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## **WATER USERS ASSOCIATIONS & THEIR RELEVANCE TO WATER GOVERNANCE IN SUB-SAHARAN AFRICA**

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### **ABSTRACT**

Over the past two decades a substantial body of knowledge has been generated in understanding how communities at local level organize and implement systems for managing water for agriculture—i.e., ‘water users associations’ (WUA). These have been implemented in many countries with varying degrees of success. However, there is now increasing emphasis on creating institutional mechanisms for river basin management, which adds considerable complexity to efforts to improve water management. Water scarcity and competition for water at basin level is largely driving this process. This emphasis on the basin level also has important implications for WUAs, who are being saddled with new and more complex roles before they are even coping with local water management.

This paper reviews recent experiences with WUAs in the context of river basin management, particularly in Asia and Africa, and synthesizes a few lessons and principles of significance to water governance. The focus is on Sub-Saharan Africa where the problems are especially difficult. Aspects discussed include indigenous and induced arrangements for water management at local levels and how they can be integrated with formal top-down legal and institutional arrangements; the sustainability, practicality and feasibility of selected governance concepts currently being promoted by the international community; and the policy measures necessary to improve the likelihood of success.

### **INTRODUCTION**

Since the late 1970s, considerable efforts have been devoted to understand, develop and support the organizations associated with managing irrigation systems, that is, water users associations (WUA). In many forms these institutional arrangements are now responsible for managing the water delivered to much of the world’s irrigated agriculture. Some institutional arrangements have been in place for decades and even centuries, whereas others are relatively new, either having been created as part of efforts to transfer management of the systems to the users, or, less common, developed with the construction of new irrigation systems.

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The overall goal of this paper is to take a critical look at the recent evolution of WUAs, particularly in Asia where much has been done over the past three decades, compare this with the present conditions and needs in sub-Saharan Africa, and draw lessons, particularly for sub-Saharan Africa. This is done from the perspective of managing water in a river basin context. Managing river basins has emerged as one of the major challenges facing all countries, but especially developing countries, in the 21<sup>st</sup> century (Vermillion & Merrey, 1998; Svendsen, ed., 2004).

Given that water governance is a large, complex and continuously evolving subject, this paper cannot be a comprehensive review. Rather, the aim is to determine and characterize selected water governance issues, especially in agriculture, and their implications for improving the governance of water in sub-Saharan Africa.

## GOVERNANCE

Rogers and Hall (2003) define water governance as the range of political, social, economic and administrative systems established for the development and management of water resources and water services at all scales. It needs to be considered at basin and sub-basin scales, within sectors (e.g., agriculture), inter-sectorally, and should encompass the management of the land-use within a basin that affects the characteristics of the resource downstream. It includes establishment of the rules, responsibilities, operating mechanisms, policies, and user and official accountability systems. Effective governance is that which provides water for livelihoods and economic growth, yet maintains a sustainable environment.

All river basins already have, to some extent, some form of formal and informal governance systems in-place, which are characterized by the particular social, cultural and political setting of that basin (Rogers & Hall, 2003). Each river basin has its own unique physical, social, environmental and economic characteristics, is at its own unique level of development, and has its own unique administrative and institutional arrangements. A few basins are still “open,” i.e., there are still more water resources that have not been developed, but increasing numbers of river basins around the world are “closed,” i.e., have no more water available for development (Molden & Sakthivadivel, 1999). This issue has profound implications for basin governance.

The above said, it is important to qualify that in sub-Saharan Africa the concept of a 'closed' basin is not as pertinent as in other parts of the world. Many basins in this region, such as the Ewaso Njoro North in Kenya and the Ruaha in Tanzania, are experiencing intense competition for resources and are subjected to frequent shortages and in the broad sense of the concept, are “closed”. However, given the low level of physical development of these basins this is occurring at relatively

low levels of utilization of the resource. If there were more storage capacity to capture wet season runoffs there would be a better capability to meet growing demands and reduce the impacts of the droughts.

The relative paucity of infrastructure development in sub-Saharan Africa is an important consideration when comparing its agricultural water management with that of Asia or elsewhere, and how it may develop in the future. The general development environment is not as favorable towards investing in agricultural water as it was in the “Green Revolution” era when considerable financial resources were available and helped drive the development of water infrastructure in Asia.

