

Title: Water and Human Development

Citation: Mehta, L. (2014) Water and Human Development, World Development, Vol. 59, pp. 59–69

Official URL: <http://dx.doi.org/10.1016/j.worlddev.2013.12.018>

More details/abstract: The article argues for a human development approach to the water 'crisis.' It explores the application of the entitlements approach (EA) and capabilities approach (CA) to water. EA goes beyond volumetric or per capita measurements of water scarcity and directs attention to the structural and institutional issues concerning water inequalities. CA focuses on links between water and wellbeing. Both strengthen the case for the human right to water and break down false distinctions between water for domestic and productive purposes. Despite challenges with operationalizing CA and EA, a human development approach to water helps question the sector's traditional focus on utilitarianism and efficiency. It also directs attention to equity and to the needs and interests of the marginalised and excluded.

Version: Accepted Author Manuscript

Terms of use: NOTICE: this is the author's version of a work that was accepted for publication in World Development. Changes resulting from the publishing process, such as peer review, editing, corrections, structural formatting, and other quality control mechanisms may not be reflected in this document. Changes may have been made to this work since it was submitted for publication. A definitive version was subsequently published in World Development, Vol. 59, pp 59-69, 2014, DOI <http://dx.doi.org/10.1016/j.worlddev.2013.12.018>

This is a download from OpenDocs at the Institute of Development Studies

WATER AND HUMAN DEVELOPMENT

Lyla Mehta

Forthcoming

ABSTRACT

The article argues for a human development approach to the water 'crisis.' It explores the application of the entitlements approach (EA) and capabilities approach (CA) to water. EA goes beyond volumetric or per capita measurements of water scarcity and directs attention to the structural and institutional issues concerning water inequalities. CA focuses on links between water and wellbeing. Both strengthen the case for the human right to water and break down false distinctions between water for domestic and productive purposes. Despite challenges with operationalizing CA and EA, a human development approach to water helps question the sector's traditional focus on utilitarianism and efficiency. It also directs attention to equity and to the needs and interests of the marginalised and excluded.

Keywords: water and human development; entitlements; capabilities; scarcity; water as a human right and productive resource; equity.

1. INTRODUCTION

Human development is interested not just in economic growth, but in expanding human capabilities and choice (Anand & Sen, 2000). The concept of human development could perhaps go back to Aristotle who was one of the first defenders of the human good, or human flourishing. In his *Nicomachean Ethics*, Aristotle saw wealth which is often sought after, as the means for providing the necessities of life such as food, health and so on (Nussbaum, 1987). The end, for him was happiness, self fulfilment and self realisation which led to human flourishing. The Aristotelian notion of the human good links necessity to 'first ascertain the function of man' and subsequently explores 'life in the sense of activity' (see Sen, 1999: 73; Nussbaum, 1987). Water and sanitation are basic necessities, enabling people to function and human activity to flourish.¹ For poor people, access to water is a prerequisite to achieving a minimum standard of health and to undertake productive activities. Water also plays a key role enhancing agricultural and industrial productivity. Without adequate, safe and affordable water, billions of people around the globe are unable to lead healthy lives and lack the ability to build secure livelihoods.

Access to safe and convenient water supplies is also crucial to enhance women's and girls' well-being. Cultural norms dictate that women and girls are responsible for water collection and can spend between 3 minutes and 3 hours per day collecting water. This time instead could be used to focus on livelihood and agricultural activities and also improve maternal health and that of infants. Girls, often overburdened by time-consuming water collection activities, could have time to attend school and enjoy a normal childhood (see Joint Monitoring Programme, 2013). Water is used to grow food both for subsistence and commercial purposes. However, access to water is deeply unequal around the globe. Poor and marginalised people often lack access to safe and adequate water, either because it is too expensive or because they are excluded due to caste, ethnicity or gender. They also often do not share the gains of large infrastructure projects such as dams, while often negatively affected by them through displacement as well as loss of livelihoods and land (as discussed later in this article, see also WCD, 2000).

Aristotle's mentor, Plato, illuminated the paradox of the value of water and diamonds. Plato in *Euthydemus* (Section 304B) found that what is rare is valuable, while water, considered the best of all, is also the cheapest (see Toye, 2005). Diamonds were considered rare and useless and water was seen to be abundant and useful. Today very few people would consider water to be abundant. In recent years, there has been much talk about the growing water crisis due to its scarcity. Currently, about 800 million people lack access to safe and affordable water and 2.5 billion people are denied access to sanitation. Furthermore, water is the new liquid gold of the twenty first century with increasing controversies concerning its commodification and privatisation (see Barlow & Clarke, 2002; Goldman, 2007; Bakker, 2010; Hall et al., 2005; McDonald and Ruiters, 2005).

This article was originally written as a background paper for the 2006 Human Development Report (UNDP, 2006). I was asked to spell out a human development approach to water, explore the application of both the entitlement and capability analysis (EA and CA henceforth) to the different aspects of water and ask whether both could help question conventional portrayals of water scarcity and water 'crises' (see Mehta, 2006). This turned out to be a challenging task because there is no one EA and CA, but instead many approaches (Gasper, 2006).² There are also different normative, political and policy implications and challenges in application to policy and practical realities (see Robeyns, 2003, 2005; Gasper, 2006). Furthermore, water is often problematically divided into water for domestic use and water for productive purposes and the application of EA and CA is different across domestic and productive issues of water and across EA and CA. Several authors have focussed extensively on what the EA mean with respect to specific natural resources (for example, Gore, 1993; Leach et al., 1999; Fine, 2010). P.B. Anand applies both the EA and CA to water (Anand, 2007). The article builds on this work. It is not grounded in original empirical research but empirical examples are provided wherever they help strengthen the arguments.³

The article argues that a human development approach to water scarcity helps challenge dominant and simplistic portrayals of the water 'crisis'. It shows how the EA allows us to move away from aggregate views of water scarcity to focus on the structural and institutional arrangements (including market-based mechanisms) that exclude the poor and intensify water-related inequalities. However, merely having access to water is not enough. Instead, a person needs a certain kind of access to

water in order to derive certain freedoms or functionings (i.e. capabilities) which in turn depend on a host of factors. CA thus highlights the importance of the multi-faceted nature of water, its links with wellbeing and other freedoms. The article also explores the idea of basic capabilities required for human functioning through the case of the human right to water. It shows how both EA and CA help strengthen the case for the human right to water and CA, in particular, helps break down the false distinction between water for domestic and productive purposes. The article also addresses the challenges arising out of the operational and institutional aspects of implementation with respect to both the productive and basic right aspects of water. The article concludes by arguing that despite some limitations, applying the EA and CA helps enhance equity considerations in the water sector. This is important because even though water policy rhetoric may be about rights and equity, in practice a focus on volumetric issues of supply and demand as well as considerations of utility and efficiency persist which may not always have the interests of the marginalised upfront.

2. THE UNIQUE NATURE OF WATER

Water is a multifaceted resource. It has different faces and meanings in the everyday contexts within which people live their lives. People across the globe value water for both its non-economic and economic roles and it also has deep spiritual significance in many cultures. However, official water resources management discourses (such as those endorsed in the 1992 Dublin principles) largely tend to focus on the economic values of water. Merely viewing water through an economic lens (for example as an economic good) can undermine its embeddedness in the everyday symbolic, cultural and social contexts within which people live their lives (see Mehta, 2005). These issues are expanded upon shortly by taking the case of displaced people in Gujarat.

