RESEARCH REPORT

84

An Assessment of Small-scale Users' Inclusion in Large-scale Water User Associations of South Africa

Nicolas Faysse

International Water Management Institute

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Contents

Acronyms

CMA	Catchment Management Agency
DWAF	Department of Water Affairs and Forestry
HDI	Historically Disadvantaged Individual
IB	Irrigation Board
MC	Management Committee
NWA	National Water Act, Act 36 of 1998
WUA	Water User Association
ZAR	South African Rand

Summary

The management of water resources is being transformed in South Africa. All water users, especially the small-scale ones, are now invited to participate in this management. At the local level, the former whites-only Irrigation Boards (IBs) are to become more inclusive Water User Associations (WUAs), incorporating all water users, whether they have a formal water entitlement or not. However, the process of inclusion did not go smoothly: only one-sixth of the IBs had been transformed into WUAs in 2003, and the actual outcomes of small-scale user involvement in the already accepted WUAs are not obvious. This report reviews the process of inclusion of small-scale users in the new large-scale WUAs.

In order to do this, it assesses what are the potential benefits of the inclusion of small-scale users in the new WUAs, what is the current situation and what are the main elements that enable or on the contrary prevent this inclusion. Small-scale user inclusion is defined here as a situation where (a) a strong relationship between small-scale user representatives and their constituencies is established; (b) small-scale users obtain the information they need, (c) voice their problems; and (d) influence decision-making. The research investigated the transformation of seven of these IBs into WUAs, as well as the creation of one large-scale, nonagricultural WUA. The analysis presented here uses information from the case studies, which are published elsewhere as International Water Management Institute (IWMI) Working Papers.

In order to assess the potential benefits of having small-scale users on board, the research investigated the possible overlap between water-related problems of small-scale users and the functions of the WUAs. The presence of small-scale users in the WUA is always beneficial, even though they are faced with the problem of lack of funds for operation and maintenance. The possible benefit of the presence of drinking water users (rural communities and farm workers) stumbles on a lack of clarity when it comes to the responsibility of the WUA with regard to water quality and drinking water supply.

The main element explaining success or failure in the inclusion of small-scale users comes from the fact that large-scale farmers are in charge of proposing what the WUA will be. These farmers have actively opened the IB to small-scale users only if the latter's activities have an impact on theirs, or if the small-scale users have to pay the fees of the WUA, e.g., which they will have to do if they are small-scale farmers. The commercial farmers are concerned about opening the management to nonpaying users, such as farm workers and rural communities.

It appears that the lack of internal organization of small-scale users such as farm workers and rural communities is a major stumbling block. While the presence of small-scale users at the management committee helps them in terms of capacity building and enables them to voice their problems, such a practice has still proved to be insufficient. In two of the cases studied, the small-scale farmers had rights to more water than they were allocated, but they did not receive the information that would have permitted them to claim more water. Finally, large-scale farmers always remain in control of the decision-making.

This report recommends external monitoring of small-scale user inclusion after the transformation of an IB into a WUA. The problem-oriented approach of this research may also facilitate assessment of the inclusion of small-scale users in the catchment management agencies of South Africa, as well as in water resource management organizations in other developing countries where large- and small-scale users share water from the same source.

An Assessment of Small-scale Users' Inclusion in Large-scale Water User Associations of South Africa

Nicolas Faysse

Introduction

South Africa is in the process of changing its institutions to break away from the legacies of the apartheid regime, which ended in 1994. This endeavor includes, in particular, the field of water resource management. During the past regime, the management of water at national and regional levels was done by the government of white South Africa, which directly controlled 87 percent of the current area, the rest being allocated to homelands.[1] At a more local level, most of the white irrigation farmers were grouped into Irrigation Boards, which managed water use and operated the water infrastructure. In places where the same river or irrigation system was used by both white farmers and black or colored ones, the latter would not be a part of the decision-making processes of the Irrigation Boards, because they did not have a formal water right or because they were situated in a homeland.

