Droughts: The impact of semantics and perceptions

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Abstract

Global environmental change coupled with increased demand for food and competition for diminishing water places the issue of disaster risk management high on the global political agenda. Drought is one of the most complex natural hazards, affecting natural resources and human development recurrently. Drought affects agricultural production globally, triggering significant food and health insecurity and habitat loss through land degradation and desertification. While the consequences of droughts can usually be predicted, preventive action is frequently absent or insufficient to prevent serious impacts in many regions of the world. We believe that lack of a common understanding of what drought is stands in the way of cohesive anti-drought action. This paper examines drought definitions emerging from influential scholarship, practitioners’ discourse and multilateral policy processes that emphasise diverging aspects of the phenomena of dry periods, including the source, duration, spatial extent, impact and affected stakeholders. This paper begins by examining the concepts of hazard and disaster. It then explores the various perceptions associated with drought and the problems posed by inconsistency in definitions. It concludes that a common conceptual understanding of drought is essential for effective action to address the growing need for reliable food supply, poverty alleviation and increased agricultural productivity globally.

Keywords: Disasters; Drought; Hazard; Perceptions; Risk

1. Introduction

Drought is a temporary, recurring meteorological event, which originates from the lack of precipitation and is a typical feature of any climate. It manifests itself through lack of water availability for humans, plants and animals. Drought can be distinguished from other hazards in that its onset is often much slower and more difficult to detect while the effects can last longer, and damages can be widespread and cause significant economic losses, particularly in agriculture. In certain cases, drought can lead to famine and the subsequent plethora of social and health crises. It is not possible to avoid...
droughts, but their adverse impacts can be avoided or mitigated, perhaps even more effectively than the impacts of other natural hazards. The latter is partly because of the slow onset of droughts, and partly due to the benefits generated by water management and storage. However, the effectiveness of drought mitigation depends to a great extent on how extensively droughts are understood and defined and how well drought characteristics are quantified.

Due to the differences in drought manifestation in different regions, there cannot and, probably, should not be a universal quantitative definition of a drought. This means that geographically there will always be, for example, different numerical thresholds of river flow and precipitation, below which a situation can be considered a drought. However, achieving a common conceptual understanding of drought is not only possible, but also necessary. Failing this leads to problems with definition of a drought for a specific area in quantitative terms as well, to lack of decisions and/or to inappropriate actions on the part of managers and policy makers to address drought-related issues, and to unjustified blaming of droughts for ‘everything’. The experience of the authors in many developing countries shows that drought-related terminology and perceptions are often unclear, misused and thus inconsistent in the minds of decision-makers which, in turn, adversely impact drought policies and actions. Also, even scientists who deal with different aspects of drought research and management often confuse ‘drought’ with ‘non-drought’ issues. This is despite the significant amount of literature which has been published—and recurrently cited—on this topic over the last three decades (e.g. Dracup et al., 1980; Wilhite & Glantz, 1985; Werick & Whipple, 1994).

The complexity of a drought as a climatic event is certainly the first source of this confusion. In particular, the repeated confounding of ‘drought’ as a hazard with drought impacts lies at the heart of this confusion. Thus, the term ‘drought’ is frequently used to refer to adverse impacts of the lack of rainfall, rather than to the lack of rainfall as a meteorological event—which may or may not have adverse consequences depending on how sensitive the ecosystems and populations in question are to such an event. The multifaceted and multisectoral nature of drought impacts is most likely the second source of the confusion. The multidisciplinary approach to drought research and management and associated lack of cohesion between different disciplines must certainly be the third. Biased interpretations of drought for gains by various groups or sectors—particularly in a political context—should also not to be forgotten, as they represent a real challenge to establishing a common conceptual understanding. Understandings of drought vary to the extent that a two-week intermission in rainfall during a rainy season is perceived as a drought by some and as ‘normal’ by others. Local climate and the impacts of the lack of rain may be factors that influence interpretation, rather than the meteorological phenomenon itself. There seems to be a very weak—if any—connection between the existing quantitative measures of drought extremity, usually expressed in terms of various drought indices (e.g. http://www.drought.unl.edu/whatis/indices.htm; Smakhtin & Hughes, 2004; Tate & Gustard, 2000) developed by climate or water researchers, and the actual knowledge of those by many planners, let alone their application in policies.