Water governance is inherently political, and politics determines the vision and the agenda as well as the extent to which institutions are actually put in place and made effective. The extent to which the necessary institutions are in place determines whether the vision is fulfilled and the day-to-day management is undertaken. Also, politics, as much as any thing, greatly affect the development trajectory of a given basin.

Improvements to governance are promoted to address a wide range of issues including: pollution, poverty, allocation regulation and development, i.e., construction of infrastructure (Sakthivadivel & Molden, 2002). Improved governance is also promoted where there is a perceived threat of conflict over water, and in other situations where water is considered to be an area for cooperation, i.e., where for example countries sharing a basin must come to agreement before the basin can be developed for mutual benefit, and, in some case, as a tool in maintaining and improving diplomatic relations between countries. Where improving the governance has been deemed necessary, the appropriate interventions have to be tailor-made for that basin, although a broad understanding of best practices from elsewhere is an important input to the process.

According to Rogers & Hall (2003), key principles for achieving and sustaining effective water governance are:

- stakeholders be involved in the governance of the systems at the relevant levels, and achieving this requires the institutional and policy environments to facilitate the necessary levels of participation;
- facilitation of action and removal of obstacles, and try to be inclusive, accountable, participatory, transparent, predictable and responsive. Without these elements the economic, social and political risks increase.
- institutional and administrative framework within which stakeholders from all levels can agree to coordinate and cooperate.

Governance of water for agriculture, which is the dominant water user in most basins in Asia and Africa, is essential to ensuring governance of water in general.

Indigenous local water management organizations have been forming and evolving throughout the world for centuries, including in Asia and Africa (Shah et al, 2001). For more than thirty years a substantial body of knowledge and community of practice has been generated in understanding how communities at local level organize and implement systems for managing water for agriculture—i.e., WUA. Based on this, there have been many attempts to replicate such organizations and, specifically, transfer the management of previously public-run irrigation systems to the water users. This process is referred to as “irrigation management transfer” (IMT).

In Asia, the focus of improving agricultural water management over the past three decades has largely been on the software, as much of the hardware had already been constructed. In fact, much of the motivation behind this effort was on the fact that top-down, hardware focused management of irrigation systems was performing poorly. It has also been driven by the need to reduce government budgets, and a belief, or perhaps hope, that the necessary capacity lies with the users or local non-government organizations. Efforts to improve water management in agriculture usually include a basic strategy for user participation in the management and transfer of responsibilities to the users (irrigation transfer).

Results have been mixed, either because the users still expect the public institution to manage the systems, or the enabling environment is not sufficiently supportive for the WUAs to implement their new responsibilities. There are a number of reported cases of failure of users to properly manage systems after they were transferred where the primary cause was missing elements from the enabling environment, such as lack of financial rigor, no clear water rights, and poor clarity regarding accountability for users and the government agency (Merrey, 1997; Vermillion & Garcés-Restrepo, 1998; and Samad & Vermillion, 1999).

Irrigation transfer has sometimes been successful, such as the case of the pilot transfer of small and medium irrigation systems to the users in Vietnam (Ringler, Cong, and Huy; 2002). The primary goal was to reduce the burden on the national budget, but it also improved the reliability of water supply, better tail-end performance, expanded the irrigated area, created more fiscally efficient O&M, and improved both the proportion and speed of fee collection. In some countries, governments have succeeded in reducing their costs through IMT, though farmers have not necessarily filled the gap (e.g., Sri Lanka, Indonesia, India); most of the ‘success’ cases in fact come from middle income countries with a strong commercial agricultural sector (e.g., Mexico, Turkey).

From Merrey (1997) and other literature basic prerequisites for the successful and sustainable transfer of irrigation systems to the users include:

- farmers must find ways to cover the costs of operation and maintenance;
- a long-term government commitment to a solid and practical policy;
- clear and transparent water rights and distribution arrangements;
- legal recognition of WUAs; and
- profitable agriculture.