Water, more than most resources, is highly variable across time and space. Its state and availability depend on temperature, rainfall, soil moisture, wells and irrigation canals. Access to water also depends on technologies and institutions of acquisition, storage (for example, small or large dams), and a range of property regimes (for example, riparian, prior appropriation, licensing or permit systems and customary law, see Movik, 2012). Water allocation regimes are also shaped by a mix of politics, power and discourses and access to water in everyday contexts is usually mediated through

institutions, gender, social and power relations, property rights, identity and culture. Water has symbolic as well as material dimensions, and is subjected to contests rooted in relations of power at both the discursive and material realms (Cleaver, 2000; Mosse, 2003; Mehta, 2005; Movik, 2012; Derman & Hellum, 2005). Due to the fluid nature of water, water rights are usually competing and overlapping and entail a mixture of formal and informal arrangements (Meinzen-Dick & Bruns, 1999). Customary law and practices, kinship networks, gender, caste, patronage tend to dominate in practice despite the existence of formal institutional arrangements. However, the multifaceted aspects of water are overlooked in dominant and global portrayals of the resource that tend to largely focus on the volumetric and material aspects of water to which I now turn.

3. CONVENTIONAL APPROACHES TO VIEW WATER SCARCITY

Water scarcity has emerged as one of the most pressing problems in the twenty first century. Against a growing alarmism about 'water wars', several global agencies, national governments and NGOs have been concerned with emerging water 'crises' and the causality and solutions around water scarcity. International meetings around water are regular occurrences. Consider the following quote: 'A third of the world's population lives in water-stressed countries now. By 2025, this is expected to rise to two-thirds.'⁴ Largely, the terms water 'crisis', water shortage, scarcity and stress are used very loosely in conventional debates. While there is an attempt to pay cognisance to regional variations, most of them lack a clear statement on issues concerning unequal access and how they understand water scarcity and the water crisis (see for example the UN World Water Development Reports, UNESCO various). A welcome exception is the 2006 Human Development Report entitled 'Beyond Scarcity: Power, Poverty and the Global Water Crisis' (see UNDP, 2006) which has explicitly focussed on the role of power relations and unequal access in determining water scarcity.

Most of the literature looks at the finite nature of global water supplies (for example, Shiklomanov, 1998). Countries are classified according to a 'water stress index' on the basis of their annual water resources and population (see Falkenmark & Widstrand, 1992). This is widely adopted and proposes a threshold of 1700m³ of renewable water resource per capita annually, below which countries are said to be water-stressed. Water scarcity scenarios for groupings of countries or regions based on

projections of future water demands and needs are also created (for example, Seckler et al., 1998; Rosegrant et al., 2002). This classification has been adopted all over the world in almost every water policy, highlighting how notions of water scarcity are largely shaped by a focus on volumetric and physical measures.

More nuance is provided by a political science and international relations literature that teases out differences in 'orders' of scarcity ranging from physical (first order scarcity) to second order or socio-economic scarcity (referring to the lack of ability to adapt to the problem of physical scarcity), to third order scarcity that refers to the socio-political, technological and cultural changes that a society must undertake to deal with scarcity (see for example, Ohlsson & Turton, 2000; Wolfe & Brooks, 2003). But these debates do not focus upfront on the social relations underlying resource use and also fail to ask how the 'problem' of scarcity is constructed and how a problematic framing might exacerbate scarcity conditions, on the need to disaggregate users and their entitlements and to look at the politics of distribution within a frame of political economy.

There are several problems with these conventional definitions that take physical (and finite) supplies as a starting point and competing demands/claims on water due to agriculture/industry/domestic use: (1) determining an available supply of water based purely on physical characteristics is fraught with difficulty because supplies are relative to exogenous factors such as rainfall, contamination, seasonal differences and agro-ecological considerations. Water is also determined, accessed and appreciated or disliked locally, making notions of 'global' crises and so forth rather misplaced; (2) demand projections are based on current use patterns and do not insist on major adjustments in reducing norms or enhancing equity, (3) mainstream definitions also fail to distinguish adequately between the scarcity or limitedness of water in the hydrological cycle and the scarcity of access of the poor for their drinking and survival needs (due to the lack of water, its poor quality or their exclusion due to the prevailing social and power relations). Even the notion of economic scarcity takes an aggregate view of populations lacking access to water, instead of breaking groups down by gender, caste, race and so forth.

Table 1 provides a summary of a typology to analyse and understand different portrayals of water scarcity (building on Wolfe & Brooks, 2003). It distinguishes between four kinds of scarcity (physical, economic, third order and socially constructed scarcity). Under each, the table provides the main characteristics, the disciplinary underpinnings and the accompanying solutions. Largely, global agencies draw on physical and economic characteristics of scarcity which focuses on the relationship between supply and demand (1 and 2) rather than on scarcity arising due to problems of lifestyle or socio-political processes (3 and 4).

Table 1 here

Problems arise when responses to the problems of scarcity lead to either simplistic supply or demand management kind of solutions. Supply management results in augmenting water to various sectors, while demand management seeks to reduce demand or improve water management and efficiency (see Lankford, 2010; Kijne et al., 2003). These are mostly required and appropriate interventions, but may leave the central aspects of the scarcity problem untouched. Very often scarcity is also used to provide a rationale for water privatisation and commodification which can sharply compromise on poor people's rights to water (see McDonald and Ruiters, 2005). Technology is often evoked as the solution and large-scale engineering solutions are deployed to augment water supplies. The assumption here is that scarcity is a 'biophysical' condition which should be countered by 'wise management' practices. Instead, scarcity is a highly localised issue, subject to both local conditions and interpretations by different actors, and also very much a political issue. Jairath (2010) demonstrates how in India, despite decades of large scale engineering in the water sector, rural water schemes fail consistently and do not end up serving the interests of the poor. Country-wide definitions of scarcity do not consider regional variations and diverse individual needs. Lankford (2010) demonstrates how in Tanzania, World Bank funded schemes to reduce irrigation abstraction through new volumetric water rights ignored both customary water rights and the uncertain nature of water supplies due to rainfall and seasonality and hence did not mitigate scarcity conditions. Mehta's (2005) research in dryland Kutch in western India highlights how water scarcity has been constructed differently by different social and political actors, often to meet political ends. External 'essentialised' notions of scarcity generated by state discourse and state programmes often differ from local people's

knowledge systems and livelihood strategies that allow them to adapt to the unpredictability and temporary scarcity of water. Thus, water 'crisis' in the region was more a crisis concerning access to and control over the resource and very much linked to prevailing power and social relations. In sum, most mainstream portrayals see scarcity as a natural phenomenon with physical attributes, and not something that is either exacerbated or even caused as a result of socio-political processes. Instead, scarcity is as much about socially regulated access as it is about seasonal changes and physical presence.

4. A HUMAN DEVELOPMENT APPROACH TO WATER SCARCITY

The human development movement has focussed on actual lives lived by a range of people, especially the poor and marginalised. A human development approach to scarcity would thus break down macro and aggregate understandings of scarcity. It would argue that scarcity regarding access to water is unacceptable in the twenty first century. This is particularly so because scarcity is not 'natural' but generated through socio-political processes, through exclusion, biases and discrimination (see also UNDP, 2006 and Mehta, 2005). For example, in India, so called lower caste women are still denied access to certain wells. In apartheid South Africa, the inequalities based on discriminatory policies were huge. Consequently around 80 percent of the poor in rural areas had no access to water or sanitation in 1994 at the birth of the new South Africa (see Movik, 2012).

A human development approach to scarcity can usefully draw on Amartya Sen's entitlements approach (1981; 1983; 1985; 1993; 1999). Sen sees entitlements as the 'the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces' (Sen, 1983: 754). EA is largely a descriptive, not normative framework. An entitlement set includes the full range of goods and services that a person acquires by converting her 'endowments' (namely, assets and resources including labour) through 'exchange entitlement mapping' (see Sen 1981 and 1983). These in turn determine the various functionings that a person can achieve, which is directly linked to the capability approach (CA). Capabilities refer to 'the totality of all the alternative functioning vectors a person can choose from' (Sen, 1985: 27) and reflect an individual's well-being (see below). Here the links to Aristotle's notions of the human good

or necessities to 'ascertain the function of man' (see Sen, 1999: 73) as outlined earlier in the article are obvious.

