

# Integrated water resources management at the local level: the role of local government

By: Stef Smits<sup>1</sup>, Rocío Bustamante<sup>2</sup> and John Butterworth<sup>3</sup>

## Abstract

This paper considers the role of local government in water resources management and how this role is changing in response to recent policy changes such as decentralisation, and the reform of water laws and institutions. The paper suggests two main ways in which local government can respond: 1) through direct participation in water resources management institutions, and 2) by applying IWRM principles through local actions. These two approaches are not mutually exclusive and should be followed simultaneously. Some of the challenges in local government improving their water-related functions, and especially governance issues, are highlighted using the example of Bolivia.

**Key words:** local government, Integrated Water Resources Management, decentralisation, governance, Bolivia

## Introduction

Integrated Water Resources Management (IWRM) has emerged during recent years as a response to the so-called “water crisis”. IWRM seeks to tackle some of the root causes of this management crisis, namely the inefficiencies and conflicts that arise from un-coordinated development and use of water resources. It means a move away from traditional sub-sector based approaches (water and sanitation, irrigation, industry, etc) to a more holistic approach to water management based upon a set of key principles (GWP, 2000). Taken together, the principles offer a framework for analysing, and subsequently managing multiple uses of water in situations of increasing competition and conflict.

IWRM (or elements of it) is being promoted by many organisations, implemented in some areas and piloted in others. A huge effort involving amongst others the reform of water laws and establishing catchment management institutions is underway based upon the IWRM ‘recipe’.

An often neglected stakeholder in the new IWRM institutions is local government. Here we refer to local government as the lowest tier of government with full-time professional staff, such as municipalities or district councils. Following policies of decentralisation in many countries, more and more functions and responsibilities are being devolved to these levels. The main argument driving decentralisation processes is that shifting decision making and finances from central to local government leads to better quality delivery of services, fitting better to local needs, as at that level it is easier to organise social participation (Helmsing, 2002). However, opponents of decentralisation argue that local governments are too susceptible to elite capture, and lacking in capacities and resources to provide efficient and

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<sup>1</sup> IRC International Water and Sanitation Centre, PO Box 2869, 2601 CW, Delft, the Netherlands; [smits@irc.nl](mailto:smits@irc.nl)

<sup>2</sup> Centro AGUA, Universidad Mayor de San Simón, PO Box 4926, Cochabamba, Bolivia; [rocio.bustamante@centroagua.org](mailto:rocio.bustamante@centroagua.org)

<sup>3</sup> IRC International Water and Sanitation Centre, PO Box 2869, 2601 CW, Delft, the Netherlands; [butterworth@irc.nl](mailto:butterworth@irc.nl)

effective services (Faguet, 2003). It may also create more dependency than self-reliance, and it may suppress civil society initiatives. Therefore, decentralisation should not only be about local government but also about sharing of responsibilities with communities and enabling their initiatives (Helmsing, 2002), or even to markets, such as in neo-liberal models. The role of state institutions is in those cases more shifting towards regulation.

Specific responsibilities of local government differ from country to country, but can in general be classified according to the following areas (based upon Jouravlev, 2003 and Mazibuko and Pegram, 2004):

- services provision (including water and sanitation, stormwater management, solid waste management, local roads and market places etc)
- development planning and promotion (including spatial planning and promotion local economic development), and
- environmental management

In each of these functional areas there are interfaces with water resources management. This paper considers these, and especially how local governments may respond to the new policies and institutions being created under the name of IWRM. Some of the challenges facing local government are illustrated with an example from Bolivia.

## Local government functions and water resources management

### ***Water services delivery***

There is a long tradition of local government involvement in the provision of water services in Latin America (see for example Rosensweig, 2001). Local government may have a number of possible roles in water services delivery:

- As part of regulatory authority: this critical oversight function may reside with a national agency, a government ministry or local government, and is the final responsibility in guaranteeing access to a service to a constituency.
- Service provision is usual separated from an authority function (e.g. in Colombia) and a wide range of models is found which may include various forms of public provision, community management, public-private partnerships or privatised services.
- Financing and investment. Local government is often in the position to implement new infrastructure, with own funds, or funds from national government.
- Back-up support to communities who are managing the services on their own is vital where community-management is the most appropriate service provision modality and in many instances, the primary actor responsible for long-term support will be the local government (for experiences in Latin America see Lockwood, 2004).