This paper attempts to re-visit the existing drought definitions and perceptions at different levels of society—from policy makers to farmers—to critically analyse some commonly repeated statements about droughts and to examine the ways of improving the conceptual understanding of droughts.

2. The semantics of disasters

Perceptions of drought are inherently linked to perceptions of disasters, and thus related to a long-ongoing debate surrounding their conceptualisation and related terminology. The words ‘hazard”,

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The text continues with further discussion on the semantics of disasters, the complexity of drought definitions, and the challenges in establishing a common conceptual understanding.
‘disaster’ and ‘risk’ are frequently confused both in the academic and mainstream literature. Hazard is frequently understood as the physical event, which is being potentially damaging to society, whereas risk is the probability of its harmful consequences. Disaster results from ‘the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk’ (ISDR, 2005). It is important to recognize the inherent threat that is implied by the term ‘hazard’: an event is only a hazard if it can cause harm. In reviewing recent literature on hazards management, White et al. (2001) discover a shift in emphasis: discussions on hazard now more frequently use the term ‘disaster’. Handmer (2003) underscores that, in the earlier research, ‘hazard’ was used to refer to the overall problem, whereas the growing discourse on global environmental change uses ‘hazard’ to refer to the geophysical phenomenon and ‘risk’ to refer to the overall problem. Risk in engineering terms is the probability that the event of a certain magnitude (e.g. drought or flood of a 10-year return period) will occur during a specified period (e.g. the design life of a structure like a bridge or dam). Sarewitz et al. (2003) distinguish between two types of risk: the risk of an event occurring, and the ‘outcome risk’, which implies an estimation of the negative impact of an event. The latter is a clear example of additional confusion, as an ‘outcome risk’ is simply a reference to possible magnitude of the adverse impacts.

Vulnerability is a relative concept that is becoming used more frequently in the context of natural resource management and poverty. As with the related terms of risk and hazard, the focus of vulnerability also varies among different disciplines. In a socio-anthropological context, vulnerability encapsulates human susceptibility to harm from a specified hazard, and is mostly used when referring to groups in society who are more prone to being adversely affected by a particular event than others (Wisner et al., 2004). However, in water resources engineering, vulnerability can be viewed as the likely magnitude of a system failure, if one occurs (Hashimoto et al., 1982). The magnitude of a failure could be approximated by a rainfall or river flow deficit below some prescribed or predetermined threshold, like long-term mean flow (Peters et al., 2005), which again is a purely hydrometeorological characteristic.

When considering vulnerability in a social context, many factors can determine why one individual or group is more vulnerable to an event. Some of the social factors that determine vulnerability to drought are level of development, population density and characteristics, growth and distribution, demands on water and other natural resources, government policies (sustainable versus non-sustainable resource management), technological changes or political system. Poverty on its own, for example, is not an adequate indicator of vulnerability (Chambers, 1989) because factors such as caste, race, age, gender, social status, religion and education also contribute to determining how vulnerable people are to a given hazard (Wisner et al., 2004). Some of these factors can be addressed through policy—for example, education can be improved—whereas others are culturally and socially determined (e.g. gender, caste, etc.). A recent example is the differential status of men and women in Niger that was identified as the main cause of the 2005 famine because women were not entitled entry to store rooms where surplus grains are kept while men are away seeking employment (Plaut, 2005).