In his seminal study of starvation and famines, Sen argued that the fixation with the per capita food availability decline (FAD) is a misleading way to look at famine, since hunger is more about people not having access to food due to wider social and political arrangements as opposed to there not being enough food to eat. (Sen, 1981 and 1983). Looking at per capita availability of a resource lacks relevant discrimination and is even more gross when applied to the population of the world as a whole (Sen, 1981). Water scarcity is also often misleadingly perceived as per capita water availability rather than inequality in access to water supply. Usually water access is determined by social and political institutions, cultural norms and property rights. Some groups may suffer from lack of water even when there is no decline in water availability in the region. Thus, water shortages (like famines) are entitlement failures (see also Anand, 2007). P.B. Anand has applied Sen's entitlements framework to look at water scarcity in India (2007). He is interested in whether some people suffer from more water deprivation than others and what society can do about this. Further, the poor may be more vulnerable to health impacts of water supply problems than others (ibid). Anand, thus, sees entitlements as useful considerations of water availability because they move away from the conventional metrics of water scarcity that were discussed earlier in this article.

Poor and landless rural dwellers may lack endowments such as irrigation facilities and wells that can help them have secure water supplies. Poor people who cannot afford to pay for water from taps and handpumps may opt for water from unprotected streams and be exposed to water pollution and disease. Invariably, the poorest have low water endowment. This can negatively affect women's and girls' capabilities and life chances who are culturally required to spend a lot of time on water collection which in turn can also affect the wellbeing of the entire household. Thus, the EA when applied to water would indicate that some people's lack of water does not necessarily imply that water is scarce. Instead, it means that some people lack entitlements to water either because it is too highly priced, due to the lack of infrastructure, or due to social exclusion. Some are seen as 'entitled' by virtue of who they are or are taken to be socially. For example, in many cities of the global South rich people in urban areas have swimming pools while those in peri-urban dwellings are considered to be 'informal'

and lack a range of entitlements to water. Furthermore, state sponsored water is usually directed to rich and middle class localities that are connected to the formal water system while the poor are left to fend for themselves and secure water by informal means (see Mehta et al., 2013). Also water privatisation in countries such as South Africa has led to thousands of people being cut off from water services which severely restricts citizens' ability to enjoy their constitutional right to water (see Flynn and Chirwa, 2005). Merely having access to water is not enough. Poor quality affects people's entitlements and endowments in different ways. Degradation of local sources forces poor people in the global South to purchase water which in many cases can cost 10 – 20 times more than what residents in the global North pay (UNDP, 2006). If water is contaminated and causes diarrhoea to different family members, it affects people's capability to engage in productive activities and also leads to rising costs in health care. If people lack a range of entitlements (e.g. technologies to purify water or the finances), they may have no choice but to drink polluted water. In sum, the application of the EA to water helps avoid the water sector's conventional focus on utilitarian arguments. It urges us to go beyond volumetric or per capita measurements of water availability, neo Malthusian understandings of the water 'crisis' and water scarcity to also address the structural and institutional issues concerning water inequalities and injustices.

5. WATER, CAPABILITIES AND WELL-BEING

A human development approach to water would also question the water sector's conventional focus on cost-benefit analyses to evaluate well-being (see Anand, 2001). This is where the capability analysis (CA) is most useful. Rather than focussing on the means of achieving the 'good', Sen prefers to look at the 'actual living that people manage to achieve' (Sen 1999: 73).⁵ Sen argues that even though it is common to 'use incomes and commodities as the material basis of our well-being...what use we can respectively make of a given level of income, depends crucially on a number of contingent circumstances, both personal and social' (1999: 70). Hence, well-being is firmly anchored in a particular social and personal context. This is why Sen advocates for evaluative purposes, the CA as a means to measure well-being. This approach focuses on 'substantive freedoms – the capabilities – to choose a life one has reason to value' (1985, 1993, 1999: 74). Thus, at the heart of this approach

one must look at the freedoms that an individual can enjoy. Thus, development, according to Sen, is a process of expanding the real freedoms that people enjoy (1999: 3).

In this broader sense, well-being should increasingly be understood as a multidimensional phenomenon ranging from income to the public provision of goods and services, access to common property resources and other intangible dimensions such as self respect and autonomy (Razavi, 1999). Conventional ways of evaluating water and well-being focus on aspects such as regular provision, adequate quality and distance (for example, JMP, 2013). However, a more multidimensional approach would also focus on issues such as autonomy, links with identity and the freedom to choose. It is often assumed that once water supply is provided within a certain distance (usually about 1000 metres); access to water has been created. But officials are often surprised when local people have other preferences.

Take the case of Vasava and Tadvi so called 'tribal people' in Gujarat, India who were displaced from their ancestral homes from the banks of the River Narmada due to reservoir flooding in the early 1990s. They were resettled 200 kilometres away against their will in villages in the plains where they were considered 'primitive' and 'backward' by the dominant caste Hindu groups who inhabited the villages. The officials thought that the women were now 'developed' because taps were installed a few metres away from their home. But the women preferred water of the river to the tap provided close to the house by the government because the taste of the river water was better. They also wanted the freedom to collect water when it suited them, not when the officials turned on the tap (Mehta & Punja, 2006). Displacement had robbed them of their access to a river they considered 'Mother' and holy, reduced their sense of autonomy and independence and the interactions with friends that they enjoyed through daily water collection.

In the resettlement village, instead, social relations were fraught around water because the daily scramble for water from the tap often led to conflicts and fights. Additionally, the displaced communities also struggled to make a livelihood out of the poor farm land that was allocated to them and also missed access to forest and common property resources which were very crucial for their livelihood security (Mehta & Punja, 2006). As traditional riverbed communities moved from river

basins to settlements in plains, they experienced dramatic changes in water quality and quantity. These had both tangible and intangible implications for their livelihood options, health, socio-cultural identity, daily routine and social relations as outlined above. But bureaucrats and policy makers focused on conventional understandings of water and well-being, thus neglecting or even wilfully ignoring displaced people's subjective sense of ill-being (Mehta & Punja, 2006).

How does the CA help us to understand displaced people's ill-being after displacement, something that is often overlooked by policy makers and resettlement officials? Before displacement, the tribal villagers were entitled to a near unlimited and constant supply of good water from the river. They were able to convert that river water to food by growing crops on the river bed and through fishing. All the villagers had the freedom to go to the river and fetch water whenever it suited them. The ability to extract the water will have varied across households, as may the freedoms and opportunities realised on the basis of the water, but few if any social limitations were placed on its use, and the endowment was unrestricted. After displacement by contrast the supply was intermittent, the water poor, and access limited by the pecking order at the spout. The entitlement was now restricted, the endowment severely cut back, and the poor water impossible to convert into the well-being and greater agency freedom of using good river water. Displacement also reduced their capability to convert resources such as the river, grazing lands and the forest to various freedoms and well-being that promoted their livelihood security, health and provided an additional source of income. (For example, the forest provided herbs, wood and grazing lands for their cattle). Yet by the metric of the engineers and donors, upon displacement, a spout if closer than the bank of the river will count as an improvement, though in this case it contributes to the immiseration of displacement. Thus the CA is able to account for the deprivation and marginalisation of the villagers in terms of water use, while conventional aggregate framings hide them.

It is important to note that even though displaced people may have better physical access to water, their ill-being has increased. Here the value of the CA is in demonstrating the importance of what is actually achieved in terms of beings, doings and freedom, over and above access and command over commodities (that is, entitlements). Furthermore, the CA focuses on both process and opportunity aspects of substantive freedoms. It allows us to argue that tribal communities suffered both to

problems in water quality and access and were also deprived of all the opportunities to convert river water into further capabilities. Finally, they also lacked the freedom to participate in decision making processes about their displacement and the social and economic aspects of life after relocation. Thus the issue not just about inequalities in access (EA) but also how much access a person needs in order to derive a certain capability and how this in turn depends on other factors and capabilities. Crucial to this article, personal capabilities may vary on the basis of the same entitlements and endowments to water. Linked to these issues are people's ability to participate in decision-making processes around water resources development or what Martha Nussbaum calls process freedom, (see Nussbaum, 2003).

