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IWRM and developing countries: Implementation challenges in Ghana

Joseph Boateng Agyenim [a], Joyeeta Gupta [a,b,*]

[a] Institute for Environmental Studies, VU University Amsterdam, De Boelelaan 1087, 1081 HV, Amsterdam, The Netherlands
[b] UNESCO-IHE Institute for Water Education, Westvest 7, 2611 AX, Delft, The Netherlands

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ABSTRACT

Since 1990, there has been growing theoretical consensus on the need for integrated water resource management. At the same time, there is growing empirical evidence that challenges the scientific consensus and the practical implications of implementing IWRM in the developed and the developing countries, although the nature of the implementation challenges may differ in the different contexts. Against this background, this paper investigates into the nature of the empirical challenges to implementing integrated water resource management in Ghana. It describes the actual implementation process and contrasts eleven elements of the substantive content of IWRM with the implementation practice in Ghana. The paper then concludes that Ghana, like other developing countries often adopts such paradigm shifts in the management of their water resources primarily as a result of exogenous pressures (and to a limited extent endogenous factors) but that (a) lack of domestic ownership and leadership of the concept, (b) limited resources, and (c) institutional mis-matches, often results in an implementation of the ideas that is limited to implementation in form rather than practice.

1. Introduction

The multiple demands on water and the recognition of the manifold ecosystem services that water provides has increased the need for effective water governance. The traditional, single focus, sectoral organisation of water management bodies has proved to be ineffective in dealing with the multifunctional nature of water. Many authors have described the situation as a crisis of governance. This led to the search for an appropriate management approach for water resources. In the process the concept of Integrated Water Resources Management has been developed by theorists (Hooper, 2005; Bandaragoda, 2006; Adeel, 2004; Biswas, 2004; Boutkan and Stikker, 2004; Jonch-Clausen, 2004; Anderson et al., 2008), policymakers (Falkenmark et al., 2004; Schulze et al., 2004; Swatuk, 2005), international bodies (Global Water Partnership, the International Water Association, World Water Council, International Network of Basin Organisations, the International, American & Canadian Water Resources Associations, the Stockholm Water Symposium and the World Water Price) and aid agencies. At the same time, it is argued that the concept is poorly articulated by epistemic communities (Conca, 2006) and is a 'nirvana' discourse that can scarcely be implemented (Molle, 2008). Yet, it is heavily marketed through professional communities, supported on the one hand, by the aid agencies and, on the other hand, by international declarations that adopt this concept.

Against this background, this paper addresses the questions: how has the concept been interpreted and applied in developing countries in general and in Ghana in particular? What elements have influenced its implementation? What have been the challenges and the benefits to the countries applying it to their water resources management and what lessons can be learnt for theory? This paper is based on five years of research including a comprehensive literature survey, content analysis of policy documents, a single layered case study approach and stakeholder interviews conducted in Ghana (see Appendix A). The method and results were integrated and defended in a Ph.D. thesis (Agyenim, 2011).

2. Water management paradigm shift

The debate on water management has involved the scientific community and the policy world. The fragmented and sub-sectoral approaches leading to uncoordinated management of water resources; each focusing on different water uses and water goals were seen as inadequate to address the increased use and abuse of fresh water systems associated with rapid social change taking place in most countries (Boutkan and Stikker, 2004; Hooper, 2005; Cleaver and Toner, 2006; Cullet and Gupta, 2009; Kidd, 2009; McCay and Marsden, 2009). Sectoral approaches externalise all other issues and impacts and can, to some extent, be held responsible for the water governance challenges of the 21st century.

* Corresponding author at: Institute for Environmental Studies, VU University Amsterdam, De Boelelaan 1087, 1081 HV, Amsterdam, The Netherlands.
E-mail address: joyeeta.gupta@ivm.vu.nl (J. Gupta).

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From the early 1980s, some water professionals initiated discussions that led in the 1990s to a redefinition of water as "multi-dimensional, multi-sectoral and multi-regional, and were enmeshed with multi-interests, multi-agendas and multi-causes" (Biswas, 2008: p. 7). A new paradigm of Integrated Water Resources Management (IWRM) emerged as the internationally preferred option for both developed and developing countries. Conca (2007) discusses the history of the evolution of this concept in the scientific and policy world; while Hooper (2005) elaborates on the different dimensions of this concept. The concept was packaged in neo-liberal theory and focused primarily on water as an economic good (Dublin Conference 1992) and on increasing the role of stakeholders and minimising the role of the state. This led to new values and ways of thinking about solving increasingly complex water management issues (Biswas, 2001). Many water theorists favour IWRM as the best way to manage water resources (Figueres et al., 2003; Boutkan and Stikker, 2004; Cleaver and Toner, 2006) and it now enjoys international endorsement at the highest level, such as the 2002 World Summit on Sustainable Development, Johannesburg, and the different World Water Forums (Hooper, 2005).

