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## **Toward a Critical Water Security: Hydrosolidarity and Emancipation**

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### **ABSTRACT**

Traditional approaches to water security presume that water will be a primary vehicle that will drive conflict in the future, and may in fact lead to war between states or armed intra-state groups. This paper begins by pointing out the limitations of the connections between water scarcity and traditional security and examines the role of emancipation as an aim for the study and practice of water security. It aims to uncover the complex relationships individuals and political communities have with scarce water sources; relationships that defy simple classification as competitive and protectionist, as traditional security views might have us believe. An individual's connection with water is characterized by a wide and shifting confluence of personal and social needs and identities. Thus, this paper seeks to reveal the wide range of approaches used by individuals and political communities to manage their relationships with water, and more broadly, with each other. In particular, the concept of "hydrosolidarity" is studied as a potential emancipatory alternative to hostility, strategy, and conflict in water relations.

Les approches traditionnelles liées à la sécurité de l'eau nous laissent à penser qu'à l'avenir, l'eau deviendra une source principale de conflits et qu'elle pourrait mener à des guerres entre états ou entre des groupes armés intra-étatiques. Cet article souligne tout d'abord les limites du rapport entre la rareté de l'eau et la sécurité traditionnelle puis, il évalue le rôle de l'émancipation en tant que finalité pour l'étude et la mise en oeuvre de cette sécurité. Il vise à explorer les rapports complexes qui se sont créés entre les communautés et les individus du fait de l'accès aux sources des eaux devenues rares. De par leur nature, ces rapports vont au-delà des catégories traditionnelles qu'elles soient d'ordre compétitive ou protectionniste. Le rapport d'un individu à l'eau est caractérisé par la convergence de besoins et la prise en compte d'identités sociales et personnelles. Dès lors, cet article cherche à révéler les approches diverses dans lesquelles les individus et les communautés politiques abordent cette problématique de la sécurité de l'eau, et surtout dans la manière d'y faire face entre eux. En particulier, le concept de "l'hydro-solidarité" est considéré comme étant une alternative à fort potentiel en réponse à l'hostilité, à la stratégie, et aux conflits armés liés à la sécurité de l'eau.

**Keywords:** Critical Security Studies, Emancipation, Hydrosolidarity, Integrated Water Resources Management, Water.

## **Introduction**

For the past three decades, the story often told has been one of a “coming anarchy,” where a host of environmental problems, in which water factors significantly, inevitably erodes the state’s capacity to govern. (Kaplan 1994; Homer-Dixon 1994, 1999, 2013; Klare 2001; Dwyer 2007; CNA 2007; DIA 2012) According to this type of interpretation, this will eventually lead to an upswing of violence as states and groups fight over access to and control of dwindling natural resources, while at the same time experiencing their effects as conflict multipliers, coalescing with simmering ethnic and historical tensions.

The persistence of this type of thinking has led to the conclusion that water will drive conflict in the future, and is likely to lead to instability, state failure, and increase regional tensions. (DIA 2012; Ban 2008; Association of American Geographers 2001) However, the continued reliance on familiar tropes of water scarcity leading to war and conflict is problematic in a number of ways. First, it ignores the historical record, which displays a distinct absence of water wars. (Wolf 1998; De Stefano, Edwards, de Silva and Wolf 2010) Secondly, freshwater scarcity and ecosystem degradation hold far more importance as an inevitable source of conflict than “21st Century oil.” Water is more important than other resources, including oil. As Steven Solomon (2010: 367) puts it, “Oil is substitutable, albeit painfully, by other fuel sources, or in extremis, can be done without; but water’s uses are pervasive, irreplaceable by any other substance, and utterly indispensable.” Thirdly, focusing upon historically absent and hypothetical future water wars obscures the complex relationships individuals, communities, and ecosystems have

with scarce water sources; relationships that defy simple classification as competitive and protectionist. (Zeitoun, Mirumachi, and Warner, 2010) The result is that it diverts attention away from more pressing concerns related to the sustainable management of water resources and the integration of holistic water practices ensuring equitable distribution, which is fundamental to empowering individuals so that they may live a good life. Finally, it reflects an uncritical allegiance to state-centric, traditional security approaches to managing security, approaches that have been clearly ineffective for most individuals on the planet. Narratives that causally link water scarcity and conflict reinforce the deeply embedded assumptions of just what security means (survival) and for whom it exists (states).

Despite the tenuous links between resource exploitation and conflict, there has been a continued tendency to situate resource wars as a prevailing fact of history and an inevitable focus for the future. However, there are developments that point to alternative understandings of water in an international context. This article looks at the theoretical development of the concept of *hydrosolidarity* and its potential institutional development in the actions of the United Nations Development Programme (UNDP)-led policies of *Global Water Solidarity*, as one important alternative. Such reorientations of water security may demonstrate the latent emancipatory potential found in water security.

Robert Cox claims that “ontology lies at the beginning of an inquiry. We cannot define a problem in global politics without presupposing a certain basic structure consisting of the significant kinds of entities involved and the form of significant relationships among them...There is always an ontological starting point.” (Cox 1996: 144) It is true that the continued frequency of popular warnings that privilege Malthusian

concerns over dwindling water supplies and increasing human needs reflect deeper-rooted philosophical allegiances. When a wide range of world leaders, including the past three UN Secretary Generals, at one point or another, raise dire warnings of impending violence over water, they are reflecting long-held assumptions about the purpose and possibilities of international security, itself symptomatic of much deeper beliefs. When the United Kingdom's Secretary of State for Energy and Climate Change, Ed Davey, warned an audience in 2013 that "water wars are just around the corner," (Harvey 2013) he was not simply reporting facts, but was signalling a commitment to water security defined and held within a traditional ontological interpretation of state self-preservation, political enmity, and human control over nature. Water security is, in this regard, illustrative of what Horkheimer and Adorno referred to as a "corrosive rationality" that binds existence with repetition. In their reading, reason becomes locked in instrumental terms, in the service of domination and control, rather than in progress or emancipation. In modern terms, an idea of inevitability sets in because that which is sets the boundaries of possible experience. These boundaries work (like mythology) to reflect and replicate the essence of the existing order – characterized as cyclical motion, fate, domination of the world, and the renunciation of hope. (Horkheimer and Adorno [1944] 2004: 20)

The starting point of this article then is an acknowledgment that conceptions of security are conditioned by larger understandings of being and reality, and that water security in particular is emblematic of traditional allegiances within the subject of international relations that are resistant to change. It takes this critical observation and extends it to examine the possibilities for emancipation in water security.