6. TOWARDS EQUALITY IN THE WATER DOMAIN

The article now focuses on different theoretical debates concerning equality and equity in the water context. Specifically, it examines the philosophical basis to set a principle for a basic amount or minimum standard of a basic necessity such as water. This is followed by discussions of water as a basic / human right and productive resource which are usually very connected in people's everyday lives. Rawls (1971) focuses on 'primary goods' which refers to the resources that people are entitled to. This refers to both income, but also 'general purpose means' that help anyone to promote his or her ends, and include 'rights, liberties and opportunities, income and wealth, and the social bases of self-respect' (Sen, 1999: 72). For Rawls, there are different individual 'conceptions of the good' and primary goods refer to the individual advantage in terms of opportunities to pursue their own objectives. Rawls focuses on the poorest groups, and how the poorest groups can be made better off. Rawls' heuristic device of the 'veil of ignorance' allows him to derive his 'difference' or 'maximin principle' which fits well with a principle of a basic entitlement to water, in that all persons irrespective of their standing, under a veil of ignorance, would likely agree to a minimum amount of this basic necessity. The difference principle, or the 'maximin principle' focuses on equality or distribute justice, stating that any gap between the poor and the non poor in terms of wealth and income can only be justified if and only if that gap serves the benefit of the least advantaged, and is associated with positions open to all, that is, conditions of fair equality of opportunity (Rawls, 1971; 1999). In terms of water, this could for example take the form that the greater consumption of water by some people –

for example, irrigation, is justified if that consumption generates proportionate employment and therefore income for the least advantaged, but under the condition that the least advantaged would have had the same opportunity of accessing that water. The principle would only hold, therefore, if given the choice between water generated employment and taking up water use for own productive means, the least advantaged people would prefer the former.

CA goes beyond Rawls's primary goods to focus on the characteristics that govern the conversion of commodities 'into the person's ability to promote her ends' (Sen, 1999: 75). In other words, it is not just interested in the means but also in the ends. Central to Sen's approach are the conversion factors (personal, social and environmental) because these will influence the relation between a good and the level of functioning. People in different places will need varying amounts for the same capability. Also the same good will translate to different freedoms for different people, depending on how it can be converted. Entitlements to safe water could for one person mean freedom from thirst but another person may also go beyond the domestic realm to make bricks and sell them and thus, enhance her livelihood options. In the Gujarat example provided above, before displacement tribal groups used the river not just for domestic purposes but also for productive activities (lift irrigation, fishing, transport and riverbed cultivation) leading to better and more varied diets and livelihood diversification. But a person's ability to achieve these conversions depended of course on a range of issues such as physical condition, knowledge and skills, gender, age and geographical location.

Sen has not provided any specification regarding priority, quantity or implementation regarding capabilities which is interpreted by Martha Nussbaum and others as an unwillingness to put forward a substantive theory of justice in CA (see Srinivasan, 2007). In his capabilities approach the focus is not on the quantity of the bundles of entitlements but instead on the principle of equality and finding a framework for egalitarian concerns. In fact, it could even be argued that women and men differ within and between societies and the ability to function on the basis of the same allocation of any one resource varies, and may vary dramatically so it may not make sense to give everyone equal amounts of something (in our case water). Still Sen has suggested the notion of basic capabilities which are a subset of all capabilities and encompass the freedom to do 'basic' things. As Sen says, basic capabilities help in 'deciding on a cut-off point for the purpose of assessing poverty and deprivation'

(Sen, 1987: 109). They provide a kind of threshold or the minimum standard required for basic functioning. When translated to water, this would mean that a basic amount of water is required for basic human functioning (drinking, washing and to be free of disease). One could also argue that this minimum requirement for human functioning should also capture livelihood and subsistence purpose. The absolute quantity involved would differ according to age, gender, religion, occupation, geography and so on. Of course, as I explain later, even what constitutes a 'basic water requirement' is by no means resolved or uncontroversial in the water sector.

Robeyns (2000; 2003) builds on the idea of basic capabilities which she subsequently called general capabilities to present the idea of fundamental capabilities which refer to the deeper, foundational, more abstract, aggregated (not over persons but over different capabilities in one person). Thus, the fundamental capability of health is made up by both basic health capabilities (having access to food and water) and non general capabilities (for example having access to a gym and being able to have a massage). In the water realm, basic or general capabilities would include having the right to access a minimum amount of water required to survive. By contrast, non basic capabilities would mean having enough to water one's lawn or to grow commercial crops (see Robeyns, 2005).

The philosopher Martha Nussbaum has developed Sen's work to advance the Central Human Capabilities List which is to be considered a cross-cultural evaluation tool free from any cultural biases (Nussbaum, 2003). She tries to address upfront Sen's reluctance to make commitments about a substantive theory of justice and the level of fundamental entitlements a 'just' society should deliver to all its citizens. She has thus proposed a concrete list of capabilities which comprises 10 categories. These include: life; bodily health; bodily integrity; senses, imagination and thought; emotions; practical reason; affiliation; other species; play and control over one's environment. Water is not explicitly mentioned by her but would probably feature at the top end of the list, namely under (1) Life or (2) Bodily Health (Nussbaum, 2003: 12). For Nussbaum, even though the body may be culturally influenced, some human physiological attributes are completely universal. These include hunger, thirst and so forth. For Nussbaum, the basic bodily requirements cannot vary between different races and cultures (1987: 27). Nussbaum's list however has been critiqued for making contested

metaphysical assumptions and priorities and for being too western liberal and paternalistic and lacking in legitimacy (see Srinivasan, 2007; Robeyns, 2003; Stewart, 2001).

What are the implications of translating such a list to water? It would be valuable for all governments to prioritise safe and secure water access for their citizens, especially the poorest and the article goes on to review the South African experience in this regard. However, it is not easy to have a universal cross cultural evaluation tool around water requirements. Evidence from the water sector in setting up standards around what constitutes a 'basic water requirement' varies greatly by country and by institution. Basic water requirements have been suggested by various donor agencies and they range from 20 to 50 litres a day, regardless of culture, climate or technology. Usually, though culture, climate, livelihoods, whether urban or rural do matter (as the South African example to follow demonstrates). The WHO prescribes between 20 – 100 litres a day (WHO, 2003) but recognises that below 50 litres can only reach a 'low' level of impact and that 100 is the minimum required for basic food and personal hygiene. (This amount completely excludes water for productive or survival activities such as growing food.) The threshold level of what counts as 'hygienic' or 'safe' is also highly culturally determined. The UNICEF/ WHO Joint Monitoring Programme's definitions of what constitutes 'improved' water supply and sanitation are highly contested, not least because their definitions may not be in tune with local preferences and realities. Nussbaum's moral-legal and philosophical perspective on capabilities argues for governments to incorporate her principles into their constitutions and her list is supposed to provide citizens with a justification to have a right to make demands from their governments. However, as the case of South Africa outlined below shows, despite constitutional provisions, several on-the-ground contradictions emerge around enhancing entitlements and capabilities to water. The article now turns to these in concrete by examining the case of the human right to water and water for productive purposes. While I recognise that they are not separated out by local people in their daily lives, it makes sense to analyse them separately given their distinct institutional and policy contexts.