These services interact with water resources management at two points – inlets and outlets, as these are the obvious points where the water and sanitation chain directly interacts with other uses in the water resources cycle (Moriarty *et al.*, 2004). The most critical elements from the IWRM viewpoint are the abstraction from the source (quantity, quality, and reliability issues), and discharge into watercourses (quantity and quality issues) or, indeed, recharge to groundwater.

Currently, in Latin America (and other parts of the world) many of the interfaces between water services delivery and water resources management are in a critical state. Examples abound:

- Local government and communities are struggling to secure access to water resources for water supply. In India for example, the boom in groundwater extraction for agriculture has led to many drinking water wells to dry up (Moriarty *et al.*, 2004).
- Conflicts between domestic water users and other sectors. In Tarata (Bolivia) conflicts broke out between farmers and urban water users. The latter group wanted to extend their water use to include the irrigation of small urban plots (*huertas*). The farmers feared this would affect water resources available for them, leading to the conflict (Bustamante *et al.*, 2004a)
- Disposal of untreated wastewater generates huge pollution problems around urban areas. Environmental authorities are often not able to hold local government accountable for wastewater management. Increasingly, farmers are starting to use this wastewater for agriculture, for example around Cochabamba in Bolivia (Huibers *et al.*, 2004), sometimes with large health and environmental risks.
- Conflicts about control of water resources. In Bolivia for instance community-managed water supply systems don't accept centralized management by the Municipality (Bustamante *et al.*, 2004b)

These problems call for an approach in which water services development takes place within an IWRM framework.

### **Planning processes**

Local government plays a role in promoting and planning the development of economic activities at local level. It may stimulate, for example, agricultural development, industries or tourism. However, in planning, water resources are often not sufficiently considered. All sectors have very specific water requirements: agriculture will require irrigation water of a specific quantity at certain times of the year, while tourism development may imply that water bodies are in a "natural" state, without pollution. Not all water development goals may be achieved at the same time, and trade-offs need to be managed. Difficult choices may have to be made between economic development, ecological concerns and service delivery. Local authorities need to consider water resources as a key factor in development planning and promotion.

This situation plays out as well within the local government administration. One department's activities may adversely affect another. For example, a city's water source is frequently the recipient of the city's wastewater, or the leachate of a city's waste dump site, impacting subsequently on the costs of treating drinking water. Municipal programmes to boost employment through economic activities, which turn out to be water-intensive, may contradict with other municipal initiatives to promote water savings. Integration requires amongst others:

- bringing together various municipal departments or sections, such as water and waste management, health, engineering, town and country planning

- looking for integration between the rural and urban parts of municipal areas

Local government may have various mechanisms to bring about this integration, such as integrated development planning or town and country planning.

### ***Environmental management***

Environmental management can either be seen as a cross-cutting issue in the two functional areas mentioned above, or as a local government function in its own right. In many places, it is the responsibility of local government to create and maintain a safe and healthy local environment. In practice, this overlaps to a large extent with service delivery tasks such as solid waste management and sanitation. But, it may also include the management of green and blue areas, such as parks.

In few cases, local government has formal responsibility of allocation and administration of natural resources (see sections below for more information). It might be tasked to carry out specific executive responsibilities of environmental management, which do not imply an authority function, e.g. issuing and collecting fines in cases when environmental legislation is not complied with. In relation to water resources, it means that local government often is mainly responsible for the services it delivers, but not for guaranteeing health of water bodies; that remains often with the water resources authorities.

### **Models for local government engagement in IWRM processes**

The section above shows the need to local government to engage with water resources issues. In this section we identify two main paths or models through which local government can start engaging:

1. *Engaging with new IWRM institutions.* In many countries implementation of IWRM has been taken up through the adoption of new policies, revision of water laws and establishment of new institutions for water resources management. These reforms aim to manage water in a fully integrated way, largely based upon the catchment or the river basin as a unit of management. This is what Moriarty *et al.* (2004) call “full”, or institutional-based, IWRM.
2. *Implementing IWRM principles through local actions.* A second way in which IWRM can be implemented is by adopting and following the underlying principles in the implementation in the day-to-day water business in which local governments are engaged. This is what Moriarty *et al.* (2004) call “light”, or principle-based IWRM.

These two approaches are not mutually exclusive. In fact, in most situations it will make sense for local governments to follow both approaches simultaneously (Moriarty *et al.*, 2004).