## **The Place of Emancipation in Water Security**

Much of the water security literature follows the same trajectory as the broader environmental security literature. It evokes a picture of water as a dwindling natural resource that has the potential to act as a threat multiplier in an age of climate insecurity and domestic upheaval in a warming world. This literature admits that while it is difficult (perhaps impossible) to find a major conflict precipitated over water resources, water is often an important variable in conflict and is emblematic of the increasing importance of environmental factors going forward in the twenty-first century. Against this background, there is a need to critically shift the trajectory of water security towards a critical engagement with its emancipatory characteristics. Water can act as a progressive site for the articulation of emancipatory policies based upon cosmopolitan ethics.

Emancipation is a complicated and thorny concept - one that has received relatively minor attention despite being a central component of critical security. Its pursuit is the central intent of scholars who follow the Frankfurt School model of critical theory. Indeed, while critical theory comprises hugely diverse approaches, the linkage between all of them is “the emancipatory intent.” (Bronner 2001) The definition relied upon here was formulated by Ken Booth, perhaps the most prominent theorist of the “Welsh School” of security studies. He conceived of emancipation as “the philosophy, theory, and politics, of inventing humanity.” (Booth 2007: 112) This deliberately obscure definition holds within it the possibility of progress, but it is a view of progress that is both dynamic and reversible. The practical fulfillment of security as emancipation requires the freeing of individuals from arbitrary structures preventing them from living as they would otherwise wish. (Booth 2007; Wyn Jones 1999) It entails overturning

structures of oppression or exclusion. Its principal characteristics are that it is radically cosmopolitan; predicated on the rights and needs of the most vulnerable; and that the means envisaged to achieve or preserve ‘security’ will not deprive others of it. (McDonald 2011: 7-8) Given that individuals’ experiences of security and insecurity are heavily tied to their access to water resources, it is logical to situate the critical concept of emancipation as a rejoinder to traditional, dominant security discourses.

While the first generation of Frankfurt School theorists grew increasingly pessimistic about the possibilities for emancipatory social change, they also knew that enlightenment contains within it the perpetual possibility of change. An emancipatory vision of water security does not seek to escape the concept of security altogether, but to critique it, so as to reveal the progressive spirit of emancipation immanent within discourse and practice. By identifying the junctures where water coalesces with marginalized individuals and communities to help articulate different interpretations of security, it becomes possible to decentre the analytical and prescriptive situation of the state, thereby suspending assumptions about traditional hierarchies of values and issues in international security. (Boardman 1997: 42) This, it is argued, has both analytical and normative value.

In terms of analytical benefit, the critical approach elaborates a wide range of relationships that individuals and communities exhibit over shared waterways. This creates better analyses of “water security” by making it clear that traditional approaches - with their focus on state and system level interactions – are not sufficient for explaining the existing and potential effects of freshwater scarcity on individuals and communities. Political responses and approaches to the issue of water scarcity would indeed be well

served to take heed of the elaboration of critical water security found here. Given that many new and innovative approaches to water management depend upon holistic values and rely upon interdependent, cross-sectoral cooperation (Integrated Water Resources Management – IWRM - being only one, albeit controversial, example), the non-statist and cosmopolitan ethics at the heart of critical security analyses seem exceedingly prescient and appropriate for study.

The normative benefits to be derived from reevaluating traditional “hierarchies of values and issues in international security” is found by first acknowledging the complicity of traditional approaches in creating the unsustainable conditions they seek to diagnose and manage (if not cure). As many studies show, the global environmental situation in the early twenty-first century displays crises on a scale not yet experienced in human history.<sup>1</sup> The interrelated nature of the epochal, structural, and decisional crises, require new and radical responses that push development of a world security. It is in such political arrangements, underscored by ethical attachments, that we are best able to achieve ‘security’ without depriving others of it. (Booth 2007: 427) A water security developed to meet both human and environmental needs, through a form of cosmopolitan ethics, is one component of a global response to shared threats and vulnerabilities.

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<sup>1</sup> There are thousands of publications from which to choose to illustrate this statement. Some recent sources include: United Nations Environment Programme (UNEP) 2012. *Keeping Track of Our Changing Environment*, UNEP. Online 21 November 2012. < [http://www.unep.org/geo/pdfs/Keeping\\_Track.pdf](http://www.unep.org/geo/pdfs/Keeping_Track.pdf)>; World Meteorological Organization, 2012a “The State of Greenhouse Gases in the Atmosphere Based on Global Observations through 2011,” *WMO Greenhouse Gas Bulletin* No. 8, 19. Online. 22 November 2012. < [http://www.undp-aap.org/sites/undp-aap.org/files/GHG\\_Bulletin\\_No.8\\_en.pdf](http://www.undp-aap.org/sites/undp-aap.org/files/GHG_Bulletin_No.8_en.pdf)>; World Meteorological Organization, 2012b. “WMO statement on the status of the global climate in 2011.” World Meteorological Organization. Online. 22 November 2012 <[http://www.wmo.int/pages/publications/showcase/documents/WMO\\_1085\\_en.pdf](http://www.wmo.int/pages/publications/showcase/documents/WMO_1085_en.pdf)>; Pacific Institute. 2011. *The World's Water: The Biennial Report on Freshwater Resources*, Vol. 7, (Washington D.C.: Island Press.)