7. THE CASE OF THE HUMAN RIGHT TO WATER

As Goldewijk and de Gaay Fortman put it, 'a rights-based approach to social and economic security implies that people's access to basic needs is protected by law and legal mechanisms' (1999). The discourse of rights is based on the notions of rights holders and duty bearers (UNDP, 2006). The now globally endorsed human right to water was only implicitly mentioned in the 1948 Universal Declaration of Human Rights (Mehta, 2005). In November 2002, the United Nations Committee on Economic, Social and Cultural Rights adopted the General Comment on the right to water. The Committee stressed the State's legal responsibility in fulfilling the right and defined water as a social and cultural good and not solely an economic commodity. But there still remained a lot of resistance to this notion amongst powerful nations such as the USA and Canada and key water players who preferred to see water as an economic good or commodity and not as a human right. Through effective lobbying in July 2010 access to clean water and sanitation was finally recognised by the General Assembly of the United Nations as a human right. In September the UN Human Rights Council affirmed by consensus that the right to water and sanitation is derived from the right to an adequate standard of living, which is contained in several international human rights treaties and that is both justiciable and enforceable.⁶ In reality, implementing water as a basic right has been fraught with difficulty. Despite its global recognition, it remains conceptually ambiguous (see Sultana and Loftus, 2011) and it is still unclear what constitutes the right to water (i.e. in terms of the actual amount but also whether its scope should be expanded to also look at survival needs beyond domestic issues. There are also heated debates about whether the right to water is compatible or not with parallel global trends of water commodification and privatisation).

There is also a flawed understanding that water and sanitation are so called positive or second generation rights which can only be realised after civil and political or so called first generation rights are realised. Plant (1998) however, has shown how both are indivisible and it is flawed to assume that only positive rights entail resource implications. Amartya Sen has rejected the dominant focus on negative freedoms and rights and argued against the notion that economic and social rights are difficult to see as 'rights' because they are often unfeasible and difficult to institutionalise (Sen, 2004). Instead, he argues that they need to be realised through a multiple of means which include,

institutional expansion and reform, public demand and agitation as well as political recognition and social monitoring. Vizard (2005) who has reviewed Sen's contribution to the field of human rights argues that he has significantly broadened the principle of justice to include social and economic rights that allows for universalism, as opposed to cultural relativism. Sen sees human rights as entitlements to rights to certain specific freedoms, i.e. capabilities (2004). In this case, capabilities include both functioning (i.e. having access to safe water) as well as having the *opportunity* to have a good and safe supply of water and the ability to choose different combinations of functionings. Thus, genuinely protecting people from water-related injustices has a lot to do with human rights, local agency and the right to determine and set one's own priorities and strategies regarding water.

I now draw on the case of South Africa to discuss issues concerning equity, basic entitlements to water and the human right to water. Equity issues are upfront in South African water debates, in terms of access to water and sanitation as part of basic human rights; equity in, access to and benefits from water resources (regarding the productive uses of water). These are reflected in the National Water Act of 1998 which is a powerful piece of legislation that seeks to redress past inequities around water use (in 1994, 12 million out of 36 million lacked access to water, see Movik, 2012). South Africa initially also stood out as one of the few countries that explicitly recognised the right to water, and its Free Basic Water policy provides 25 litres per capita per day based on a household size of eight people free to all citizens (see McDonald & Ruiters, 2005 and Mehta, 2006).

Despite these promising policies on paper, implementing the right to water in South Africa has been fraught with difficulties and there are huge debates regarding whether they have had a significant impact on improving the well-being of poor South African citizens and how equitable they are (ibid, see also Flynn & Chirwa, 2005). One, there are many debates concerning the sufficiency of 25 litres per day per person, especially if the household number is large. In rural areas, this has not been deemed to be sufficient for poor people to successfully maintain their livelihoods, escape the trap of poverty and HIV/AIDS and dependence on pension grants (Mehta, 2006). The 25 litre provision takes a very narrow view of the water needs of the poor, inimical to the CA's focus on human flourishing and freedoms which should also take into account livelihood needs. There is now significant evidence to suggest that most poor households in South Africa do not enjoy a 'healthy environment'

on the basis of the 25 litres provided. Instead, more like 80 – 100 litres are required per person for basic personal and food hygiene and this does not even take into account water for subsistence, so crucial for poverty reduction and survival (see Flynn & Chirwa, 2005). Two, South Africa has increased adopted market-friendly positions in its water sector with increasing commercialisation and privatisation of water services. This was reflected in the Water Services Act of 1997 and the White Paper on Water Policy where cost recovery and efficient use of water are emphasised. These market-friendly positions have undermined the country's commitments to rights and free basic water (see McDonald & Ruiters, 2005; Flynn & Chirwa, 2005; Loftus, 2005).

Three, there are huge backlogs in the former homeland and black/ majority areas of the country that did not benefit at all from apartheid-era heavily subsidised water infrastructure. Here, municipalities struggle to provide people with 'basic' water, let alone free water (Mehta, 2006). Implementing cost recovery schemes in areas disadvantaged by apartheid further perpetuates inequalities of race and class (Flynn & Chirwa, 2005; Loftus, 2005). Four, cash-strapped municipalities who are responsible for implementing Free Basic Water have resorted to full cost-recovery policies and controversial schemes such as prepaid meters, limitation of water supply through a trickle value and controversial cut-offs, all of which can be interpreted as placing constraints on the constitutional right to water under section 36 of the Constitution (see Flynn & Chirwa, 2005).

In the Mazibuko case, Mrs Mazibuko and other residents of Phiri in Johannesburg challenged the installation of pre-paid metres in their homes which they considered unlawful and unconstitutional and asked instead for 50 litres per person per day. The case was tried at several courts. The South Gauteng High Court stated in 2008 that often households constitute about 16 members, ordered the removal of the pre-paid metres and confirmed the provision of 50 litres per person per day. On appeal, the Supreme Court of Appeal Judgement was more cautious and stated that 42 litres per capita per day would be sufficient and granted the municipality extra time to legalise installation of pre-paid metres. In 2009, the Constitutional Court reversed previous decisions, rejected the claims of the applicants and stated that the City of Johannesburg was not acting against the constitutional human right to water and that the installation of pre-paid metres was lawful. These three judgements highlight the difficulties in both interpreting the nature of the right to water, the arbitrary nature of the

judiciary and its role in subduing the claims of poor residents (www.polity.org.za, accessed October 2010). They also highlight that several of the cost recovery measures used in South Africa are placing a disproportionate burden on the poorest consumers in the country who are already disadvantaged due to apartheid legacies and policies.

This is why the UNDP (2006: 8) observed: 'The entitlements approach offers useful insights on water insecurity because it draws attention to the market structures, institutional rules and patterns of service provision that exclude the poor. It also highlights the market structures that result in poor people paying far more for their water than the wealthy.' Of course, human rights law doesn't mandate that the state has to be solely responsible for the provision of basic services. But it is the state's role to ensure affordability and equity, something that often gets compromised when water privatisation takes place. The CA lens points to the lack of freedoms of poor and marginalised South African citizens to escape from the water injustices confronting their daily lives. The devices deployed by the state such as pre-paid meters, cut offs and disconnections etc. not only run contradictory to the constitutional right to water but also create new forms of unfreedoms, poverty and ill-being.

Both CA and EA would contend that states must provide a basic entitlement of water which is a prerequisite for people to achieve different functionings and capabilities. Thus, the right to water would allow people to enjoy a host of capabilities. Livelihood concerns would probably not be separated out from domestic needs, but the actual amount of water would be negotiable. The entitlements lens would also contend that cost recovery measures that compromise on basic human freedoms are not tenable. It is important to note that granting all people the basic necessities for survival does not mean that inequality will be reduced. If a farmer is guaranteed access to say, 70 litres of water per day, but does not have any means with which to access water for productive uses, her lot will not be improved by much. Her capabilities will be increased in terms of having better health, but that would not address the other dimensions of income generation, livelihood security and the reduction of unequal distribution and access to water resources.