### ***Engaging with new IWRM institutions***

The principles underlying IWRM include an inherent tension between the appropriate levels of centralisation and decentralisation of water control. On the one hand, the catchment or river basin is considered as the most effective unit for water management (linked to the first Dublin principle). This will normally include several or tens of municipalities or local governments. On the other hand, the second Dublin principle makes

a strong call for management at the lowest appropriate level without specifically saying what it means: community, local government etc.

Centralised approaches, because of their higher level of scale, may be well-positioned to oversee externalities caused by different uses. They also may have sufficient hierarchical clout to enforce water resources management rules. However, there are also arguments in favour of decentralisation of water control in many contexts. Local management can then be better adapted to the local context (van Koppen *et al.*, 2005).

In Latin America we find a wide range of models in for more or less decentralised water resources management. Jouravlev (2003) distinguishes the following:

- Administrative de-concentration: delegating responsibilities and resources from a central authority to its offices at local (e.g. catchment or province) level. Well-known examples of this model are the Regional Directorates of the Dirección General de Aguas (DGA) in Chile, and the Regional Administrations of the Comisión Nacional de Aguas (CNA) in México.
- Catchment coordination and concertation bodies; these are bodies who have some executive power around water resources management, and that bring together a variety of stakeholders. Various countries in the region follow this model, such as in Brasil and Peru (Jouravlev, 2003).
- Decentralisation to sub-national autonomous entities: responsibility goes to autonomous government entities, for example at provincial level, working within the limitations and strategies set by the central entity. An example of this model are the Corporaciones Autónomas Regionales (CARs) or Regional Autonomous Corporations in Colombia.
- Decentralisation to local governments. The territorial unit of a Municipality is often not the appropriate scale for dealing in an institutional way with externalities. This model is therefore not common at this scale. Sometimes, a number of Municipalities in a catchment may work at catchment scale to address water resources issues. An example is the Mancomunidad Jubones in Cuenca (Ecuador) which joins 20 Municipalities in the Jubones basin.

There are varying experiences with the different of models. There is no recipe for the kind of institutional set-up or governance structure which is most appropriate. However, a key lesson experience is that the quality of interaction between a water resources management entity, national, regional and local government, the private sector and civil society groups is vital (Brannstrom, 2004). This calls for developing governance structures in which all groups are represented and linked, and for local government to engage with these institutions.

### ***Implementing IWRM principles through local actions***

Principle-based approaches aim to develop guidelines, based on the application of IWRM principles at all stages of projects and programme cycles. The idea behind taking a principle-based approach, is that if all sub-sector and all stakeholders in water management try to apply good IWRM practice at their own level, in their own work, this will in turn lead

to the emergence of better local level water resource management, and will be an important first step in the process of IWRM.

Two useful examples of using guidelines based on the Dublin principles to implement principle-based IWRM at project or sub-sector scales are the working principles for IWRM in WATSAN developed by Visscher *et al.* (1999) and, with a broader focus, the 1998 EC guidelines for water management. Visscher *et al.* (1999) developed their principles from field research involving eight WATSAN and three IWRM projects in seven countries where the principles were used as part of a process of self assessment and improvement of IWRM practice. The EC guidelines were developed by the European Commission for use in planning, implementing and assessing water projects in the south and the heart of the tool is a series of detailed checklists that, for each stage of the project cycle, ensure that best IWRM practice is adopted. The Bellagio principles (SANDEC/WSSCC, 2000) and the Household Centred Environmental Sanitation (HCES) (Kalbermatten *et al.*, 1999) approach can be seen as ways of applying IWRM principles to sanitation development.

So far, little experiences have been found where local government have taken these or other similar principle-based approaches as the basis of their work.

### Case example: local government, water resources and water services in Bolivia

Recent decentralisation in Bolivia has involved the delegation of new responsibilities to Municipalities and the broadening of their duties from only urban to rural areas within its territory. The “*Popular Participation Law*” of year 1994 (modified in 1996) transferred responsibility over local development to the 314 Municipal Governments in the country, with local participation channelled through new Territorial-Based Organisations (OTB’s). The OTBs are now the recognized local actor in development issues. Each is entitled to an annual fund from the local municipality for community development projects which they plan and submit for approval. At least 20% of national tax income is now directed to municipalities.