The *National Water Act*, Act 36 of 1998 (NWA), launched a profound reform in water resource management. This Act was intended to establish a more efficient system than the previous Act, by defining temporary water licenses and promoting the participation of water users in the management of water resources. The NWA provides for two new water resource management organizations, which will eventually be managed by the users: the Catchment Management Agency (CMA) and the Water User Association (WUA). The NWA also aims at "redressing the results of past racial and gender discrimination" (NWA, section 2). Subsequent government policy documents place at the core of the process the aim of securing a true involvement of Historically Disadvantaged Individuals (HDIs) in the functioning of these new water resource management organizations (Department of Water Affairs and Forestry [DWAF] 2000, DWAF 2002a). (The term 'HDI' applies to all the people who were deprived of certain rights during the apartheid time, i.e., black, colored, Asian and disabled people, as well as women.[2])

The CMAs will be established to manage, conserve, protect, control and develop water resources at the broad catchment level (Karar 2003). Each CMA will be responsible for developing its catchment management strategy and for organizing the funding of its implementation. Ultimately, the CMAs will be

[1]The "homelands" were areas where most black people were compelled to live during the apartheid regime. These homelands were supposed to become independent states, but this independence often remained theoretical.

[2]A formal definition is: "HDI means a South African citizen, who (i) due to the apartheid policy that had been in place, had no franchise in the national election prior to the introduction of the Constitution of the Republic of South Africa, 1983 (Act 110 of 1983) or the Constitution of the Republic of South Africa, 1993 (Act No. 200 of 1993) (the interim constitution); and/or (ii) is a female; and/or (iii) has a disability, provided that a person who obtained South African citizenship on or after the coming to effect of the interim constitution, is not to be an HDI" (Preferential procurement regulations, as approved in April 2001 pertaining to the Preferential Policy Framework Act [Act 5 of 2000]).

also responsible for allocating water licenses. There will be one CMA for each of the 19 water management areas in South Africa. The WUAs are to be created at a more local level than the CMAs, mainly to coordinate water management activities at scheme, tributary, or sub-catchment level. According to the Act, all water users, being farmers or not, can group themselves to form a WUA. In practice, the bulk of the WUAs tend to come from the membership of existing irrigation management organizations. First, WUAs will be created during the transfer of management of smallholder schemes from government to farmers in the former homelands (Karar 2003). Such farmer associations will usually be set up in small areas, and will follow what Meinzen-Dick calls the “Asian model,” i.e., “smaller base organization units, which allow direct participation of all members,” with “members” daily interactions and knowledge of each other for decision-making, monitoring and sanctioning” (Meinzen-Dick 1997). Second, WUAs will be created by transforming all Irrigation Boards (IBs) into WUAs, as required by the NWA. The main functions of IBs are to monitor the water use of their members and to fund, operate and maintain the waterworks in their area of jurisdiction (dams, weirs and canals). They often administer large areas and thus, according to Meinzen-Dick’s typology, are related more to the “Americas model,” i.e., “specialized, formal irrigation organizations that employ professionals”. Membership is based on a formal water entitlement, which was linked to farmers’ land ownership before 1998. Therefore, these IBs mainly comprise white irrigation farmers and do not comprise any small-scale water users, e.g., rural communities, cattle owners, and farmers who were not registered land owners in the former white South Africa or who were based in a riparian homeland.

The goal of including HDIs in water resource management takes place at two levels: the CMAs and the large-scale WUAs including both large-scale and small-scale users, bearing in mind that the bulk of the latter will come from the transformation of IBs into WUAs. In 2003, there was not yet any CMA officially set up because of the difficulty of achieving a meaningful participation of HDIs’ water users at the level of a large catchment area. By mid-2003, only about 43 IBs had been transformed, out of a total of 265 (Karar 2003), whereas the whole process was supposed to be completed by 1999. There were three reasons for the delay. First, the DWAF found it difficult to monitor the extent of stakeholder participation in the process of transformation, since the IBs were responsible for organizing this transformation and proposing a WUA constitution to the DWAF. Second, the process of approving the proposed WUA constitutions submitted by the IBs is lengthy, because the draft constitutions pass through several directorates within the DWAF and go back several times to the IB for revision. Third, the role of the WUAs in respect of HDIs was not fully defined from the start. Clearly, HDI membership in the WUA alone would not ensure their meaningful inclusion. There was a risk that HDIs would be merely virtual members of the WUA without real involvement in the management. The design and monitoring methods to ensure this inclusion of HDIs were not available at the beginning.

This report reviews the process of inclusion of small-scale users in the new large-scale WUAs. In order to do this, it assesses the potential benefits of such a move, the current situation and the main elements that enabled or prevented this inclusion. The processes involved can show the risks and opportunities for future CMAs in terms of HDIs´ inclusion, as well as for other places of comanagement, which could appear in the future through an on-going land and water license redistribution process. Two studies have proposed an analysis of the public participation process for creating a CMA (DWAF/DANCED 2002) or for setting up a local forum of water users (Motteux 2001). However, these studies analyzed the issue of public participation by itself, without focusing on how the welfare of HDIs could be addressed through such participation.