As this example highlights there are significant difficulties in operationalising the capability approach as has been pointed out by Anand (2007), Robeyns (various) and Gasper (2006). As Gasper argues,

institutionalising the CA is difficult as inherent fuzziness in the CA could lead to the emergence of 'economic welfare' and the emergence of a preoccupation with quantification above institutionalisation. He also argues that there is no guarantee that governments will be benign and give into people's demands, even if they institutionalise capabilities, rights and so on as the South Africa example highlights. Both he and Robeyns (2005) criticise Nussbaum for her belief in benevolent governments. As the Mazibuko case highlights, legal and state systems can be highly contradictory and Nussbaum's focus on public discourse and rational scrutiny needs to be complemented by an understanding of how political power operates and shapes organisational processes (Gasper, 2006). Sen (2004) looks to public reasoning, choice and participatory decision-making for defining and prioritising capabilities and also in the formulation and vindication of human rights. But even so called mature democracies are characterised by political struggles and decisions are determined by wider issues concerning political economy, leaving much to be desired in terms of participatory decision-making processes. Thus, even providing something as simple as water is going to be highly contested and skewed in interests of the powerful. Mostly, poor citizens are rarely consulted about their water-related priorities and needs. The focus on 'public reasoning' in the formulation and vindication of human rights perhaps ignores the role of powerful market interests and ideologies whose interests ultimately prevail in public policy. We now turn to water as a productive resource where some further challenges emerge, largely due to the fluid nature of water as a resource and the competing nature of water rights.

8. WATER FOR PRODUCTIVE USES

The preceding sections have demonstrated how policy makers tend to separate water for domestic and productive purposes. The CA can be used to highlight that this thinking is flawed. It teaches us that the right to life includes the right to livelihood (that is, water for production). Moreover, water policy should not dictate to people what they can do or not with the water (Anand, 2007). Moreover, rights cannot just focus on equally distributing resources (Sen, 1984) but instead different people use resources for different things and convert resources into different freedoms according to capabilities and values.

Water for productive uses is often required for both subsistence and maintaining a secure livelihood. For example, the Water for Food movement, an NGO working in the Limpopo Province in South Africa, used to help villagers change their mindset with regard to water. From relying on handouts from the government to mitigate their deprivation, they were encouraged to build small water tanks for rainwater harvesting in order to use water for their home gardens. From not having enough food to feed their children every day, through the tanks many women became self sufficient in food and were able to make a small income by selling their produce to the local market (van Koppen et al., 2006). Thus, water for productive uses goes beyond the mere focus on a basic threshold of survival that basic right to water would encompass. Water for productive uses also has the potential to address questions of inequality. In Zimbabwe, empirical studies reveal that the right to water also extended beyond the right to safe, affordable and adequate water to encompass livelihood security (Derman & Hellum, 2005). This included water provision for gardens which are key for health and livelihood security. In rural contexts, thus, access to water for productive uses, in conjunction with land is a very important element of people's livelihoods and generates welfare. From this perspective, it may be argued that an entitlement to water for productive uses can be justified in terms of the human right to livelihood and welfare. Having entitlements to water as productive inputs, as part of a person's entitlements, would in turn influence her capabilities.

However, both EA and CA are more tricky when it comes to water for productive purposes, largely because of the fluid nature of water. As highlighted earlier, water rights are overlapping and contested and subjected to competing claims and interests since access is mediated due to kinship and family networks, social, power and gender relations and the different ways to negotiate around them (see Bruns & Meinzen-Dick, 2000; Cleaver, 2000; Mehta, 2005; Roth et al., 2005; Boelens et al., 2010). Access to water for productive purposes is intimately linked up to land access and entitlements to irrigation can mean nothing if land ownership is absent or insecure. In South Africa for example, water access is regulated by statutory law and a system of licensing, land access in some areas is still governed by traditional practices, where local chiefs allocate Permissions to Occupy (PTOs), often favouring close kin and allies. This is a system in which women's access to land is conditioned by their relations with male relatives (see Movik, 2012). Because access to water is often dependent on wider social networks and kinship ties it is a part of people's everyday doings and practices, which in

turn are shaped by their roles and functioning within their community. Hence, targeting individuals' capabilities could miss the larger picture of a community's capability which is more than the sum of its parts.

EA has been criticised for being neutral with respect to underlying social relations, historical specificity (except in understanding endowments and how they are translated into outcomes) and not being explicit enough about the specificity of resources (be they water, food and so forth) in cultural and material terms (Fine, 2010). As the water literature outlined above highlights, entitlements to water are imbued in meaning, fuzzy property rights, social and power relations and are highly messy. What happens when such messy water rights are 're-ordered'? One, it presupposes an active and benevolent state which is often ignorant of the local and community dynamics outlined above and also influenced by powerful political interests. Two, negotiations around the re-ordering of water rights can produce entitlements failures for some. For example, groundwater reform can create entitlements failures for those who lack access to irrigation facilities. Legislation around water allocation reform can create entitlement failures for those who lack formal licences to water or for those who end up with disbenefits from new water rights that are often tradable (see Movik, 2012). Women's informal rights are often overridden in state sponsored irrigation schemes (van Koppen, 2006). Officials and states may uphold powerful groups' interests, rather than those of the weak and marginalised.

Some of these limitations of the EA in the environmental context have already been highlighted by Leach et al. (1999), Gore (1993) and Devereux (2001). They thus flag the need to focus on the range of relationships amongst various institutions operating at a range of scales where a focus is maintained on relations of power and debates over meanings. Devereux (2001) also argues that the focus the individual as a unit of analysis can be problematic where natural resource management is linked to units beyond the individual (such as the household, extended family and lineage groups). Furthermore, it has been argued that Sen does not engage adequately with questions of opulence or over consumption and ignores how resources for capability development can be built on a global scale (Cameron & Gasper, 2000). In terms of entitlements to water, this latter criticism implies that attention should not merely be on people's minimum or basic requirements, but also focus on the over consumption and wastage of large scale users or on how some consumers are 'over-entitled'. This is

also addressed through Rawls's difference principle. As argued earlier, some liberties may translate into constraints on other people's liberties; in the sense that one person's liberty to consume water can have impacts on another person's liberty to do the same, as water is rivalrous in consumption. Nussbaum critiques Sen for his use of 'freedom' – this is because some people's freedoms can limit others and Sen says nothing to 'limit the account of freedom or to rule out conflicts arising due to conflicting freedoms' (Nussbaum, 2003: 16). For example, the freedoms of poor people concerning basic water may be restricted due to large land owners insisting on large scale irrigation facilities that monopolise limited water resources in arid areas. Thus, a broad definition of capabilities can impinge on enhancing social justice for marginalised groups that lack access to property rights (Nussbaum, 2003: 16).

9. CONCLUSIONS AND POLICY IMPLICATIONS

Beginning with the unique nature of water, the article highlighted the multifaceted and fluid aspects of water and how these are often neglected in official policy debates and dominant portrayals of the water crisis. This article thus argued for the need to advance a human development approach to water. It demonstrated how the EA allows us to move away from aggregate views of water scarcity and water crises to focus on the structural and institutional arrangements (including market-based mechanisms) that exclude the poor and intensify water-related inequalities. The article also demonstrated how merely having access to water is not enough. Instead, a person needs a certain kind of access in order to derive certain freedoms or functionings (i.e. capabilities) which in turn depend on a host of factors and capabilities. Linked to these issues are people's ability (or not) to participate in decision-making processes around water resources management and development. Policy makers therefore need to focus on the multi-dimensional aspects of water and their links with human well-being and how individuals and communities can play an active role in shaping their water futures. There needs to be far more focus on creating participative freedoms for local women and men to relate to something as fluid as water and make water-related decisions in a culturally appropriate way (see also UNEP, 2004).⁷ Providing for the freedom and capabilities of people in relating to water and its uses must also necessarily entail questioning dominant discourses and

relations of power that shape issues concerning water scarcity, water commodification, dam-related displacement and so on.

The article also explored the idea of basic capabilities required for human functioning in the water realm through the case of the human right to water. It demonstrated how the CA helps strengthen the case for the human right to water and how governments need to prioritise providing poor people with access to water that is safe, affordable and allows them to flourish. Countries such as South Africa, Ecuador, Bolivia, Gambia, Tanzania and Uruguay now recognise the human right to water. But there remains a considerable gap between human rights talk and human rights practice and there is often a clear tension between a government's commitment to rights and to market-based mechanisms, with the latter tending to prevail having consequences for poor people's right to water. The article also demonstrated how both the EA and CA help to break down false distinction between water for domestic and productive purposes. CA makes a strong case for having a broader conceptualisation of the right to water to also encapsulate wider productive uses of water. Such a conceptualisation would be more true to how water is understood and embedded in the daily lives of local women and men around the world.