Municipal Governments now have the responsibility for providing drinking water and sanitation services, invest and manage micro irrigation systems, and help protect water resources in the watersheds within their jurisdiction. These new roles constituted a major challenge especially for rural Municipalities that before were only operating in urban centres. Municipalities either provide drinking water and sanitation services directly, through an independent municipal company (e.g. cooperatives, water committees), or by transferring to a concessionaire. Concessions are found in some of the major cities and metropolitan areas but direct municipal provision and independent municipal companies are the most common models. A recent (2003) plan developed by the government in now gives the responsibility for micro-irrigation systems (irrigated area less than 100 ha) to municipalities.

However, the process of increasing the role of Municipal governments in development was not accompanied by adequate institutional strengthening and creation of capacities to

respond to the new challenges. Even though the Popular Participation Law allowed the Municipalities more resources through the “*co-participation accounts*”, these have not been adequate to finance what was needed as a result of their new responsibilities. At the same time, the budgetary spending is in most of the cases very low due to limited capacities and restrictions on amount of expenditure on personnel.

By analysing government expenditure before and after decentralisation in Bolivia, Faguet (2003) showed that central government investment priorities are more with (large-scale) economic development, than with social sectors such as water, sanitation and education and that decentralisation has indeed led to increased investments in water and sanitation. However, due to various policy limitations (such as discouragement of raising funds from third parties) and the requirement for urban municipalities to use loans for investments in water and sanitation, total investment in the sector has gone down. In the late 1990s, annual investment in water and sanitation across urban and rural areas was on average 90 USD millions and then went down to 50.5 USD millions in 2002. So, there are now relatively few investments in water compared to other basic infrastructure (health, roads etc) even though that is where community demand is.

In irrigation, there is trend of increasing investment in irrigation, from 132.7 USD millions in 2001 invested in rural development (including irrigation) to 168.3 USD million in 2002. A large part of this investments were made through Municipal governments building systems and transferring them to the communities, though in most of the cases there is no clarity about who actually finally owns those systems.

One of the important changes introduced by the Popular Participation Law is the participatory development planning process that allows communities to set their priorities for investment of the resources assigned to the Municipality. In many of these plans, water projects have been placed as a priority. The problem remains on how to balance needs with the resources and capacities that Municipalities have. In some cases, decisions about investment are taken on the basis of particular interests (like being re-elected), response to conflictive situations and other factors that are not linked to planning, and leaving many demands unattended. In many cases Municipalities have been accused of being manipulated by political interests. This has led to an extended distrust of municipal efficiency and capability to manage public resources.

Municipalities now have a mandate to look after the natural resources in their territory. The majority of them are not however ready for this new responsibility because of a lack of money, personnel and political will. Working on Management Plans (for water resources for instance) is usually expensive and doesn't show results in the short term. It is usually only done when there is external financial support to pay specifically for it, but even in then Municipalities may not have much interest because the money can be deducted from their co-participation accounts.

## Conclusions

Under the current trend of decentralisation, local government is facing increasing responsibilities in a number of areas, including new roles relating to services delivery (like more regulatory functions), development planning and environmental management. In fulfilling its roles in each of these areas, water resources should be a key factor of consideration, as these will have impact on local government's performance. Yet, local government is not at the forefront of engaging with integrated water resources management.

This paper suggests two main ways in which local government can respond to the IWRM paradigm: 1) through direct engagement with water resources management institutions (often at catchment level), and 2) by applying IWRM principles through local actions. These two approaches are not mutually exclusive and should be followed simultaneously. Whether local governments will be able to play its role in water resources management will be strongly influenced by context (physical environment, nature of local governments, character of individual catchment-level authorities etc), resources and capacities. Lessons from the literature suggest that interactions with civil society and private sector and economic interests may be just as important in ensuring the accountability of catchment-level authorities.

Local may be beautiful but....delegating new responsibilities without at the same time providing the resources and the proper support (technical, administrative,...) leads to frustration in participatory processes because initial expectations are usually not fulfilled. Local development must be supported by policies and mechanisms that allow decentralization to be effective. Especially, there is an urgent need to work on institutional strengthening of local governments in order to create the knowledge, capabilities and power for self management and sustainability. This of course implies improving the technical skills of the personnel working on water issues, but also to "empower" the institution as such in order to lead processes of development according to the needs and priorities of people. A second area for improvement lies in the definition of funding streams to which municipalities have access. At the same time, the experiences in Bolivia show that local government cannot do it on its own. It must engage with civil society to create mechanisms of distributed governance.

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