The weakness of public institutions has long been recognized as a key constraint to governance, both for agricultural water and water in general. Poor performance, lack of a service orientation and slow adoption of innovation are symptoms of acute policy and management constraints within existing institutions. Despite considerable efforts in irrigation management, viable alternatives have been slow to emerge. Even in attempts to transfer management to the users, in many cases the responsibilities did not transfer; either the government department declines to let go of its authority, or the farmers themselves decline to accept what often seems a burden not an opportunity. Merrey (1997, 1996) considers that “radical decentralization” and even abolition of existing public organizations may have higher returns in the long-run rather than attempts at incremental reforms of rigid, ineffective, and, in some cases, corrupt institutions.

In Africa, the experience with IMT has been even less encouraging than in Asia. Shah, van Koppen, Merrey, de Lange, and Samad (2002) reviewed the evidence on irrigation management transfer in Africa and conclude that even where countries have gotten the ‘process’ of transfer right, the conditions are not conducive to success. Driven largely by financial pressures, governments throughout sub-Saharan Africa are in the process of transferring responsibility for irrigation management to farmers through WUAs or other farmer-based organizations. While large-scale commercial farmers have welcomed this reform, the result of government withdrawal from many of the smallholder schemes has been complete collapse. A review of international IMT experience shows that in the areas where IMT has worked, the irrigation system is central to a dynamic, high-performing agriculture; average farm size is large enough for a significant proportion of the farmers impacted to operate like agri-businessmen; backward linkages with input supply systems and forward linkages with output marketing systems are strong and well-developed; and the costs of self-managed irrigation are an insignificant part of the gross value of product of farming. These conditions characterize Mexico, Turkey, USA, and New Zealand—the countries from which IMT success stories emerge. These conditions are also found to varying degrees in parts of India, China, Indonesia, and other Asian countries—where IMT has had more limited success. In these situations, IMT worked because it made good economic sense to the farmers involved.

But these conditions are rarely found in sub-Saharan Africa. In much of Africa, irrigation schemes are designed to provide very small plots to many people, such that they are not the major source of household income. Schemes are often costly

to operate and maintain, for example schemes based on imported pumps, or that require large numbers of people to cooperate effectively. Linkages to input markets, information and other support services are weak or non-existent, while output markets rarely work well, or transport costs are so high that the farmers' produce is not competitive.

### **BASIN PERSPECTIVE**

Shah et al. (2001) describe three basic forms of institutional model for the management of basins. These are "hydrological", "administrative", and what is essentially a hybrid of the two. The hydrological model is where the area of responsibility of the primary authority is determined by the hydrological boundaries (i.e., the basin). In the administrative model either the province, state or other administrative unit is responsible for the governance of water resources with no regard for the hydrological boundaries. The hybrid is the administrative model with some form of coordination mechanism, such as a basin commission, overlaying the administrative boundaries. In reality, the governance of a basin is generally some hybrid, with a tendency either towards hydrological or administrative governance of the basin.

Water institutions in the developed world have, as the needs and resources have changed, evolved over a considerable time into formal and organized entities (Shah et al, 2001). Although many such basins do have some form of hydrological institutional arrangement, these are often not the primary institutions governing water. In fact, institutional arrangements are generally complex, as described by Svendsen (2001; 2004 forthcoming) for the Central Valley of California. In fact, for most rivers in the western United States any basin level institutional arrangement has a coordination role rather than an authority type role, and the overall management of the basin depends on relatively well resourced institutional arrangements at various administrative levels.

In the developing world, the governance arrangements are generally more administrative than hydrological, and efforts to either restructure or enhance the institutional arrangements towards a more hydrology-based model (e.g., river basin organization), with the assumption that this will lead to enhanced integration of the management, has had disappointing results (Shah et al, 2001). Despite significant encouragement, including conditionalities on financial assistance, development of basin organizations in the developing world is at best a slow process.

Shah, et al (2001) caution that experience has shown that there are "limits to leapfrogging", that is successful water governance models from developed countries cannot be transferred to developing countries, particularly given the problems facing developing countries (for example supporting agriculture carried out by large numbers of small and poor farmers) and the institutional capacities of

these countries are too different from the rich countries. That said, there are some common themes that emerge from the evolution of governance arrangements.