## **The Roots of Hydrosolidarity**

Hydrosolidarity emerged in the 1990s as a conceptual marker used to overcome prevailing water management practices that emphasized “hydroegoism.” Hydroegoism is the belief that individual, competing, interests guide water allocation decisions, with conflict frequently resulting from the interactions by diverse stakeholders. In response to growing dissatisfaction with hydroegoism, a number of junior water professionals in Sweden convened seminars at the 1998 Stockholm Water Symposium to present alternative voices that promoted a new twenty-first century water management ethics built on justice, equality, and cooperation. Following these discussions, famed Swedish hydrologist Malin Falkenmark became one of the first to use the term “hydrosolidarity” in her October 1998 Volvo Environment Prize acceptance speech in Brussels, Belgium. (Stockholm International Water Institute 2002). In her speech, Falkenmark highlighted how,

Much stress is presently being put on human rights to water; what is tacitly being referred to is not water as such, but the provision of safe household water. The fundamental importance for humanity's future, of finding ways for peaceful sharing of the precipitation falling over a joint river basin, between those living upstream and those living downstream, however, suggests that there is a need for human "water solidarity." Human water obligations have to be given equal weight to the human right to safe household water. Given a situation where upstream and downstream countries have problems in agreeing on issues relating to the sharing of transboundary water systems indicates the need to seek support from religious and philosophical circles in the search for a water ethics. (Falkenmark 1998: 361)

Falkenmark and her colleagues at the Swedish International Water Institute (SIWI), one of the world’s leading water think tanks, began to promote the integration of ethics and human rights into what had until then had been mostly technical variables of water management. Seminars on hydrosolidarity were organized during World Water Weeks in the early 2000s and a special session devoted to hydrosolidarity was a part of the 2003

World Water Forum in Kyoto, Japan. A few special issues of academic journals were organized around the role of hydrosolidarity and ethics in water. Perhaps the foremost journal to engage with the concept of hydrosolidarity has been *Water International*. It published a special issue in June 2000 dealing with the subject as its central theme. In 2003 (the International Year of Freshwater) Falkenmark edited a special issue of the science journal *Philosophical Transactions of the Royal Society (B)* that “assessed the current status and knowledge of the freshwater dimension in our biosphere and its relationship to human welfare.” (Falkenmark 2003: 1917) The issue now reads as one of the more comprehensive attempts to produce a more formalized understanding of what hydrosolidarity entails, besides just an aversion to hydroegoism. Carl Folke, a professor at Stockholm University and a frequent collaborator with Falkenmark, attempted to provide a foundation for hydrosolidarity. Folke concluded that hydrosolidarity was the necessary forward path for future water security because we are living in an age where change is the rule rather than the exception. As a result, “resilience has been eroded and [that] the challenge facing humanity is to try to sustain desirable pathways for development in the face of change.” (Folke 2003: 2027) For Folke, and the early adopters of hydrosolidarity, resilience entails setting up the socio-ecological systems to cope with and live with change, uncertainty, and surprise. Folke concluded that effective management of freshwater supplies in a dynamic system requires an awareness of the social dimensions in developing adaptive co-management strategies. For him, the complex interrelationships between hydrological, ecological, and social issues requires a much broader vision of water security that can acknowledge that water is the

“bloodstream of the biosphere’s capacity.” (Folke 2003: 2027) Folke concluded the article by writing,

Stewardships of freshwater in dynamic landscapes to secure and enhance social and economic development will no doubt be a central issue in the near future. It requires a shift in thinking and management of freshwater as merely a resource to freshwater as the breath of the Earth. It also requires a shift from trying to control and allocate freshwater flows in an optimal manner for various human uses to recognition of the necessity to actively manage the essential role of freshwater in dynamic landscapes faced with uncertainty and surprise. It will require that those involved with freshwater management foster a worldview and vision of stewardship of freshwater as the bloodstream of the biosphere. This broader view of freshwater provides the foundation for hydrosolidarity. (Folke 2003: 2033-2034)<sup>2</sup>

The first articles on hydrosolidarity focused on constructing a water ethics that emphasized the resource’s interconnected properties and processes. In these articles, water was seen as the linchpin linking numerous global crises. “The crises related to land degradation, food security, water quality degradation, ecosystem decline, water insecurity, poverty, and economic losses from extreme hydrologic events are all interlinked, the root causes stem from government policy failures, and both the North and the South have much work to do to address the issues.” (Duda 2003: 2051) The central focus was to take knowledge gained from a number of river basins to address the connected issues of land use, water use, energy, and the protection of ecosystems while also dealing with empirical cases of national upstream-downstream conflicts of interest. The intention of the first articles dealing with hydrosolidarity was to build awareness that water issues are interconnected; that water basins need to be managed with integrative approaches; and that engaging a diverse group of stakeholders was necessary to ensure

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<sup>2</sup> Other authors in the special journal issue also made use of the “bloodstream” metaphor for water. See Wilhelm Rippl, “Water: The Bloodstream of the Biosphere,” *Philosophical Traditions of the Royal Society (B)* 358, 2003: 1921-1934.

efficient, equitable, and sustainable water management. In the first years of its usage, hydrosolidarity was meant to encourage cooperation based on an appreciation of these interconnections. Solidarity in decision-making in a river basin – between upstream and downstream, rural and urban, human and environmental needs – was the essential component that would foster stability and responsible stewardship of precious water resources.

