercise thought that drought had high (in Africa) or quite high (in Asia) national economic implications, DRM is still not a high-level political concern. Indeed, lack of political will was considered the most significant barrier to progress.

AADP can help to include economic considerations into DRM planning and implementation, while also exploring the juxtaposition of economic arguments and political apathy.

4.1.4 Investigating the Integration into Early Warning Systems of Non-climatic Indicators of Drought

The stocktaking exercise drew attention to the lack of progress in Africa and Asia toward increasing the effectiveness of EWSs and their ability to trigger remedial and timely action to avert or to mitigate drought losses. In light of this, the Forum asked whether existing EWSs are monitoring all of the right things. This was justified in light of on-the-ground examples of various non-climatic events, especially political ones, that are more likely to dictate actions and are therefore undermining climate-based EWSs.

AADP can consider how non-climatic indicators can be integrated with existing EWS to render them more pragmatic and better suited to overcome the political impediments they face.

4.1.5 Keeping Pace with the Emergence of New Drought Risk Issues and Trends

Socio-economic and environmental trends will produce new drought risks in Africa and Asia. Unless arrested, population growth, increases in water demand (e.g., due to industrialization and growth in agribusiness), increased environmental degradation, climate variability and climate change will influence risk and how meteorological drought leads to impacts.

AADP is a suitable platform to capture emerging issues regarding drought. These can be shared, debated and acted upon most efficiently in light of broad experience. Some emerging issues include:

- Urban drought, where perceptions and issues are very different from rural areas
- New or deepening drought hotspots, such as those in monsoon and delta regions of Asia

4.2 Final Remarks

The stocktaking exercise was a rare opportunity to hear from a diverse set of practitioners with considerable experience working in drought-related fields across Africa, Asia and elsewhere. Overall, it is clear that there are many important similarities between DRM issues between the regions, which open up areas where enhanced knowledge-sharing will be effective. Furthermore, the stocktaking exercise was able to highlight specific themes of good practice that the work of AADP can emphasize in order to strengthen DRM in the most strategic areas.

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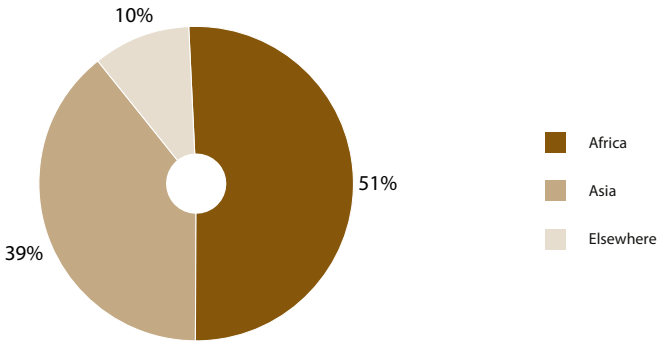
Annex A – Survey Response

Several drought risk management experts provided feedback on a draft survey questionnaire, enabling its refinement ahead of wider circulation. The final online questionnaire (Annex B) was open for response during May and June 2011.

The survey was kindly distributed to the members of the African Drought Risk and Development Network (AADP), the Asian University Network of Environment and Disaster Risk Management and the Asian Disaster Reduction and Response Network. It was promoted through the AADP newsletter, the Climate-L Digest and the Adaptation Learning Mechanism – including its Twitter Programme.

Of the over 400 respondents, 324 completed the survey in its entirety with in-depth responses, representing about 3,000 years of drought-related experience across Africa, Asia and elsewhere. The proportion of respondents across these categories is illustrated in Figure A-1.

Figure A-1: Regional Response



The stocktaking exercise also benefited from a wide range of views, stemming from different fields of expertise and organizational type. These are illustrated in Figures A-2 and A-3.

Aside from the named disciplines, the fields of expertise listed in the 'other' category are typically sub-categories of the listed fields or a combination of them. However, for a small number of respondents, alternative fields of expertise include economics, community development, knowledge management, information and statistics, law, youth development and governance.

Other types of organization are consultants, multilateral banks, students, networks, intergovernmental institutions, unions and community-based organizations.