The Brantas River in Indonesia has been developed over the past forty years. Initially the primary focus was flood control and then irrigation, but by the mid-1980s water supply for domestic and industrial needs became a major factor in planning and managing the basin. Now, with a relatively high level of infrastructure developed, the focus has become demand management and considering transfer of water from the agricultural sector to higher value uses. From the outset, the development had a basin level focus, yet the basin development agency did not have a mandate for operation and maintenance (Sunaryo, 2002), which was the responsibility of provincial water agency, i.e., an administrative institutional arrangement.

Despite Indonesia having a basin level perspective, a long history of indigenous user-managed systems and some recent history of developing WUAs, it is only in the current reforms, which include devolution of responsibilities for water management to the sub-Provincial level (Kabupaten), that recognition has been given that users should be included in the decision making. However, in larger basins this has meant that there are many different stakeholders to be coordinated (Sunaryo, 2002). Also, with the existing variety of responsibilities for aspects of water governance there already is duplication and confusion, which the decentralization process is not necessarily improving; this has raised concerns over governance and even the potential for conflict (Rodgers, Siregar, Sumaryanto, Wahida, Hendradjaja, Suprpto, and Zaafrano, 2002).

As with Indonesia, Ethiopia has a history with a basin approach to water development. In the 1960s Ethiopia, with support from the United States, developed a water resources development plan for the Blue Nile (Abbay) river. Also, a basin agency has been governing the Awash basin for the past few decades (Tadesse, McCornick and Peden, 2004). The present policy of the Ethiopian government is to establish basin organizations for the major basins, including the Awash and the Blue Nile that will, among other things, coordinate between the riparian Regions (Provinces) in a given basin, which have the primary authority for water governance. A major concern is that it is these are additional institutions that need public resources in a setting where funds are insufficient for the existing institutions. Large cost, capacity and even constitutional issues are raised in developing basin-level river basin management institutions; and this does not even begin to address the transboundary dimensions given the international nature of the Blue Nile.

## **SYNTHESIS & CONCLUSIONS**

From the decades of work on agricultural water management, it is clear that creating effective WUAs takes time, particularly where no similar institutional arrangement exists, and it needs to have the right enabling environment.

In addition to the key principles for achieving and sustaining effective water governance, which were identified at the beginning of this paper, it is essential that the economic conditions be present that make irrigated agriculture a going concern for farmers. From the experience with WUAs, achieving this has been a tall order even in Asia where much of the physical development has been achieved.

In conditions where the infrastructure has yet to be well developed, such as most sub-Saharan African countries, the governance arrangements need to include the necessary enabling policy and economic environment, and capacity to effectively plan, implement and, perhaps most challenging, finance such developments. This is a tall order. While in Asia, WUAs have been promoted in conditions where much of the supporting infrastructure is more or less in place, and where there are markets that work, making agriculture potentially profitable, these conditions are less prevalent in Africa.

Effective management of river basins is a major challenge, and it is evident that this has to be done with a basin perspective. However, this does not necessarily require that there be an overall basin management organization. In the western United States, the institutional units with the majority of the authority and technical capacity are administrative (eg. States), as too is the case in Indonesia and in other parts of the world. Allowing that there are "... limitations to leap-frogging...", given the lessons from agricultural water management that it does take considerable time to develop new institutions and results are mixed, the promotion of basin level organizations needs to be done with due consideration for the existing administrative arrangements, including whether these agencies need to be strengthened, rather than replaced with new institutions.

A major consideration in all governance improvement efforts, whether it is associated with agricultural water management or the entire basin, is that stakeholder involvement in governance is not sufficient in itself and, as indicated in the case from Indonesia, can even further confuse the situation. Given the real costs of involving stakeholders in the governance of the greater basin, decisions with regard to stakeholder involvement need to be realistic, taking account of the resources available to maintain these arrangements and local institutional and financial capacities.

Despite facing enormous problems, many Asian countries are evolving institutional arrangements for water management at both local and basin levels that over time will lead to more sustainable and productive water management. These challenges are more daunting in sub-Saharan Africa where, in addition to



the relative under-development of infrastructure, weak policies and limited institutional capacities, the general development environment is not as favorable towards investing in agricultural water as it was in the “Green Revolution” era which helped drive the development of water infrastructure in Asia.

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