Since the first years, hydrosolidarity has evolved to encompass a range of approaches that incorporates aspects of ethics into water security. Falkenmark and Folke have used the concept of hydrosolidarity to argue that previous water management strategies failed to adequately account for the dynamic, complex, and inter-linked biological and social systems. Beginning from the starting point that humans both shape the processes of the biosphere and are simultaneously dependent on its proper functioning, they recently modified the original hydrosolidarity term and replaced it with the (rather clumsy) *ecohydrosolidarity*. While still upholding the original intention of relying on basic principles of solidarity for balancing seemingly incompatible interests in a basin, the new term is meant to make note of smaller-scale catchment areas. Thinking in these terms involves acknowledging that rainwater catchments are “interdependent social-ecological systems with institutions and multigovernance systems” that should develop adaptive management approaches in order to create *ecohydrosolidarity* within and between regions and nations. (Falkenmark and Folke 2010) The modification is not all that severe conceptually, so it seems curious the two authors would bother to inject new nomenclature.

An article written in 2011 by Andrea Gerlak and her colleagues produced probably the most comprehensive study of the concept of hydrosolidarity. In their article published in *Water International* titled, “Hydrosolidarity and beyond: can ethics and equity find a place in today’s water management?” Gerlak et. al provided an overview of its short intellectual history and its evolving application, arguing that it has “emerged as a mechanism to inject issues of social justice and human rights into a discussion about water that had been largely driven by technical and political variables that influence water management, especially in the international arena.” (Gerlak, Varady, Petit, and Haverland 2011: 60) According to the authors, hydrosolidarity’s most valuable contribution is its continued use as a synonym for ethically based behaviour. (Gerlak, Varady, Petit, and Haverland 2011: 60)

The integration of hydrosolidarity as a discursive marker for ethical behaviour in water security is meant to embolden alternative approaches to “business as usual” models in water security that continue to exploit water resources for strategic gain, with too little attention paid to sustainability, environmental consequences, or human suffering. By incorporating a sense of ethical understanding into what had largely been only technically-driven solutions, hydrosolidarity means to encourage a framework that respects common human values. As William J. Cosgrove, the former President of the World Water Council, wrote in 2003, “Respect for shared human values will eventually prove to be the key to sound management of the world’s water resources in the sustainable service of human development.” (Cosgrove 2003: 530) The fact that the head of the largest governing body of water organizations and professionals adamantly declared the necessity of using ethical considerations in managing increasing water stress

is an important indication that hydrosolidarity is an attractive and useful component of twenty-first water security.

### **The Promise and Peril of IWRM**

Hydrosolidarity encompasses a wide range of processes that broadly encourages incorporating ethical considerations into more technical, scientific, environmental planning. It can now be seen as the primary ethical component upon which the dominant paradigms of complex water management strategies are built. In particular, it is been increasingly associated with the strategies of integrated water resources management (IWRM), though often such ethical considerations are avoided or left unacknowledged. This section will define IWRM, delineate its key features and historical progress, and summarize the main criticisms of IWRM. It will conclude by offsetting a measured degree of support for IWRM with calls for much further ethical engagement. It leads into the final section, which provides promising emancipatory alternatives to IWRM embedded in contemporary water discourse.

IWRM is best defined as a “process that promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.” (Global Water Partnership (GWP) 2000: 22) IWRM begins by stipulating that water needs to be treated as a single environmental resource, allocated to the main societal water users: industry, agriculture, and households. According to IWRM frameworks, this allocation is most efficient and sustainable when participatory public policy frameworks are used involving all affected stakeholders. In this regard, IWRM incorporates social factors into analyses while also taking stock of the

interconnected physical attributes of surface water, groundwater and the ecosystems through which they flow. The idea of integration extends through the physical management of water resources as well as the wider social context through the pursuit of consensus building with the input of stakeholders from all levels. (GWP 2000: 22)

There is no specific blueprint for implementing IWRM. It is better seen as a set of principles from which best practices, sensitive to individual contexts, can be implemented. IWRM has been formulated to combat a host of problems related to water governance – problems related to conflict, cooperation, distribution, protection, and sustainability of water resources. It would not make sense to construct a rigid set of guidelines that would work around the world, in every case. Instead national and regional institutions are urged to develop their own types of IWRM practices engaging collaboratively with those who would be affected as well as engaging with the emerging global consensus on the necessarily broad parameters of achieving sustainable and equitable resource security. In particular IWRM recognizes the importance of water quality issues which leads it to pay special attention to the poor; to the role, skills and needs of women; and to vulnerable areas such as small island states, landlocked countries, and desertified areas. (Brauch 2007: 140)

In 2000 the Global Water Partnership (GWP) produced the first authoritative definition of IWRM. No unambiguous definition had been created up to that point and no answer to how its principles might be put into practice had been devised. GWP sought to correct this and it defined IWRM as a holistic approach that understands managing water demand is as important as managing its supply. In so doing it linked together wider social, economic, environmental, and technical dimensions of water management. The

justification for these linkages is based upon a belief, to put it simply, that humans and the decisions they make determine how water is used or misused. Thus there must be an integrated policy-making process that involves all the various concerned stakeholders. Because stakeholders often hold conflicting interests and their objectives concerning water resources management may be oppositional, negotiations organized with IWRM principles develop operational tools for conflict management and resolution. The important objective in preparing appropriate conflict resolution tools is to “identify and designate water resources management functions according to their lowest appropriate level of implementation; at each level the relevant stakeholders need to be identified and mobilized.” (GWP 2000: 29)

IWRM is the most popular approach to water management today. (United Nations Development Programme (UNDP) 2006; GWP 2004) The 2012 UN-Water assessment survey found that since 1992, 80 percent of countries around the world had implemented some level of integrated water resources management strategy. (United Nations Environment Programme 2012b: 8) As an attempt to integrate previously wide-ranging and isolated water management practices into one holistic framework, it has become remarkably popular. The overriding criterion that propels IWRM is interconnectedness, between economic, social, and environmental conditions. IWRM approaches to water management require adherence to the conditions of “*economic efficiency in water use, social equity, and environmental and ecological sustainability*” (emphasis in original). (GWP 2000: 30) These three pillars buttress the three central elements needed for successful implementation: *enabling environments* (e.g. creating a general framework of rules, laws, legislation, information), and *institutional roles* (e.g. delineating precise roles

for stakeholders), and *managing instruments* (e.g. providing operational tools for effective implementation, regulation, monitoring and enforcement of agreed upon rules).