Figure A-2: Fields of Expertise

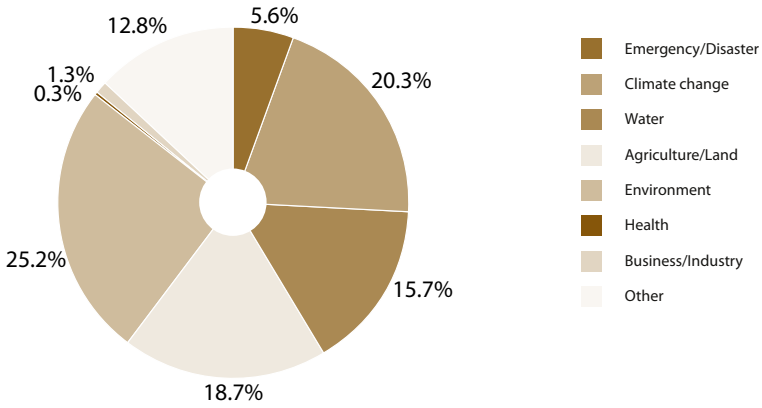
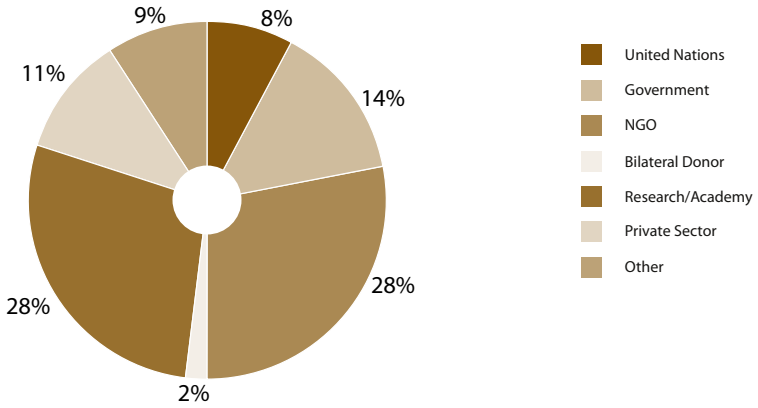


Figure A–3: Type of Organization



Survey Data Analysis

The responses were disaggregated to determine and compare the views of African and Asian respondents. Other opinions (normally representing an international organization and perspective) were also examined.

Key issues that emerged when comparing results between Africa and Asia were analysed in more depth. For example, outlying opinions were sought, open comments made by specific respondents were considered and results were disaggregated in different ways, such as by organization type. This approach aimed to glean deeper insight to strengthen or supplement initial basic observations and findings.

Furthermore, the initial analysis of the survey data was presented at the First Africa-Asia Drought Adaptation Forum and participants' interpretation of the data was sought through group work. This was directed to areas where opinions were contradictory or on a theme that appeared to be given special significance.

Not all countries were represented directly in the stocktaking exercise, but the chances of this diminishing the relevance of findings was reduced through the inputs of global, regional and subregional experts.

Raw survey data is available on request from the United Nations Development Programme Drylands development Centre.

Annex B – Survey Questionnaire

AFRICA - ASIA DROUGHT RISK MANAGEMENT PEER ASSISTANCE

Section 1 of 3: Personal Profile

This questionnaire is being completed by many people across Africa and Asia who have experience working in the context of drought. Expertise will probably vary a lot. In particular everyone will have their own geographical focus. Please indicate this focus below and then answer the survey questions with it in mind. This will enable us to understand the context surrounding your responses.
Once you have completed this first section, press the "NEXT" button at the bottom of the page.

1. PLEASE PROVIDE THE FOLLOWING DETAILS:

Name

Organisation

Title

Email address

Number of years of drought experience

2. IS YOUR WORK FOCUSED IN AFRICA, ASIA OR ELSEWHERE?

This will help us to compare experiences between the two regions.

- ○ Africa
- ○ Asia
- ○ Elsewhere

Please provide details of the geographical focus of your work (e.g. which sub-region, country or local area)

3. WHAT IS YOUR MAIN FIELD OF EXPERTISE?

- ○ Emergency/ Disaster
- ○ Environment
- ○ Climate change
- ○ Health
- ○ Water
- ○ Business/ Industry
- ○ Agriculture/ Land
- ○ Other (please specify)

4. WHAT TYPE OF ORGANISATION DO YOU WORK FOR?

- ○ UN
- ○ Bi-lateral donor
- ○ Government
- ○ Research/ academic
- ○ NGO
- ○ Private sector
- ○ Other (please specify)

Section 2 of 3: Drought Impacts and Approaches

This section will help paint a picture of the impacts drought is having and how this is being dealt with.
Once you have completed this section, press the "NEXT" button at the bottom of the page.