Despite an effort to clarify the semantics, understanding and perceptions of risk, hazard, disaster and vulnerability remain divergent, which in turn affects their definitions. Additional confusion arises when words used to describe natural hazards (i.e. ‘flood’, ‘hurricane’) are tacitly associated with disasters, rather than with the natural meteorological, hydrological and geological events. This is very much the case for drought, which conjures images of emaciated people and livestock, despite that famine, or even hunger, is not necessarily a consequence of a drought. Indeed, droughts are often portrayed as the trigger
of famines, although this direct linkage has been disputed and it is generally accepted that a range of other factors also play a role in the development of a famine, including production, prices, consumption, assets and coping capacity, etc. (Stephen & Downing, 2001). Famines are equally as quickly triggered by political instability, war and other oppressive policies as by lack of rainfall.

However, the reason that hazards interest and concern us is because of their potentially damaging effect. Therefore, the risk posed by drought is dependent on the stakeholders’ vulnerability to it as well as on the characteristics of the hazard (meteorological drought), which may include its probability of occurrence, magnitude, duration and geographical extent or a combination thereof. The risk is thus frequently conceptualised by the relationship: \( \text{Risk} = \text{Hazard} \times \text{Vulnerability} \) (e.g. Wisner et al., 2004). It can be reduced if divided by the adaptive capacity (or resilience), which are determined by the extent to which a society is able to protect itself from the potential damages of the hazard. Adaptive capacity is not a direct opposite of vulnerability because societies or individuals can be vulnerable to a certain hazard but take preparatory action or have a plan of action during the event that will reduce the risk, without directly reducing their vulnerability.

Because mitigating the impacts of disasters through short-lived and asset-exhausting activities associated with disaster relief is considered to counteract sustainable development (DfID (Department for International Development), 2004; UNDP (UN Development Programme), 2004), emphasis is instead placed on preparatory and preventive action. However, such action can hardly have any impact on the dynamics of a (meteorological) drought, and therefore it is generally agreed that effective responses must focus on reducing vulnerability—hence our view that droughts cannot be avoided but their potentially adverse impacts can be reduced. On the other hand, if the hazard is not properly defined, for example if each temporary dry spell is identified as a drought, action to reduce the risk may be misdirected and, at worst, maladaptive to the situation. The latter can lead to the increase of vulnerability in the long term because of unnecessary asset depletion or inappropriate mitigation measures. An extreme example of this is requests for food aid to combat famine that is perceived as triggered by drought, where the famines are actually caused by political issues (as evidenced in recent famines in Sudan and West Africa (FEWS, 2005a, b)). Ultimately, dependency on food aid will decay not only coping capacity but dignity and perceptions of self-sufficiency, as can be seen in Ethiopia (Schipper, 2005).

The social construction of disasters following a hazard demonstrates a self-perceived vulnerability, whereby the affected groups may not recognise their own capacities to cope with the impacts, and thereby immediately request assistance. To this end, social construction of disasters can be lucrative. Identifying oneself as a victim is clearly more beneficial when the situation previous to the disaster was not optimal, and the possibility of international assistance looms. Hewitt (1997) stresses that the concept of vulnerability stimulates a sense of weakness and passivity in society. Heathcote (1985) suggests that victims and governments of hazard events ‘may be tempted to exaggerate their losses in order to gain public sympathy and official relief’. Interpreting requests for assistance as such could result in a worse scenario for those affected, but too many requests may lead to a ‘cry wolf’ syndrome. Clarity on the concept of drought is therefore important for combating the social construction of the events and impacts, which will assist in identifying solutions to the problem, including the underlying source of vulnerability.

