



Achieving ethical responsibilities in water management: A challenge



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ABSTRACT

The problems of water management, including water scarcity, ecosystem degradation, and water related disasters are expected to be exacerbated by global trends such as climate changes, population growth, urban sprawl, and food uncertainty. In particular, population growth and climate change may have a considerable impact on agricultural water management goal of ensuring enough food for world's population. Such a situation calls for a new awareness on the role of international water law and for a full recognition of common ethical principles which must be applied at a world-wide and local levels. The aim of the paper is twofold: first, to review the recent efforts at reinforcing a legislative framework on water cooperation as well as on water rights, and second, to identify a set of ethical principles which can improve water governance and management at different levels. These principles – either drawn from the evolution of key-concepts within the “water box” or derived from general environmental and social ethics – represent the basics for achieving ethical responsibility in integrated, sustainable, and equitable water resource development, particularly for agricultural use.

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1. Introduction

For many decades a large number of strategies and plans of action have been proposed by the international community to solve the most dramatic water-related problems, such as the lack of safe drinking water for a significant part of the world's population, the insufficient amount of available water resources to achieve food security in several countries, and the growing risk for mankind due to water disasters, pollution, and ecosystems degradation. In spite of the efforts, it is commonly held that the improvement of the situation concerning these issues, even if occurred at local level in many places, is globally too slow, as it is confirmed by the partial failure of the Millennium Development Goal (MDG), which aims to halve the proportion of people unable to reach drinking water and sanitation by 2015 (United Nations, 2013). Also the current global trends, such as population growth, urban sprawl, climate change, soil overexploitation, and land degradation, are expected to exacerbate water problems.

In recent years, it has become increasingly clear that technology, economy and local institutions, even if effective at local and national levels to guarantee water supply, protection from water disasters and, conservation of water bodies, may be inadequate on

a global scale. As with other global issues (pollution of the atmosphere, climate change, loss of biodiversity, etc.), water problems require a common effort which can strengthen a new approach, one that is founded on two pillars: (i) the broader role of international laws in order to satisfy human water needs, reduce water related risks, and minimize environmental impacts and (ii) the development and application of shared ethical principles, aimed at a more equitable and sustainable water governance and management.

A question then arises: why are there two facets, namely water laws and ethics? A simple example can provide an answer. Following Falkenmark (1999), the term “hydrosolidarity” has been increasingly used: however, two different interpretations are possible (Gerlak et al., 2011). If “hydrosolidarity” has to overcome the national view of a narrow “hydro-sovereignty”, then the priority has to be given to the international water legislation framework. However, if “hydrosolidarity” has to overcome “hydroegoism” at the individual, group and community levels, then the necessity of ethical principles which guide human behavior has to be emphasized.

The literature on international water law has been developed in recent decades alongside the evolving structure of water governance, which in turn has been characterized by several fragmentation processes in the geographical, functional, policy, and decision-making dimensions. In particular, the declining authority of the states has led to an increasing role of organizations operating downward at basin level or upward at supranational and international levels. A detailed overview of the current trends in

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international water law has been carried out by [Dellapenna and Gupta \(2008\)](#), through a review of several case-studies referring to national and supranational water laws. The main contributions on the role of the international water law refer to the 1997 UN Convention on the Law of International Watercourses ([United Nations, 1997](#)), either by discussing the strengths and weaknesses of the rules introduced by the Convention ([Beaumont, 2000](#)), investigating the link with sustainable development ([Rieu-Clarke, 2005](#)) or by emphasizing the difficulty of the application of the principle of equity ([McIntyre, 2013](#)). The legal bases for the human right to water and sanitation – which were lacking in the Universal Declaration of Human Rights in 1948 and which were explicitly recognized by the UN General Assembly only in 2010 – have been analyzed either through the study on the evolution of the principles of the access to fresh water and sanitation services in the international conferences and in the activities of UN institutions (e.g. [Murthy, 2013](#)), or through the identification of the sources of global administrative law, i.e. treaties, international law rules, and general principles ([Kingsbury, 2009](#); [McIntyre, 2012](#)).

The explicit recognition of ethical principles which need to be implemented in order to achieve sustainable and equitable water governance and management is also a recent phenomenon. This is founded on the definition of ethical responsibility in science and technology by UNESCO ([Selborne, 2000](#)), or on the efforts of scientific institutions to search general concepts to make water management more effective, or to reduce water conflicts (e.g. [Falkenmark and Folke, 2002](#); [Rossi, 2008](#); [Falkenmark, 2009](#)), or on the multi-disciplinary approach of scholars interested in maintaining dialogues with decision-makers on water issues ([Llamas et al., 2009](#); [Gerlak et al., 2011](#)).