5. PLEASE INDICATE THE SIGNIFICANCE OF THE FOLLOWING DROUGHT IMPACTS IN YOUR WORK:

This will provide us with details on the current impacts drought is having across Africa and Asia and the changes in impacts that are anticipated.

	LOW: It is unusual/ unlikely for this impact to occur	MEDIUM: Impact is limited in scale and recovery is swift	HIGH: Impact is widespread and long lasting	VERY HIGH: Impact is very severe, widespread and has long lasting implications
Fire	○	○	○	○
Decline in crop yields/ food insecurity	○	○	○	○
Livestock losses	○	○	○	○
Forced sale of household assets	○	○	○	○
Forced sale of land	○	○	○	○
Increase in crime	○	○	○	○
Depletion in water for human use (e.g. drinking, cooking, cleaning)	○	○	○	○
Decline in health (e.g. through malnutrition or lack or safe drinking water)	○	○	○	○
Displacement/ Migration	○	○	○	○
Civil unrest/ Conflict	○	○	○	○
Famine	○	○	○	○
Depletion in water for use in business/ industry (e.g. hydropower)	○	○	○	○
National level economic impact	○	○	○	○

Have trends become better or worse, and why? And how do you anticipate drought impacts will change over the next 10-20 years, and why?

AFRICA - ASIA DROUGHT RISK MANAGEMENT PEER ASSISTANCE

6. FROM WHAT YOU SEE IN YOUR WORK, HOW IS DROUGHT DEALT WITH?

Drought can be dealt with in lots of different ways, as reflected by the choices given below. To answer this question it may be helpful to think about what type of people and organisations are leading work on drought in your country/ region. If necessary, you may select up to 3 boxes. By responding to this question you will help us establish which are the most common approaches.

- ☐ As a disaster/ emergency/ humanitarian concern
- ☐ In relation to climate change and variability
- ☐ As a food security issue
- ☐ As a water resource issue
- ☐ About land degradation
- ☐ Predominantly about local governance (e.g. supporting community participation in decision making)
- ☐ In terms of its implications on business/ industry (e.g. hydropower)

Are there any other approaches? Do you have any reflections on approaches to drought that you would like to share?

Section 3 of 3: Conditions for Successful Drought Risk Management

This final section helps identify where capacity gaps exist and capacity building support is most acutely needed. Once you have completed this section, press the "DONE" button at the bottom of the page.

7. TO WHAT DEGREE ARE POLICY FRAMEWORKS AND PLANS SUPPORTING DROUGHT RISK MANAGEMENT?

Effective drought risk management that deals with deep rooted problems requires broad support from national to local levels. A key area is its integration into development policy and plans. Without this it will be hard for society to do much more than react to losses as they occur. So this set of questions is important because it helps to gather information on how appropriate key aspects of policy and planning are in relation to drought risk management needs.

	NO: This is not represented at all	OCCASSIONALLY: In some aspects this is included, but it is ad hoc and does not really influence practice	OFTEN: In many ways this is genuinely supported and results in some practical reductions in drought impacts	COMPLETELY: This is systematically incorporated in policy and planning, clearly helping to establish a culture of drought prevention
Do they emphasize prevention of drought impacts over response?	○	○	○	○
Are they dealing with new drought risks (e.g. because of climate change)?	○	○	○	○
Are they supportive of long-term investment to overcome deep rooted problems?	○	○	○	○
Encouraging of public and NGO participation?	○	○	○	○
Facilitating coordination among multiple government and non-government stakeholders?	○	○	○	○
Based on real local issues?	○	○	○	○

Please provide comments on the above and include any other key issues you feel are important

AFRICA - ASIA DROUGHT RISK MANAGEMENT PEER ASSISTANCE

8. HOW EFFECTIVE IS DROUGHT RISK ASSESSMENT AND THE DISSEMINATION OF EARLY WARNING?

An assessment of risk is the basis for decision-making. If we do not know what the risk is then it is not possible to manage and reduce it. Drought risk is more than a weather issue. It is also created by the degree with which people, communities, infrastructure, the environment and the economy can deal with this.