This global paradigm shift from single purpose/sector specific approaches to IWRM is attractive because: (a) It is comprehensive and holistic considering all sectors, all types of water and all resources in the bioregion at the same time and 'reinforces an ecological approach to land use and planning' (Pahl-Wostl, 2007: p. 49). By its very nature, water creates networks: it is linked to other natural resources, social and economic activities (Brushweiler, 2003), (b) it is a reflection of the biophysical reality, which demonstrates the links between the livelihood of the catchment through which water flows and resource perspectives; (c) it incorporates the elements of good governance (coordination, equity, stakeholder participation), d) allows for dealing with competing usage; and is accepted widely in its own rights (Hooper, 2005; Rahaman and Varis, 2005; Cardwell et al., 2006; Giupponi et al., 2006; Placht, 2007; Kees et al., 2008), and (d) it fits into the agenda of the neoliberal governance frameworks calling for small government and markets and the more pluralist agenda of others who call for greater stakeholder participation in policymaking.

Despite this acceptance, there are increasing questions from international science and policy agencies as to about the implementability of these ideas (Cleaver and Toner, 2006; Pahl-Wostl, 2009; Agyenim and Gupta, 2010). In addition, the methodology and relevance of IWRM are still being debated (Molle, 2008).

Although many developed countries have adopted the jargon of IWRM, it is not clear whether they are actually implementing it in its totality. For example, the European Water Framework Directive of 2000 sees water more as a common heritage of humankind than as an economic good. The US scarcely integrates, but sees water as an economic good (Dellapena, 2009). In New Zealand and Canada, water is hardly seen as an economic good but IWRM principles are applied in some watershed management projects. Meanwhile, successful examples of IWRM implementation are said to be few (Tortajada et al., 2003; Adeel, 2004). The reason lies partly in the "nirvana" nature of the concept (Molle, 2008), the complexity of bridging knowledge and policies across sectors, (Adeel, 2004; Pahl-Wostl, 2009) and grafting the concept on existing institutions does not, in itself, lead to more integrated policies (Agyenim, 2011).

Furthermore, although there appears to be wide-spread support for the concept, a key question is – is there real political and legal consensus on this issue? The international community has been divided on water related issues. 29 UN agencies are currently working on water and although, in recent years, they have begun to work together under the umbrella of UN Water, their commitment and mandate to work on IWRM is not clear. The UN Convention on the Non-Navigational Uses of International Watercourses of 1997, which is yet to enter into force, did not discuss the concept of IWRM; the International Law Association's Berlin Rules does mention IWRM but is not a reflection of global legal consensus (Dellapenna and Gupta, 2009). In the governance vacuum that emerged, non-UN agencies and civil society actors have spearheaded the organisation of a World Water Council with active participation of scientific, engineering, industrial, environmental and government groups to speed up the search for alternative modes of water management to reduce the water crises (Pahl-Wostl, 2007). These bodies have adopted the concept of IWRM and investment banks and aid agencies are marketing this concept to the developing world (see e.g. Scheumann et al., 2008).

3. Implementation challenges in developing countries

This section elaborates on the implementation challenges in the developing world. A key challenge is, understanding the concept which is defined differently by different authors and practitioners (Biswas, 2004; Falkenmark et al., 2004). Table 1 shows the types of 'integration' that influence IWRM interpretations.

These definitions have influenced the various methods and approaches adopted by developed and developing countries in implementing IWRM. These different kinds of integrations present highly challenging and complex tasks (Biswas, 2004; Conca, 2007; IWMI, 2007).

The section below discusses, based on a literature review, how IWRM has been implemented in a few developing countries, namely South Africa and Tanzania (from Africa), Pakistan and India (from Asia), and Mexico from Latin America.

The South African government, adopting a top-down approach, codified a formal IWRM strategy at the national level in 1998 (Ballweber, 2006; Swatuk, 2008). The policy was an expansion of statements of IWRM principles in its 1996 Constitution (Swatuk, 2008) after the introduction of democracy in South Africa in 1994 (Kidd, 2009). The policy embraced environmentally sound, sustainable economic and social development and codified this in the National Water Law of 1998 (Ballweber, 2006; Kidd, 2009). This approach led to the creation of the Department of Water Affairs and Forestry (DWAF), which was given the responsibility for IWRM.

Water is considered a national resource vested in the state. The law provides for catchments agencies that have the responsibility of preparing a management plan, issuing water licenses, and promoting community participation. However, there were problems with the institutional, vertical and horizontal integration issues. For example, Ballweber (2006) argues that whereas the National Water Act (1998) recognises national jurisdiction over water resources protection, use, development, conservation and management, the Water Services Act (1997) has vested the responsibility for potable water supply and wastewater management in the local municipal authorities. The reforms brought into play commercialisation of water which promoted outsourcing and, hence, created a competitive operating environment leading to deregulation of the sector. Corporatisation acted as a gateway for direct private sector investment and ownership (McDonald and Ruiters, 2005).

In Mexico, IWRM led to the transformation of the water management institutions. It involved the establishment of the National Water Commission (CNA) in 1989 and the National Water Law in 1992, which was amended in 1994 (Haggarty et al., 2001; Mumme and Brown, 2002; Hearne, 2004). In this law, water resources are treated as national property and concessions grant only the right to use resources but not ownership. The market transfer of these concessions was permitted under regulations established by the CNA. The law mandated the transfer of management of irrigation