By the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, IWRM was seen as the future foundation for water governance systems and part of a broader package of international strategies for achieving the Millennium Development Goals (MDG). (UNDP 2006: 170) It was viewed as a necessary element for achieving the goal to halve, by the year 2015, the proportion of people that are unable to reach or afford safe drinking water, and the proportion of people without access to basic sanitation. In March 2012, the United Nations Children Fund (UNICEF and the World Health Organization declared that the MDG target was indeed reached, three years ahead of schedule.

With the publication of the WSSD *Implementation Plan*, IWRM was cemented as the pre-eminent guide for water management. Over the succeeding decade its principles have been repeated almost as a mantra in large environmental mega-conferences. The GWP and the World Bank now consistently stress integrated approaches that take into account the downstream social and ecological costs of building dams, irrigation schemes, and other forms of water management. Every World Water Forum, every UN World Water Development Report, every World Water Week, points to IWRM as a set of necessary guiding principles.

### **Critiques of IWRM**

IWRM is not universally supported. It has received a fair amount of criticism that, while likely not dislodging its position as pre-eminent water strategy, does indicate

significant dissension among water scholars and practitioners. The criticisms have been varied. Some offer pointed and specific critiques of IWRM, while broadly agreeing with its general framework. Biswas (2004) argues that its definition is amorphous, which can lead to difficulty in actually implementing most of its components. He also maintains that what works for one area cannot *prima facie* be expected to work for another, where different institutions, with different stakeholders, and interests exist. He writes, "Water management must be responsive to the needs and demands of a growing diversity of central, state and municipal institutions, user groups, private sector, NGOs, and other appropriate bodies. Concentration of authorities into one or fewer institutions could increase biases, reduce transparency, and proper scrutiny of their activities." (Biswas 2004: 255) Kirshen, Cardwell, Kartez, and Merrill (2011) argue that IWRM needs to better account for hydraulic uncertainties that will arise as a result of climate change. Jonch-Clausen and Fugl lament that IWRM has "degenerated into one of those buzzwords that everybody uses but that mean different things to different people." (2001: 502)

Deeper critiques have also been levelled that question the underlying philosophy behind IWRM. Many point to the tendency among IWRM proponents to ignore social aspects of water management in favour of technical solutions that appease growing water demand. Many of these deeper critiques are in essence an attack on the dominance of instrumental rationality at the expense of politically-sensitive assessments that acknowledge alternatives to traditional state-led management processes. Allan makes the case that IWRM policy makers do not realize that cultural, spiritual, and economic factors are as important as sustainability in managing water. For him, the political nature

of IWRM needs to be better acknowledged. (Allan 2003) McDonnell argues against the dominance of narrow, positivist, and techno-scientific frameworks integrated in IWRM analyses. (McDonnell 2008) Rahaman and Varis (2005) extend this critique against IWRM's belief that privatizing the marketable aspects of water will result in single-purpose planning and management. For them, this approach ignores the ethical and practical difficulties in implementing planning strategies uniformly around the world. The differences between regions means full-cost recovery may not be possible in great areas of the global south where infrastructure is deficient or incomplete.

As might be expected, the participants at Alternative World Water Forums have also put forth significant criticisms of IWRM. The Bradford Centre for International Development, an organizer of the 2003 Alternative World Water Forum, argued the 'global water consensus,' is, "narrowly underpinned by neo-liberal principles, dominated by technical and managerial concerns and informed by limited methodologies and empirical data. NGOs and campaigning groups have questioned the pro-privatization focus of the consensus, the neglect of environmental and ecological concerns and equity issues." (Splash Water Governance Research 2012)

These deeper criticisms argue against instrumental rationality that canonizes impartial data collection and the innate good will of partners, essentially ignoring the deeply political processes at work. Such approaches are, at best, insufficient for alleviating complex and political water problems, and, at worst, culpable in their continuation. In making oblique reference to IWRM as evidence of a holistic approach to individual water securing, various constituents may only be providing smokescreens to further their own entrenched interests, confirming business-as-usual policies. The

outcome, according to these critics is that entrenched power asymmetries are replicated, with the state acting as the sole and necessary entity to produce effective water security. As François Molle puts it, "the entire process appears to be naturally steered by the state...with a consequent high likelihood of reproducing paternalistic, technocratic, and bureaucratic and top-down conventional approaches, modified only by whatever degree of participation is allowed." (Molle 2008: 134)

IWRM compels planners and practitioners to assess the wide confluence of factors that are necessary to adequately manage water resources. In this sense IWRM represents a more holistic approach to water security. It promotes multiple connections – connections in ecology by mixing water, land, and related resources; connections in economics by promoting efficiency and equality; connections in politics by promoting institution-building, institutional resilience, and coordinating often competitive and segmented intra and inter government departments; and finally it promotes connections in society by encouraging the inclusion and participation of different stakeholders in water policy planning, and by acknowledging the specific gendered effects that water places on women. However, does IWRM truly exemplify emancipatory water security? Does it bring us closer to an ontology of security with individuals and their well being at its core? IWRM does represent certain emancipatory understandings of human security. It promotes inclusion, pursues the peaceful and efficient allocation of water across borders and along shared waterways, and it is claimed to be built upon a foundational ethics of hydrosolidarity that propounds the value of discussion, negotiation, and deliberation amongst different stakeholders.