To some, the UN’s International Decade for Natural Disaster Reduction (IDNDR) was concrete evidence of growing concern among policy makers about risk in the 1980s (Cutter, 1994), whether this was an indication of an increased frequency in extreme hazard events, as might be suggested by some
data (such as data on reported events in EM-DAT)\(^1\) or a rise in vulnerability of societies to these hazards as is suggested by other evidence (IFRC (International Federation of the Red Cross), 2001). The extreme events—hazards of great magnitude—including drought, are expected to have more significant impacts (compared with changes in long-term mean rainfall or temperature) on chronic and transitory food insecurity (FAO (Food & Agriculture Organization of the United Nations), 2005). But while the case may be that the number of natural extreme events has increased in recent decades (at least in some regions of the world), it is unlikely that this is the main reason for an increase in the number of disasters. The very idea of increasing frequency of extremes seems to be lacking empirical evidence despite the intensification of the global water cycle (e.g. see the recent review by Huntington (2006)). The strong existing perception that extremes increase may be partially related to the population growth and the impact of media and communications over the last century\(^2\) (Figure 1). The first means that more people get affected by a disaster of the same magnitude and spatial extent, the second brings the news to the table more promptly than several decades ago. Post (2006) notes how both media and relief agencies benefit from coverage of disaster events through increased donations and greater attention. Finally, and most importantly, even if the frequency of extremes is gradually increasing, it does not mean that the already existing frequency of these events should be ignored and that focus should be placed only on the future extremes, perceived to become more pronounced and frequent due to climate change. If society learns how to deal with existing extremes, the vulnerability to future ones will drop as well.

3. Drought definitions versus perceptions

Drought definitions vary from region to region and frequently depend on dominating perceptions, and the context for which the definition is to be used, i.e. academic study or drought relief plan. As a temporal, recurring event, it should generally be defined relative to some long-term average condition, e.g. precipitation, balance between precipitation and evapotranspiration, etc. This is reflected in most of the general drought definitions, shown in Table 1, given by different authors from various parts of the world, including Australia, Israel, UK, USA and Japan.

These definitions are predominantly vague, do not provide quantitative answers to questions regarding frequency, magnitude or duration of a drought, and are often used by way of introducing scientific papers and reports. At the same time, there is a general commonality between them: they all directly or indirectly refer to a drought as a temporary and recurring natural event and a normal part of climate of all world regions, regardless of how arid or humid they are. These points of departure should help to interpret various drought-related terms and perceptions and to separate drought-related problems and issues from others.

3.1. Droughts and aridity

Natural availability of water resources in any specific region will certainly determine whether droughts are seen as a severe problem or not. One related issue is the lack of distinction between drought
and aridity (or dryness). Aridity is a measure of how dry/wet a region is on average over the long term. It is a permanent climatic characteristic feature of an area. Drought is a deviation from this long-term mean (which is different in different areas). Thus, droughts come and go, but aridity in an area remains. Terms like ‘permanent drought’, often associated with south-west Asia for example, are highly questionable as they deny the temporary nature of a drought. An extreme example is El Salvador that has been declared to be in a ‘permanent state of emergency’ from the perspective of relief and aid needs (Schipper, 2004), a concept that encapsulates an inherent paradox in the understanding of temporary and exceptional (extreme) climatic conditions. On the other hand, it would be accurate to say that, in arid areas, aridity and drought are related, as even a small extension of a normally expected rainless period is

Table 1. Selected general definitions of a drought.

<table>
<thead>
<tr>
<th>Author</th>
<th>Definition</th>
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<tr>
<td>Ben-Zvi (1987)</td>
<td>Drought is a severe shortage in the appearance of natural waters with respect to normal</td>
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<tr>
<td>Beran &amp; Rodier (1985)</td>
<td>The chief characteristic of a drought is a decrease of water availability in a particular period and over a particular area</td>
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<tr>
<td>McMahon &amp; Arenas (1982)</td>
<td>Drought is a period of abnormally dry weather sufficiently prolonged for the lack of precipitation to cause a serious hydrological imbalance and carries connotations of a moisture deficiency with respect to man’s usage of water</td>
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<tr>
<td>Palmer (1965)</td>
<td>Drought is an interval of time, generally of the order of months or years in duration, during which the actual moisture supply at a given place rather consistently falls short of the climatically expected or climatically appropriate moisture supply</td>
</tr>
<tr>
<td>Takeuchi (1974)</td>
<td>Drought is a condition whenever the amount of water which has been expected and relied upon for use in any of man’s activities cannot be met for some reason</td>
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immediately felt. In this context, management measures which should be taken in arid areas to alleviate unreliable water supplies, whether in a drought or not, are similar.