This paper includes two sections: the first provides a review of the efforts made to reinforce a legislative international framework on water cooperation within river basins and on general water rights. The second aims at identifying a set of ethical principles which can improve water governance and management at different levels. Analysis of laws and ethics will focus on agricultural water management which may contribute to an improvement in food security.

2. Role of International Law

2.1. *UN Convention on the International Watercourses (1997) and the ILA Berlin Rules (2004)*

The international laws issued in recent decades especially aim at resolving disputes in transboundary river basins. With reference to water resource management, particular attention must be paid to the principles of the “UN Convention on the Law of the non-navigational uses of the international watercourses”, adopted by the UN General Assembly ([United Nations, 1997](#)). The Convention will enter into force on August 2014, as it has been ratified only recently by the required number of states (35). However it has been an authoritative guide for international agreements for a long time. The Convention deals with the problem of water allocation in general terms, stating that the States “in their respective territories utilize an international watercourse in an equitable and reasonable manner” (art.5) and that “they take all appropriate measures to prevent significant harm to other watercourses States” (art.7). Unfortunately, since a clear priority of one of the two principles is lacking, this formulation does not completely solve the disputes between the States. The upstream riparian country emphasizes the principle of equitable utilization as a justification for “*water rights based on the doctrine of absolute sovereignty*” and for the decision to limit the river flow downstream. On the other hand, the downstream riparian country focuses on “no significant

harm” for advocating the “*historic rights principle*” in protecting its own pre-existing uses of water against the upstream new withdrawals requirements ([Beach et al., 2000](#); [Rossi, 2008](#)). Also the Convention does not provide a clear guideline for a hierarchy of different uses: art.10 states that both “in absence of agreement no use enjoys inherent priority over other uses” and “in the event of a conflict between uses (. . .) a special regard (has to be given) to the requirements of vital human needs”. Besides, what is lacking is a keen awareness of the fact that water agricultural requirements should also have priority in order to achieve food security in many countries.

With the objective of overcoming the shortcomings of the Convention, the International Law Association has prepared “The Berlin Rules on Water Resources” ([ILA, 2004](#)), which addresses the management of all waters (not only the international shared waters) and extends the principles put forth by the UN Convention on equitable utilization and on avoidance of harm, including a cooperation among entities involved. Moreover, the Berlin Rules impose that the States provide legal tools, administrative institutions, and court procedures to achieve the objectives indicated by the Rules, also developing education and research programs aimed at guaranteeing technical capacity to solve water problems. The greatest value of the Berlin Rules is that they merge principles developed within the technical sphere of water resources management (i.e. the conjunctive use of different water resources and the Integrated Water Resources Management) with ethical principles based on human rights and environmental concerns (e.g. sustainability, minimization of environmental harm and participation of stakeholders to the decision process).

Beside the 1997 UN Watercourses Convention, other legal instruments to be implemented yet include the 1992 Helsinki Convention, amended to allow non UNECE (United Nations Economic Commission for Europe) States to join ([UNECE, 2012](#)) and the 2008 Draft Articles on Transboundary Aquifers ([ILC, 2008](#)). An advancement of the international legal instruments is expected to facilitate equitable and sustainable water cooperation, especially in the 153 of the 263 international river basins where a cooperative management mechanism is lacking. In particular the 1997 UN Watercourse Convention and the 1992 UNECE Convention (amended on 2012 so that all UN member states can accede to it) represent complementary instruments, oriented to reduce controversies and conflicts in transboundary basins. They may facilitate the recognition of the water needs for agriculture as a condition to ensure food security in all countries. Also, the role of international water law has to be broadened so as to cover the growing need for a better water governance, able to regulate global processes such as water pollution, climate change, food uncertainty, thus satisfying human water rights and protecting water ecosystems.

2.2. *UN resolutions on human rights (2010)*

Although several declarations and programs on water issues have been previously adopted by United Nations conferences and summits (e.g. Conference on Water, Mar del Plata, 1977; Conference on Environment and Development, Rio de Janeiro, 1992; 2003 Resolution proclaiming the International Decade for Action “Water for Life” 2005–2015), the Resolutions that explicitly recognize the access to safe drinking and sanitation as a human right were adopted only in 2010: by the UN General Assembly on 26 July 2010 ([United Nations, 2010a](#)) and by the UN Human Rights Council on 24 September 2010 ([United Nations, 2010b](#)). The resolutions lamented the fact “that approximately 884 million people lack access to safe drinking water and that over 2.6 billion people do not have basic sanitation”. They extend the previous provisions on water rights that were limited to the elimination of discrimination against women and to the rights of children.

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