To see IWRM as a wholly emancipatory alternative would be overstating its value and purpose for a variety of reasons, even though its constituent parts do point to a progressive re-ordering of water security. Primarily, IWRM remains at its core a statist, technically-driven platform that is designed and implemented from the top-down. And while such strategies may be useful for making large-scale policy decisions and consolidating disparate planning strategies, it too often results in the continuation of instrumentalist conceptions of water security, that fail to account for the ethical underpinnings of water management in different contexts.

IWRM cannot, at least on its own, be viewed as illustrative of a sufficiently emancipatory alternative. The scientific and technical rationality at its heart is overemphasized at the expense of normative judgments. IWRM may reflect a growing awareness amongst water professionals and policy makers for the need for more holistic thinking in water management and security, but it pays little overt attention to the ethics involved in managing water security generally failing to incorporate hydrosolidarity into its evaluations. Every decision that is taken with regards to water has embedded within it an ethical component – this is one of the key insights that critical theory teaches. To ignore that is to cede ground to dominant paradigms of instrumentalist control, which are so problematic in security contexts.

### ***Global Water Security: Emancipatory Water Security or Chimera?***

The terms of IWRM represent multiple progressive steps but they are only one partially realized example of the emancipatory potential in water security. While it has largely reflected a technical, managerialist outlook on water, at the expense of developing

a larger, progressive ethical foundation, IWRM is not the only arbiter of global water relations; there are other expressed forms of hydrosolidarity that can be seen in contemporary global water relations.

One new development signals an awareness of the progressive appeal of water security that has arisen since 2010, receiving its most explicit formulation during the 2012 World Water Forum, in Marseilles, France. “*Global Water Solidarity*” (GWS) is a worldwide initiative that aims to bridge the multiple levels of water stakeholders in order to advance cooperative ties. GWS has been established to replicate highly successful development efforts called “decentralized solidarity mechanisms (DSMs).” GWS seeks to engage the multiple levels of governance that is required to manage water resources, especially in vulnerable areas of the world. By placing importance on multiple actors across space and scale, GWS should be seen as an innovative response to the deficiencies of modern water security. It is defined as a, “coalition of local, regional and national governments public and private institutions and civil society organizations from Europe, Asia, and Africa.”(UNDP 2012b) It works in a variety of ways to demonstrate an embedded emancipatory alternative to competitive water scenarios. Principally, by focusing on the nascent level of, cooperation, ethical responsibility, and local participation amongst water users across varying degrees of distance it exemplifies the nature of emancipatory water security.

Originally, the GWS initiative was first proposed by the UN Development Programme in late 2010 to mobilize technical and financial resources to support local governments from the developing world in their efforts to meet MDG 7C, which seeks the reduction by half of the proportion of people without sustainable access to safe

drinking and basic sanitation. It was thought that by scaling up the already existing and successful policies of DSMs, it would be possible to harness the existing political will to combat water scarcity and improve sanitation conditions for vulnerable populations in the developing world, with a special focus on Asia-Pacific and Africa. The impetus behind the upward shift from DSMs to *Global Water Solidarity* was a belief that it was politically feasible, technically achievable, and ethically desirable.

Because DSMs were originally set up as a way to further the progress in achieving the UN's MDGs<sup>3</sup> related to water (specifically Target 7c), they should be seen as a success story. In March 2012, just before the opening of the Sixth World Water Forum, UNICEF and the WHO declared that the MDG target for drinking water had been reached, well ahead of the 2015 deadline. (UNICEF 2012) This was one of the first MDG targets to be met, and was hailed as a significant achievement. Unsurprisingly, significant challenges remain, including the fact that 11 percent of the world's population (783 million) still lacks access to improved drinking water. There have also been some that questioned whether the collected data was in fact accurate. A Dutch NGO, International Water and Sanitation Centre (IRC), pointed out that water quality was not measured in the MDG report, and the reporters also failed to look into whether water supplies worked or were reliable. (International Water and Sanitation Council 2012) The lesson to take away is that while DSMs have been one of the most successful tools used in getting closer to the water MDG, there is still much improvement to be made across the world.

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<sup>3</sup> The framework for DSM is based on multiple existing UN Resolutions, including: Millennium Declaration (A/55/L.2), United Nations General Assembly Resolution A/RES/64/292, Human Rights Council Resolution A/HRC/15/L.14, Rome Declaration, the Paris Declaration, the Accra Agenda for Action and Busan Declaration.

The formal creation of DSMs was based upon earlier pioneering initiatives including the Oudin-Santini law in France, the ‘Koppejan’ law in the Netherlands, the Platform Solidarit’eau in Switzerland, the Flemish Partnership Water for Development in Belgium and the ‘L’Acqua è di tutti’ fund in Italy. (World Water Forum 2012) The initiatives helped build voluntary cooperative networks across Europe that put a portion of the water and sanitation budget aside to assist water projects in developing countries. In France alone, where participation is voluntary, the Oudin-Santini Law raised about 24 million Euros in 2010, and has to date assisted 600 projects in 17 countries. (UNDP 2012d) One estimate from Jean-Phillippe Bayon, a senior water expert at UNDP put the potential European-wide mobilization of financial resources for GWS at €4 billion. (Water and Sanitation for Africa, 2012)