One possible origin of confusion between aridity and droughts relates to the fact that, in arid areas, the intra-annual variability of precipitation is generally higher than in humid ones. In other words, the probability that annual rainfall in any particular year will fall below the long-term mean is higher in arid areas than in humid areas. Figure 2 illustrates this point. Figure 2(a) shows the distribution of mean annual precipitation over the globe, Figure 2(b) indicates the distribution of the coefficient of variation (CV) of the annual precipitation and Figure 2(c) shows the probability that annual rainfall in an area will fall below the threshold of 75% of the long-term mean annual precipitation. The latter threshold is used here simply as an arbitrary one, below which a year can be considered a ‘drought year’. As can be seen from these figures, the areas which are naturally arid or semi-arid (e.g. receiving less rainfall over the long term) also tend to have higher CV of precipitation and, consequently, higher probability of drought occurrence at least in the case of an ‘annual’ drought.

3.2. Droughts versus normal conditions

One issue that appears common in parts of Pakistan and west India (very drought-prone areas, Figure 2(c)) is the perception that a dry period in each year always constitutes a drought. Such periods can, of course, be referred to as ‘annual droughts’, as done in the previous paragraph or in the literature (e.g. Tallaksen & van Lanen, 2005). But, at the same time, they are part of the annual climatic cycle and what matters here is ‘how dry’ and ‘how long’ such periods are. If there are too many droughts in a specific location or if droughts are too frequent, then this definitely points to a problem with quantitative drought definition. The annual ‘dog days’ (canícula) that feature in the rainy period of El Salvador are another example of a dry period that lasts between 2–3 weeks (Majano et al., 2000). This time is expected and not referred to as drought, despite that it is an aberration from the rains that take place from May through August.

Besides the estimation of the long-term mean or median as a reference point for deviations of annual rainfall or flow, it is also necessary to determine a scientifically justified band around this reference. Within this band, the precipitation and/or river flow fluctuations should be considered to be within normal deviation for that area. Beyond this band the weather conditions may be considered abnormal—exceptional—and such conditions should attain certain relief and/or insurance mechanisms (e.g. such exceptional circumstances in Australia are defined as those occurring on average once in 25 years). In other words, drought conditions are more extreme and less frequent than ‘below normal’ conditions. If people, agriculture and industries are adversely affected by normal climatic fluctuations, the problem is not really related to a drought. Instead, this points to a high vulnerability of the population and/or economic sectors to already existing climate variability. Or, in other words, there are significant factors present in the society that have an impact on sensitivity to droughts. Most likely, these will be related to governance, poverty or other similar issues, and will need to be dealt with to resolve many other developmental challenges as well, and not only climate hazards (Schipper & Pelling, 2006). But the bottom line is that, if we are not prepared for existing normal climate fluctuations, how can we possibly deal with real rare, extreme and extended drought events, let alone increasing climate variability associated with climate change? It is important to focus on eliminating the impacts in ‘normal’ dry years completely in the short-term and design strategic measures against the extreme droughts in the long-term.
Fig. 2. Global maps of (a) mean annual precipitation (mm); (b) coefficient of variation of annual precipitation (%) and (c) the probability (%) of the annual precipitation in any year being less than 75% of the long-term mean annual value. Maps are constructed on the basis of simulated monthly precipitation time series of 1960–2000 at spatial resolution of 0.5 × 0.5 degree (source of data: Climatic Research Unit, School of Environmental Sciences, University of East Anglia, Norwich, UK).
3.3. Types of droughts