	VERY POORLY: Practically nothing happens	POORLY: Only very few examples can be found and it is not possible to say if these indicate what would happen in the future	WELL: Many examples exist and there is confidence that this will continue and improve	VERY WELL: The systems and processes are well established and highly regarded
How effectively does a drought warning generate funding that can be used to avoid losses?	○	○	○	○
How well is an identified threat of drought communicated to vulnerable communities?	○	○	○	○
How well does this lead to local action that helps reduce any impacts?	○	○	○	○

Please explain your answers and provide any further reflections on this topic

9. TO WHAT DEGREE IS DROUGHT AWARENESS AND KNOWLEDGE SHARED?

The Network seeks to strengthen knowledge sharing on drought. Indeed by answering this questionnaire you are contributing to an improvement in the exchange of information on this subject.

○ NEVER

○ RARELY: Not very often and only among a select few people

○ OFTEN: Good practice, new issues and other important information on drought is widely disseminated through established institutions and networks - including linking scientific information with traditional, local knowledge

○ ALL THE TIME: There is open dialogue and sharing through well established institutions and processes.

What is hindering the sharing of knowledge across national and regional boundaries?

10. WHAT ARE THE ROOT CAUSES BEHIND THE IMPACT OF DROUGHT IN YOUR COUNTRY/ REGION?

Drought impacts stem from a combination of factors. An increase in rainfall variability is one aspect, but how this affects communities and nations depends upon how well people, the economy and the environment can cope. There are many issues that undermine their abilities to withstand a change in water availability. It is appreciated that poverty itself is the major factor in risk, and so for this reason it is not referred to below as a single issue. By answering this question you will help us identify what the deep rooted problems are that drive and sustain drought risk, and how they may change in the future. Try and ensure that your response reflects a sense of prioritisation among the causes of risk rather than marking all as very important.

	LEAST IMPORTANT: Compared with the others, this is not a major issue of concern	SOME IMPORTANCE: Compared with the others, this issue is relatively important	VERY IMPORTANT: Compared with the others, this issue has widespread significance for causing drought losses	MOST IMPORTANT: Compared with the others, this issue is a/the fundamental, deep-rooted problem
Poor health limiting household productivity (e.g. HIV/AIDS)	○	○	○	○
Lack of access by communities to information on how to reduce drought impacts	○	○	○	○
Detrimental cultural practices (e.g. over-grazing)	○	○	○	○
Social inequalities (e.g. between the rich and poor or between men and women)	○	○	○	○
Poor water resource management	○	○	○	○
Environmental degradation (e.g. loss of topsoil, deforestation)	○	○	○	○
Poor governance (e.g. the ability of the vulnerable to influence government decision-making)	○	○	○	○
Population growth pressures on natural resources	○	○	○	○
Climate change	○	○	○	○
Conflict/ Insecurity	○	○	○	○

Have trends become better or worse, and why? And how do you anticipate the root causes of drought impacts changing over the next 10-20 years, and why?

11. WHAT ARE THE BARRIERS TO ADDRESSING THE ROOT CAUSES OF DROUGHT IMPACTS IN YOUR COUNTRY/ REGION?

In the above question you suggested what the main root causes are that lead to losses experienced on account of drought. Here we are asking what it is that is preventing or hindering work that tackles these issues. Answer this question in relation to the root cause that you feel is most important.

	LEAST IMPORTANT: Compared with the others, this is not a major issue of concern	SOME IMPORTANCE: Compared with the others, this issue is relatively important	VERY IMPORTANT: Compared with the others, this issue has widespread significance for causing drought losses	MOST IMPORTANT: Compared with the others, this issue is a/the fundamental, deep-rooted problem
Lack of technical capacity at the local level	○	○	○	○
Lack of technical capacity at the national level	○	○	○	○
Lack of political will	○	○	○	○
Lack of funding	○	○	○	○
Lack of local awareness	○	○	○	○
Other priorities	○	○	○	○

What other barriers exist? Do you have an example of how a barrier has been removed?

12. IN YOUR WORK WHAT HAS BEEN THE MOST EFFECTIVE APPROACH TO MANAGE DROUGHT, AND COULD IT BE REPLICATED IN A DIFFERENT CONTEXT? WHY?

These may not be innovative or new ideas. Instead they may be very well established and well known.

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