First this report briefly assesses the international experience as regards the inclusion of power-weak users in water resource management. It describes the legal responsibilities of the WUAs vis-à-vis including the HDIs. It proposes a definition of inclusion that will be used in the analysis and presents different case studies. Next, it describes the ways in which the HDIs use water, and their water-related problems. It gives the facts about the involvement of HDIs and whether their involvement results in addressing their water-related problems. Thereafter the report attempts to analyze the underlying reasons for the current successes and failures. It first considers why commercial farmers take meaningful initiatives in certain cases and not in others. It then assesses the current situation vis-à-vis the process of inclusion per se. The report finally reviews some elements that could enhance the successful incorporation of HDIs within the WUAs.

Context

Brief Review of International Experience

In order to compare the South African experience with the international experience, it is important to note that, in the IBs in South Africa, there is currently no pattern of the Tragedy of the Commons, i.e., there is neither a risk that an investment may be too small to obtain the resource, nor a risk that the resource may be over-exploited (cf. Ostrom et al. 1994). The IBs were homogenous in membership, i.e., white commercial farmers, and have generally already devised the necessary rules to prevent any situation of a Tragedy of the Commons pattern. The research exposed here shows that the inclusion of small-scale users does not jeopardize these management rules. Therefore, the considerable body of literature linking the degree of heterogeneity of users with their ability to cope with a Tragedy of the Commons pattern (for a review of this literature, see Bardhan and Dayton-Johnson 2002 or Faysse [forthcoming 2005]) does not apply here. In South Africa, the issue is how, in a situation of great heterogeneity of water users, the small-scale users among them can be adversely affected by a less than minimal inclusion in the WUA, and what the possibilities are for remedying the situation. The concern is that some users, because of their lower social status or their lesser water entitlement, may not access the management of the WUA and, therefore, may not (a) access the information they need, (b) receive the water they are entitled to according to their water rights, or (c) be a part of the decision-making process.

International experience is that, in a WUA, the most influential users may orientate the WUA decisions to suit themselves. First, this may relate to investment decisions made by the WUA (Van der Molen 2001). Second, the most influential users may draw more water than their entitlement, by exploiting either an ambiguous definition of water rights or poor implementation of water allocation rules (Tang 1992; Oorthuizen and Kloezen 1995; Mollinga 1998). The state and the users themselves can improve the representation of the smaller users and make sure that they get the water they are entitled to. They can limit the loopholes in the rules, e.g. the shift from a loose to a strict warabandi system in India (Bandarogada 1998). They can improve the representation and voting powers of the smaller users within the WUA, for instance, by introducing an one-man one-vote rule (van Koppen et al. 2002;

Salman 1997). In Mexico, the leadership positions are set to ensure an equitable representation of the two different socioeconomic users: collective farms and private growers (Kloezen 1999). The WUA can also have water allocation rules that favor the small-scale users in periods when water is scarce (van Koppen et al. 2002). These interventions are, however, limited because the WUA is generally perceived as a group of users that should as far as possible, operate independent of the state. For instance, in India, while positive discrimination takes place at all government levels, including the local municipalities, it does not take place within the WUAs (Das 1999).

South Africa's attempt to impose the inclusion of small-scale users in already existing large-scale water user association is, in fact, rather unique. There is only one similar case in Zimbabwe, where the 1998 Water Act created Catchment and Sub-Catchment Councils that include a very large span of stakeholders. The reform in Zimbabwe was based on the premise of a rational discourse among free and equal participants (Kujinga and Manzungu 2004). There is also some reference to an aim of "redressing past inequitie." A noticeable difference with the South African case is that these councils were set up from the outset and were not derived from well-established white-only organizations: from the beginning, small-scale members outnumberd large-scale ones. However, these councils faced several difficulties with regard to small-scale user participation: (i) a very skewed gender representation; (ii) lack of a proper election process and accountability of small-scale user representatives—mainly due to the very fast process of setting up the councils; (iii) insufficient knowledge and language difficulties for these representatives, who, therefore, did not really participate in the discussions; and (iv) white farmers getting the control of new catchment councils (Manzungu 2002; Latham 2002; Dube and Swatuk 2002; Tapela 2002; Kujinga 2002). Moreover, commercial farmers expect the new Catchment Councils to deal with water resource management, while small-scale users are concerned at first by a need to develop water infrastructures (Chikozho 2002). Besides, it must be noted that the "fast-track" land resettlement program significantly affected the implementation of the Water Act.