Following the success of these early initiatives, at the end of 2010, the UNDP Hub for Innovative Partnerships began mobilizing new technical and financial resources from decentralized cooperation in order to support local governments from developing countries in their efforts to achieve Millennium Development Goal (MDG) 7C. The ‘triggering point’ was the possibility of scaling up at the European level a voluntary levy of 1% on water and sanitation services already functional in certain countries and notably in France. (UNDP 2012c)

In early 2012, the GWS Steering Committee, made up of representatives from local, regional and national authorities, international and multilateral organizations, water operators, NGOs, private organizations and prominent public figures, focused its efforts on specifying the best ways to use small-scale DSMs in achieving the MDGs. At this time, DSMs were essentially a bundle of policies adopted at sub-national levels that

harnessed financial resources, and promoted local capacity building and technology transfer in support of sub-national institutions' efforts to establish water and sanitation services. (UNDP 2012b) All of these policies were pursued on a voluntary basis and as a sign of solidarity.

During the last decade, DSMs have been a successful and resilient approach to human water security. They have been designed specifically to address the obstacles that sub-national institutions faced in developing countries. As such, they reflect a broader understanding of the need for inclusive participation in the management of water resources. Their principal use has been to decrease human vulnerabilities by improving the availability of clean water sources and improving sanitation, the roots of individual health and wellbeing. Their impact has been significant and it is clear that with the pursuit of *Global Water Solidarity*, the benefits resulting from DSM have been far from negligible. The MDG goal of safe drinking water has been one of only three MDG targets achieved to date (together with targets to reduce slums and extreme poverty), and it was met three years ahead of the 2015 deadline. The proportion of people without sustainable access to safe drinking water was halved and the proportion of people using an improved source of water (such as piped supplies and protected wells) rose from 76 percent in 1990 to 89 percent in 2010. The number of people using improved drinking water now stands at over 6.1 billion, an increase of over 2 billion from 1990, with increases in China and India making the largest gains. (United Nations 2012: 4)<sup>4</sup> This is a measurable reflection of the positive effects that have occurred from increased efforts to combat human water insecurity. Part of the attainment of MDG Target 7c was made possible by the efforts of

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<sup>4</sup> For a detailed description of the data, see UNICEF, *Progress on Drinking Water and Sanitation, 2012 Update*.

several European countries that launched DSMs. By encouraging and promoting the role of local authorities in water governance, DSMs operate with the understanding that water systems have a distinct impact on local communities, and that these communities should have a larger involvement in the planning and implementation of water policy.

Perhaps the most significant reflection of the ethical foundations of DSM/GWS comes from its founding Charter of DSM. It provides three important acknowledgments. First, it recognizes that, although national governments alone maintain the legal responsibility for ensuring universal access to safe water and sanitation, it is also imperative that sub-national groups must be fully involved. Secondly, it considers the fact that the continued lack of water security (in the form of safe water and sanitation) is primarily the result of economic constraints and institutional deficiencies, not due to limitations in physical resources. Thirdly, it puts special emphasis on the fact that the combined stress effects on water affect the poorest and most vulnerable population groups most intensively. (UNDP 2012a)

Together, these acknowledgments are a manifestation of a progressively-oriented approach to water security and mark an important indicator of the sociopolitical drivers of vulnerability. The commitment to act in ways that reduce harm for vulnerable individuals and communities is based upon awareness that ecological and geographical factors are not disconnected from the social fabric and institutional context of societies. (Brklacich, Chazan, and Bohle 2010: 41) The commitments of the DSM Charter are fundamentally the product of deeper ethical thinking on the parts of the drafters. The explicit focus on universality, democratic participatory planning, and sustainability, is in recognition of the mutual benefit that accrues from joint participation towards a goal of

spreading water security strategies across borders. While DSMs are primarily designed for developing countries struggling to improve water and sanitation services, the ethical principles upon which they are founded are universally applicable. Indeed, the original DSMs were first implemented at the national and regional level within European countries. In this way they are able to answer some of the central criticisms levelled against MDGs, which is that they ignore problems of inequality across the world, “ghettoizing” development as something only to be worried about in the global south. (Saith 2006) Instead the roots of GWS show that internationalist discourses of cooperative water security are being used in ways that challenge the heretofore largely dominant discourse of security

It is clear that the principles expressed in the DSM charter represent a form of hydrosolidarity, which is one of the emancipatory appellations present in contemporary water politics. They constitute a shift to ideas that have previously been viewed as inimical to the realization of water security. Whereas traditional water security approaches have focused on national-level frameworks for managing scarce water sources, some of the main sponsors of DSM and hydrosolidarity champion the involvement of local institutions. This is an important factor in developing and implementing strategies to improve access to safe water and sanitation, while also increasing the involvement of local actors in securing basic rights and freedoms. Local involvement, requiring high levels of dialogue and cooperation, are central requirements for hydrosolidarity, and the ongoing progression of DSM into a more solidified global framework signals one movement to re-engineer understandings of water security to the individual level.

A key indication that alternative water security norms developed in the DSM framework are taking root is seen by the commitment to expand the range and scope of DSM into a global approach to combatting water insecurity. Leading up to the 2012 World Water Forum (WWF 6), it was decided by the DSM Steering Committee that DSMs should be scaled up and replicated. This has led to the transformation of DSMs into something larger – *Global Water Solidarity* (GWS). Officially launched at WWF 6, *Global Water Solidarity* expands DSMs into a larger role in promoting innovative, ethical solutions to global water problems. It does so by replicating, at a larger level, successful decentralized solidarity mechanisms: mobilizing financial resources to be dispersed internationally; increasing technology transfer; facilitating training exchanges between decentralized authorities and technical services; and promoting good governance and territorial development. All of these mechanisms are undertaken with a special focus on the role of local governments and communities in providing basic services. While IWRM remains the dominant water management approach, DSM was singled out at the World Water Forum as an important contribution that is both grounded in specific ethical principles and can help in the progress towards achieving the minimum standards of Millennium Development Goal 7. It was for this reason that such a concerted effort was made at WWF 6 to scale up its achievements. Unified under the theme “*Time for Solutions*,” WWF 6 witnessed the creation of GWS and its promotion was evident at numerous events. One official session dealt with “Innovative Finance for Local Government;” one side event was called, “1% Water and Decentralized Solidarity Mechanisms: Partnership Solutions in Africa for Water and Sanitation;” and another

event looked at, “Villages for Solutions.” (UNDP 2012c) All these events were part of the ‘coming-out party’ for GWS.