It was also noted that it is difficult to 'evaluate' what counts as 'basic' in basic capabilities. Here it is worth recalling that Sen's reason behind the idea of capabilities was to find an appropriate framework and measure for egalitarian concerns (Sen, 1990). Men's and women's ability to function on the basis of the same allocation of any one resource varies dramatically. Because people need different basic amounts of water to enjoy the same standard in terms of capability, setting a minimum standard such as 25 litres in South Africa can be highly problematic and not tackle inequality head on. In some cases, inequalities can also be exacerbated. Instead, one should aim at a distribution of resources which affords everyone more or less equal capability to convert them into freedoms or to realise them as functionings (Sen, 1990). Governments often cite limited financial resources as the reason why they are not able to provide poor people access to safe, affordable and secure water. But this reluctance is short-sighted. A mere 1 percent from military budgets at the turn of the century would have easily matched the additional US\$9–15 billion estimated by the Water Supply and Sanitation

Collaborative Council for achieving the MDGs on water and sanitation through low cost technology and locally appropriate solutions (see Mehta, 2004).

Amartya Sen recognises the difficulty in realising social and economic rights (2004) and urges us to 'work towards changing the prevailing circumstances 'to make the unrealized rights realizable, and ultimately, realized' (2004: 348). He also argues for the need to increase the monitoring of the violation of human rights and the procedure of 'naming and shaming.' Because the right to water has been controversial and also relatively recent, the Special Rapporteur of the Right to Water and Sanitation (unlike the Special Rapporteur, say, on housing) appears to lack such a clear mandate. Instead, the focus has largely been on defining the scope of the right and on gathering 'best practices.' The Special Rapporteur for the Right to Water and Sanitation also seems to under-serve the cause of human rights by claiming that rights are market-neutral and by remaining agnostic. Instead, there should be a stronger social justice perspective to the right to water drawing on both CA and EA which should also allow for a broader definition that encompasses both domestic and productive uses of water so integral for human well-being.

The article also focussed on some of the challenges arising due to the fluid nature of water, what this means for water for productive purposes. Entitlements to water are imbued in meaning, fuzzy property rights, social and power relations and are highly messy. One cannot assume that a 'benevolent' state will re-order water rights in a way that will have just outcomes for the poorest. Also water entitlements for some may mean entitlement failures for other. These issues need to be borne in mind during water reform processes currently underway in most countries of the world.

To conclude: Despite some of the challenges outlined in operationalising EA and CA, I have argued that both EA and CA are strong analytical tools to understand why many people in reality cannot access and/ or realise their freedoms vis-à-vis water and how poor and disenfranchised people's entitlements and capabilities to water can be strengthened. This is important because even though water policy rhetoric may be about rights and equity, in practice utilitarian and efficiency considerations persist which may not always have the interests of the marginalised upfront. Thus, a

human development approach to water that focuses on the 'good' and human freedoms of all is highly necessary.

REFERENCES

Anand, P.B. (2007). *Scarcity, Entitlements and the Economics of Water in Developing Countries*. Cheltenham: Edward Elgar.

Anand, S. & Sen, A. (2000). Human development and economic sustainability. *World Development*, 28(12), pp. 2029–2049.

Bakker, K. (2010). *Privatizing Water: Governance Failure and the World's Urban Water Crisis*. Ithaca, NY: Cornell University Press, p. 201.

Barlow, M. & Clarke, T. (2002). *Blue Gold: The Battle Against Corporate Theft of the World's Water*. London: Earthscan.

Boelens, R., Getches, D. & Guevara-Gil, A. (Eds.) (2010). *Out of the Mainstream: Water Rights, Politics and Identity*. London: Earthscan.

Bruns, B.R. & Meinzen-Dick, R.S. (Eds.) (2000). *Negotiating Water Rights*. New Delhi: Vistaar and London: Intermediate Technology Press.

Cameron, J. & Gasper, D. (2000). Amartya Sen on inequality, human wellbeing, and development as freedom. *Journal of International Development*, 12(7), pp. 985–988.

Cleaver, F. (2000). Moral ecological rationality: institutions and the management of common property resources. *Development and Change*, 31(2), pp. 361–383.

Derman, B. & Hellum, A. (2005). Observations on the intersections of human rights and custom: a livelihood perspective on water. Paper presented at the International Workshop on '*African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa*' 26–28 January 2005. Johannesburg, South Africa.

Devereux, S. (2001). Sen's Entitlements Approach: Critiques and Counter-Critiques. *Oxford Development Studies*. 29: 3: 246-263.

Donnelly, J. (1999). Human rights, democracy and development. *Human Rights Quarterly*, 21, pp. 608–32.

Falkenmark, M. & Widstrand, C. (1992). Population and water resources: a delicate balance. *Population Bulletin*, 47(3) pp. 1–36. Washington DC: Population Reference Bureau.

Fine, B. (2010). Economics and Scarcity: Amartya Sen as Point of Departure. In L. Mehta (Ed.) *The Limits to Scarcity* (pp. 73–92). London: Earthscan.

Finger, M. & Allouche, J. (2002). *Water Privatisation: Transnational Corporations and the Re-regulation of the Global Water Industry*. London and New York: Taylor and Francis.

Flynn, S. & Chirwa, D. M. (2005). The Constitutional Implications of Commercialising Water in South Africa. In D. McDonald & G. Ruiters. (Eds.) *The Age of Commodity: Water Privatization in Southern Africa*. London: Earthscan, pp. 59-77.

Gaspar, D. (2006). *What is the capability approach? Its core, rationale, partners and dangers*. Institute of Social Studies Working Papers, 428. The Hague: Institute of Social Studies.

Goldewijk, B.K. & de Gaay Fortman, B. (1999). *Where Needs Meet Rights: Economic, Social and Cultural Rights in New Perspectives*. Geneva: WCC publications.

Goldman, M. (2007). How 'Water for All!' policy became hegemonic: The power of the World Bank and its transnational policy networks. *Geoforum*, 38, pp. 786-800.

Gore, C. (1993). Entitlement relations and 'unruly' social practices: a comment on the work of Amartya Sen. *Journal of Development Studies*, 29(3), pp. 429-460.

Hall, D., Lobina, E. & de la Motte, R. (2005). Public resistance to privatisation in water and energy. *Development in Practice*, 15(3-4), pp. 286-301.

Iyer, R. (2003). *Water: Perspectives, Issues and Concerns*. New Delhi: Sage.

Jairath, J. (2010). Advocacy of water scarcity: leakages in the argument. In L. Mehta (Ed.) *The Limits to Scarcity: Contesting the Politics of Allocation* (pp. 215-232). London: Earthscan.

Joint Monitoring Programme (2012). *Progress on Sanitation and Drinking Water: 2013 Update*. Geneva: WHO/UNICEF.

Kijne, J.W., Barker, R. & Molden, D.J. (2003). *Water Productivity in Agriculture: Limits and Opportunities for Improvement*. Wallingford, Oxen: CAB International.

Lankford, B. (2010). A share response to scarcity: moving beyond the volumetric. In L. Mehta (Ed.) *The Limits to Scarcity: Contesting the Politics of Allocation* (pp. 195-214). London: Earthscan.

Leach, M., Means, R. & Scoones, I. (1999). Environmental entitlements: dynamics and institutions in community-based natural resource management. *World Development*, 27(2): pp. 225-247.

Loftus, A. (2005). Free Water as a Commodity: The Paradoxes of Durban's Water Service Transformation. In D. McDonald & G. Ruiters (Eds.) *The Age of Commodity: Water Privatization in Southern Africa*. London: Earthscan, pp. 189-203.