Dracup et al. (1980) and Wilhite & Glantz (1985) developed a typology of drought, based on four distinct types of drought that they identified, namely meteorological, agricultural, hydrological and socio-economic drought. Some studies further distinguish ‘soil moisture drought’, ‘streamflow drought’, ‘groundwater drought’, ‘water resources drought’, etc. (Peters et al., 2005; Tallaksen & van Lanen, 2005). Meteorological drought is defined as a temporary period of abnormally dry weather. Agricultural drought is understood as precipitation shortage sufficient to adversely affect crop production. Hydrological drought is a period of below-average water content in streams, reservoirs, groundwater aquifers, lakes and soils. These types effectively reflect the perspectives of different sectors on water shortages. The range of drought types from meteorological to socio-economic implies that water scarcity is not the only feature of droughts and that a drought can propagate through the economy and society. While this approach has improved the understanding of drought considerably, particularly in awareness of the extent to which impacts are experienced and the characteristics of drought, it can also be seen to have increased confusion as it has broadened the definition too widely. Similarly, the approach has ignited unquestioning repetition of the typologies in numerous reports and scientific papers without much consideration of the linkages between the definitions and actual drought events. In order for the typologies to be useful, it is necessary to develop them further by placing them in region-specific contexts.

The various drought typologies effectively represent different stages (different extremes) of the same natural and recurring process. The deficiency of rainfall starts a drought. The longer and the more spatially extensive this deficiency is, the more likely other types of droughts will occur as a result. It may be useful to accept for a start that, since every drought event results from the lack of precipitation, every drought is always a meteorological drought no matter how long it lasts. Agricultural drought starts as the duration and intensity of meteorological drought increases and finally leads to hydrological drought, etc.

Socio-economic drought is, however, a special case. Originally it was used to refer to instances when a supply of some commodity (electricity, drinking water, food, fodder, etc.) falls below demand and when this shortage is a result of a weather-related shortfall (see http://drought.unl.edu/whatis/concept.htm). This is a clear definition, the second part of which is very important. But the author’s experience shows that the term ‘socio-economic drought’ is now rather often used in conversations and meetings to refer to any shortage, whether related to climate or not. It is true to say that such ‘drought’ is not necessarily caused by a meteorological or hydrological event. If, due to the deficient precipitation and/or inflow, there is lack of water in a reservoir and it generates less power and, consequently, restrictions on electricity have to be imposed, this does in fact constitute a socio-economic drought (if, as said in the beginning of this subsection, every drought stems from lack of precipitation). If the same happens, for example, due to the failure of equipment, when the reservoir is full or because water is diverted to other users, then there is no drought and this term should not be used, despite that the impacts on the user are the same. Another dimension of the problem is that both supply and demand grow and it is the rate of growth which matters. If the supply rate is less than the rate of the demand, the incidence of the cases when a commodity is lacking will increase. This may or may not constitute a drought. If the slow growth in supply is due to political factors, or poor planning of facilities, a different term should be used to avoid unnecessary confusion, again despite that the impacts are the same.

Some authors (Sainath, 1996; Rathore, 2005) suggest that politically constructed droughts, where failures in the agricultural sector are blamed on drought, are commonplace. However, such blames are exactly the source of confusion—where the issues unrelated to drought (if it is defined in relation to...
meteorology and is freed from other ‘noise’) are brought to drought-related terminology simply because it ‘sounds nice’, or because it is politically ‘useful’.

3.4. Droughts versus the over-exploitation of water resources

Continuous depletion of groundwater tables and/or river flow in many Asian rivers normally occurs due to increasing pressure on water resources from population growth, and associated growth in agriculture and industries. Meteorological droughts can speed up this depletion but it is necessary to differentiate the latter from drought, because constant decline does not match with the temporal nature of a drought event. A term ‘groundwater drought’, for example, is often incorrectly used in western India to actually refer to cases of groundwater over-exploitation, which reveals itself by consistent deepening of groundwater tables under permanently increasing pumping. Similar conditions occur in other parts of the world (Figure 3).