Funded by the Swiss Agency for Development and Cooperation, and the Ministère des Affaires Etrangères et Européennes de la République Française, as well as the UN Development Programme, GWS is undertaken on a voluntary basis, as a gesture of solidarity. The three funding organizations have championed the scaling up to the European level of a voluntary levy of 1 percent on water and sanitation services that was already functional in certain countries, including France. (UNDP 2012c) The funds generated are then diverted to a variety of projects and organizations across the world with the aim of improving drinking water and sanitation for vulnerable populations. The encouragement of a 1 percent solidarity mechanism (a ‘voluntary tax’ in other terms) is one aspect of GWS, but the platform is not limited to financial packages. The needs of water and sanitation sectors require broader engagement than simple financial mobilization. GWS thus also facilitates international technical exchanges, encouraging the cross-pollination of best practices and the experiences from previous efforts. The closer links among national platforms and decentralized authorities can leverage ethical responsibility into real improvement in the lives of others. The emphasis on inclusive dialogue across borders, regions, and watersheds, and the principal role that local governments play in all aspects of the design and implementation of the platforms are indications of alternative conceptions of the way in which water security can be articulated and practiced. A range of actors across borders and continents, from *Programme Solidarité Eau* in France to *Water and Sanitation for Africa*, to *Sahara and Sahel Observatory* in Tunisia are contributing to the process of redefining what water

security can mean. Going forward, the task becomes one of expanding hydrosolidarity, catalyzing more north-south, south-south, and north-north linkages through progressive financing mechanisms and capacity sharing. The critical vision is such that these types of decentralized partnerships help fundamentally transform the ends towards which water security is aimed, evolving over time into new, vibrant alternatives that contribute to a good life for the entire community of life dependent on water. (Brown and Schmidt 2010)

## **Conclusion**

It is too soon to fully judge the outcomes of *Global Water Solidarity*, but at the outset of its institutionalization, it seems to demonstrate emancipatory practices immanent in water security. The eventual scaling up of solidarity mechanisms is in essence a re-articulation of the way in which security can be constructed – away from more technical, instrumental interpretations envisaged by IWRM and, even more fundamentally, in the traditional security discourse of exclusion and enmity. The commitment made by *Global Water Solidarity* to increase individual water security by utilizing transnational resources (both human and financial) and combining them with a central role for local communities signals an emancipatory alternative in ways that IWRM as a managing doctrine simply cannot. While it may seem contradictory for proponents to advocate concurrently for institutionalization and decentralization, both processes are necessary for the requisite shift in water ethics.

Decentralization is necessary for the inclusion of disparate communities to better manage resources upon which they depend for their livelihoods. Local communities can in theory provide more inclusive public participation and dialogue over water issues.

Such participation is vital for the increase in ethical and technical legitimacy as well as the overall empowerment of local communities. It is clear that local knowledge is essential to the planning and implementation of complex water security strategies. Without it, there is the potential for marginalized groups to experience the effects of power disparities – forcing them to participate and replicate the dominant orthodoxy of the dominant group. Such orthodoxy is often inimical to deeply held spiritual and ethical beliefs of local groups, and it may also continue to entrench larger discourses of national security at the expense of emancipatory alternatives. The avoidance of past mistakes compels us all to re-think the purpose and utility of past approaches of water security. Shifting nationalist discourses of water security, which do little to promote security, can contribute to a vision of the future that is urgently needed.

A critical water security avoids the whole notion of paradigmatic change and argues instead for critical interrogations of dominant water practices in the service of eliminating physical, structural, and intellectual barriers for individuals, communities, and the natural environments upon which they depend. It is clear that the problems of water are multifaceted and complex. Global water problems are not just problems of inequitable or inefficient distribution - though these are important components that require technical solutions – they are reflections of much larger attitudes about how human society should be fundamentally ordered. Water scarcity has material consequences, but its prevalence and continuation are social constructions that stem “from a set of social processes that reflect the conflicts concerning the desirable kind of societal and social order.” (Aguilera-Klink, Perez-Moriana, and Sanchez-Garcia 2000: 233) The continued and growing distance between water supply and demand requires a

larger emancipatory ethical framework that can promote values of sustainability, cosmopolitan responsibility, and hydrosolidarity.

This article outlined one promising alternative: hydrosolidarity, manifested in the programs of *Global Water Solidarity*. *Global Water Solidarity* is in its very early stages of development. It is far too soon to tell what its successes and failures will be, and just how much it can contribute to advancing an alternative identity of water security that counters the exclusivist tendencies of traditional water security. Expectations must be tempered. That said, it is but one example - perhaps an obvious one given the involvement of UNDP and state governments - of a progressive shift in the manner in which water security is both deliberated and practiced. Its promotion of the ethical norms of solidarity, decentralization, universality, and sustainability in the name of protecting vulnerable populations is an expression of the vision of emancipatory water security. Finally, it signifies how the possibility for emancipation is immanent in any political context, even in one as tightly bound to sovereign exclusivity as water security.

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