McDonald, D. & Ruiters, G. (Eds.) (2005). *The Age of Commodity: Water Privatization in Southern Africa*. London: Earthscan.

Mehta, L. & Punja, P. (2006). Water and well-being: explaining the gap in understandings of water. In: A. Baviskar (Ed.) *Waterscapes: The Cultural Politics of a Natural Resource* (pp. 188–210). Delhi: Permanent Black.

Mehta, L. (2006). Do human rights make a difference to poor people? The case of water in South Africa. In P. Newell & J. Wheeler (Eds.) *Rights, Resources and Accountability*, (pp. 63–78). London: Zed.

Mehta, L. (2005). *The Politics and Poetics of Water: Naturalising Scarcity in Western India*. New Delhi: Orient Longman.

Mehta, L., Allouche, J., Nicol, A. and Walnycki, A. (2013). *Global Environmental Justice and the Right to Water*. *Geoforum*, in press.

Meinzen-Dick, R.S. & Bruns, B. (Eds.) (1999). *Negotiating Water Rights*. London: Intermediate Technology.

Mosse, D. (2003). *The Rule of Water: Statecraft, Ecology, and Collective Action in South India*. New Delhi: Oxford University Press.

Movik, S. (2012). *Fluid Rights: South Africa's Water Allocation Reform*. Cape Town: Human Sciences Research Council Press.

Nussbaum, M.C. (2003). Capabilities as fundamental entitlements: Sen and social justice. *Feminist Economics*, 9(2–3) pp. 33–59.

Nussbaum, M.C. (1987). *Nature, Function, and Capability: Aristotle on Political Distribution*. Helsinki: World Institute for Development Economics Research.

Ohlsson, L. & Turton, A. (2000). The turning of a screw: social resource scarcity as a bottle-neck adaptation to water scarcity. *Stockholm Water Front - Forum for Global Water Issues*, 1. Stockholm: Stockholm International Water Institute (SIWI).

Plant, R. (1998). Citizenship, Rights, Welfare. In J. Franklin (Ed.) *Social Policy and Social Justice* (pp. 57–72). Cambridge: Polity Press.

Rawls, J. (1971). *A Theory of Justice*. Cambridge: Harvard University Press.

Razavi, S. (1999). Gendered poverty and well-being: introduction. *Development and Change*, 30(3) pp.409–33.

Robeyns, I. (2000). *An unworkable idea or a promising alternative? Sen's capability approach re-examined*. Discussion paper 00.30, Center for Economic Studies. Leuven: University of Leuven.

Robeyns, I. (2003). Sen's Capability Approach and gender inequality: selecting relevant capabilities. *Feminist Economics*, 9(2–3), pp. 61–92.

Robeyns, I. (2005). The Capability Approach: a theoretical survey. *Journal of Human Development*, 6(1), pp. 93–114.

Rosegrant, M.W., Cai, X. & Cline, S.A. (2002). *World Water and Food to 2025: Dealing with Scarcity*. Washington: International Food Policy Research Institute and the International Water Management Institute.

Roth, D., Boelens, R. & Zwarteveen, M. (Eds.) (2005). *Liquid Relations: Contested Water Rights and Legal Complexity*. New Brunswick, New Jersey and London: Rutgers University Press.

- Roy, A. (1999). The greater common good: the human costs of big dams. *Frontline*, 16(11).
- Seckler, D., Amarsinghe, U., Molden, D., De Silva, R., & Barker, R. (1998). *World Water Demand and Supply, 1990 to 2025: Scenarios and Issues*. Colombo: International Water Management Institute.
- Sen, A. (2004). Elements of a Theory of Human Rights. *Philosophy and Public Affairs*. 32:4. 315-356.
- Sen, A. (1999). *Development as Freedom*. Delhi: Oxford University Press.
- Sen, A. (1993). Capability and Wellbeing. In M. Nussbaum & A. Sen (Eds.) *The Quality of Life* (pp. 30–53). Oxford: Clarendon Press.
- Sen, A. (1992). *Inequality re-examined*. Oxford: Clarendon Press
- Sen, A. (1987). *On Ethics and Economics*. Oxford: Basil Blackwell.
- Sen, A. (1985). *Commodities and Capabilities*. Amsterdam: North-Holland Press.
- Sen, A. (1984). *Resources, Values and Development*. Cambridge, MA: Harvard University Press.
- Sen, A. (1983). Development: which way now? *The Economic Journal*, 93(372), pp. 745–62.
- Sen, A. (1981). *Poverty and Famines: An Essay on Entitlement and Deprivation*. Oxford: Clarendon.
- Shiklomanov, I.A. (1998). *World Water Resources. A New Appraisal and Assessment for the 21st Century*. Paris: UNESCO.
- Srinivasan, S. (2007). No Democracy without Justice. Political Freedom in Amartya Sen's Capability Approach. *Journal of Human Development*. 8:3, 457-480.

Steward, F. (2001). 'Book review: Women and Human Development: The Capabilities Approach by Martha Nussbaum,' *Journal of International Development*, 13, 1191-1192.

Sultana, F. and Loftus, A. (Eds.) (2011). *The Right to Water: Politics, Governance and Social Struggles*. London: Routledge.

Toye, J. (2005). What did economists do with scarcity? Presentation at the conference 'Scarcity and the Politics of Allocation', IDS, Brighton.

United Nations Development Programme (UNDP) (2006). *Beyond Scarcity: Power, Poverty and the Global Water Crisis*. Basingstoke: Palgrave.

UNEP (2004). Exploring the Links. Human Well-being, Poverty and Ecosystem Services. Nairobi: UNEP

UNESCO (various). The United Nations World Water Development Report. Paris: UNESCO. <http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/wwdr/> accessed November 2013.

van Koppen, B., Moriarty, P. & Boelee, E. (2006). *Multiple-use water services to advance the Millennium Development Goals*. IWMI Research Report, 98.

Vizard, P. (2005). *The contributions of Professor Amartya Sen in the field of human rights*. CASEPaper, 91. London: LSE.

World Commission on Dams (WCD) (2000). *Dams and Development: A New Framework for Decision-Making*. London and Sterling, VA: Earthscan.

WHO (2003). *The right to water*. Health and Human Rights publication series, 3. Geneva: WHO.

Wolfe, S. & Brooks, D.B. (2003). Water scarcity: an alternative view and its implications for policy and for capacity building. *Natural Resources Forum*, 27(2), pp. 99–107.

¹ Adam Smith, too, was concerned with necessity as the 'ability to appear in public without shame' (quoted in Sen, 1999: 73).

Thus he goes beyond income and 'necessity' is seen to encompass as Sen would say, the freedom to participate in the life of a community without shame. Thus the focus is not just on the commodities, but instead on the freedoms generated by them (Sen, 1999: 74). Here too, the links with water and sanitation are obvious. Only through access to sufficient, safe and affordable water and sanitation, are individuals free of disease, clean, liberated from the time otherwise spent in water collection, and thus able to participate in the life of the community.

² This article focuses largely on Amartya Sen's work but also draws on Martha Nussbaum's works on capabilities and other interpretations of entitlements and capabilities.

³ It is beyond the scope of this article to deal with the roles of institutions in enhancing water supply and water access. Hence debates of institutionalism are not handled.

⁴ See <http://www.epsrc.ac.uk/SiteCollectionDocuments/Calls/2010/WaterForAllSandpitCall.pdf>, accessed October 2011.

⁵ There is key difference between 'actual living' and 'freedom to achieve.' The often fluid nature of water may make it difficult to see how free people with regards to what they can achieve with regards to water.

⁶ <http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=10403&LangID=E>, accessed January 2012.

⁷ UNEP has focussed on the multi-dimensional nature of ecosystems and poverty by drawing on capabilities and Sen's conceptions of wellbeing. It has also focussed on empowering individuals to become agents of change (see UNEP, 2004).