3.5. Droughts in irrigated areas

There is also a perception that droughts do not occur in irrigated areas. However, an irrigated area is nothing else but an area where drought-coping measures (irrigation) have been implemented. The naturally occurring droughts (e.g. defined as above in very general terms as a temporary deviation from the long-term mean rainfall for this area) will still occur. But the impacts of such droughts have been partially or completely alleviated by the water brought in by an inter-basin transfer, by groundwater development or

![Figure 3. Groundwater table elevation beneath Laungchen agro-ecological research station (Chinese Academy of Sciences), Laungchen County, Hebei Province (source: Kendy et al., 2003).](https://iwaponline.com/wp/article-pdf/10/2/131/406481/131.pdf)
by both. Manifestation of droughts in irrigated areas occurs if the duration of the deficient precipitation increases: such areas are most likely to be affected later, when and if a hydrological drought develops.

3.6. Drought versus desertification

These terms are less frequently confused, although the courses of the latter are frequently referred to the former. This has political significance because an international UN convention is devoted to desertification. It relates particularly to desertification in countries ‘experiencing serious drought and/or desertification’ (UN (United Nations), 1994), thus contributing further to the blurred line between drought and desertification. It has to be clear that desertification is a process leading toward changing land into desert. Thus, measures can be enacted to ensure that desertification is reversed. The same cannot be said for (meteorological) drought, which will continue to occur. Also, desertification does not have to come from drought, but can instead be the result of land degradation due to over-grazing and other types of poor land management.

3.7. Scientific definitions and grassroots perceptions

Understanding of drought by scientists and natural resource managers on the one hand and by people on the ground on the other may differ significantly. The latter may be more related to livelihoods and shortages that people experience in everyday life—often regardless of whether or not there is a drought. For example, people of the Rajasthan State in western India distinguish between four kinds of drought: annakal (shortage of food), jalakal (shortage of water), trinakal (shortage of fodder) and trikal (shortage of all three) (Rathore, 2005). Identification of such perceptions is certainly important. But equally important is the identification of the reasons for such shortages and whether they are drought-related or not. Yet another aspect is the linkage between scientifically defined drought severity thresholds (e.g. in meteorological terms) and the grassroots drought perceptions. This could lead to more socially transparent definitions of drought severity thresholds and have a direct impact on drought-related policies and programs.

4. Conclusions

This paper has shown that terminology used in the field of disaster research and management may significantly affect relevant policies and actions. In the case of drought, which is the most complex of hazards, even general understanding of the phenomena differs between different regions and interest groups. Analysis of some common, but often incorrect, perceptions of drought suggests that a lot of confusion related to drought may be sorted out by following a simple rule of thumb—that drought should only be understood as a temporary, recurrent climatic event that is originally caused by lack of rainfall. Situations of insufficient water quantities to meet the needs of ecosystems, agricultural activities and humans may be of various origins. But if these consequences do not exclusively stem from the temporary lack of rainfall, they should not be referred to as ‘drought’. Such terminology issues should be internalized by scientists, natural resource managers and policy makers. The latter should focus on the source and nature of water scarcity to avoid blaming drought for everything and to ensure that solutions address the real problem.
There is a perception that droughts have become more frequent and/or severe in recent times. In reality, the ‘increased frequency of droughts’ may indeed be just a false perception created partially by increased media coverage and heightened interest in disasters by the general public, new communication technologies, an increased number of organisations involved in drought relief, as well as population growth. On the other hand, there is some evidence that *disaster losses* are growing (DfID (Department for International Development), 2004) and reasons for this need to be examined in detail. Scientists, frequently questioned on the linkages between the increased number of (reported) disasters and climate change, find it difficult to provide accurate and justified answers, because, in the end, the numerous determinants of vulnerability to climate hazards are the main culprits for increased disaster losses. Thus, the large economic losses attributed to recent droughts may be mainly a reflection of economic growth, increased investment in infrastructure and, again, rapidly growing population. Reduction of these losses is possible if vulnerability of population and economy is understood and properly quantified, followed by investments in measures aimed at vulnerability reduction. This need is not related to climate change: because if the society learns how to successfully mitigate the impacts of existing climate variability and its extremes, the vulnerability to future ones will drop as well.

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