The Legal Setting for the Transformation of IBs into WUAs

The NWA requires that IBs become WUAs. However, besides the overarching goals of "promoting equitable access to water" and "redressing the results of past racial and gender discrimination", the only specific reference in the NWA to the role of WUAs with regard to HDIs is that they should take into account the need to redress past racial and gender discriminations when developing their Business Plans. In practice, the DWAF sets two objectives for the transformation, one relating to WUA jurisdiction and the other to WUA functions.

The area of jurisdiction may be broadened for the WUA to encompass all the water users of the same resource. The Management Committee (MC) of a WUA should invite all water users in the area of jurisdiction, whether they have a formal water license or not (Karar 2003; DWAF 2000). The review of the international experience showed that representation of the smaller users can be secured, either by imposing egalitarian voting rules or by ensuring the presence of these smaller users on the MC. In South Africa, it was decided not to impose egalitarian voting rules (the IBs are free to propose the voting rules they desire) but rather to require the presence of HDIs at the MC. A water user is not compelled to join the WUA; however, the IB must ensure that there was adequate propaganda in order to make certain that all water users were aware of their option to join the new WUA.

The functions of the WUA are separated into principal and ancillary functions (Schedule 5 of the NWA). The principal functions are the

core responsibilities of the WUA and should always be performed. They are usually the same functions as those performed by the IBs: the management of water use by farmers as well as the building, operation, and maintenance of waterworks. The WUAs are not entitled to modify the distribution of water licenses, which is a task of the DWAF until it will be delegated to the CMAs. The WUA may also perform ancillary functions, if these functions do not endanger the financial sustainability of the association. According to the existing constitutions, these ancillary functions can be, for instance: performing catchment management functions delegated by a CMA, providing bulk water for rural villages, and providing aid to the HDI community. Finally, the WUA should be an instrument for social change, not only with regard to race, but also with regard to gender (DWAF 2000).

Research Design

Research Concept: A Definition of Inclusion

A definition of inclusion is proposed, in order to be used as a yardstick to evaluate the impact of HDI involvement. This definition gives the necessary conditions under which HDI involvement may lead to positive impacts for the HDI community. The concept of inclusion has taken precedence over that of participation, because in all the cases of transformation among the IBs studied. HDIs are to be incorporated in well-established organizations and they are to remain a minority in the MC membership in almost all these cases. In order to define inclusion, several studies propose definitions of a “ladder of participation” for stakeholders, which categorize the different levels of their involvement in a decision-making process (for a review of this literature, cf. Bruns 2003). While these ladders were initially defined in the setting of a decentralization issue, i.e., where the government involves the stakeholders in the decision-making process, they can also be applied to HDI involvement in the large-scale WUAs. HDIs’ involvement can range from the lower rung—non-participation—to different degrees of tokenism, to the final upper rung, which corresponds to a situation where stakeholders influence the decision-making process. A particular issue raised by Edmunds and Wollenberg (2001) is that the participation of smaller users may also have negative impacts. Users may be forced to accept decisions for which the MC voted, which, however, may not benefit them, with the appearance of a consensus among stakeholders from the viewpoint of an external monitoring organization.

For the purpose of analysis in this research, a more precise definition of the inclusion is proposed. The inclusion of small-scale users will be considered as achieved if the following four conditions are met:

- an active two-way link between small-scale user representatives and their constituencies;
- access to the information they need, and the capacity to use it;
- the ability to voice an opinion, both during the decision-making within the WUA, and to other organizations through the WUA; and
- the ability to influence decision-making.

This inclusion will be differentiated with the involvement of HDIs, which is defined here as a mere presence of HDI in the MC of the IB or the WUA.[3]

The DWAF policy documents regarding the inclusion of HDIs use four categories of HDI water users: (a) the emerging farmers are small-scale farmers who have a water license or who are supposed to obtain one soon; (b) the upcoming farmers are persons who would like to start farming but are compelled to wait, for instance, because they do not have a water license; (c) the farm workers living on the commercial farms; and (d) the rural communities, which encompass domestic water users as well as the micro-scale users who, under Schedule 1 of the NWA, do not need a formal water license, i.e., people who need water for "reasonable domestic use, small gardening not for commercial purposes and the watering of animals." These people are called hereafter "Schedule 1 users."

Case Study Methodology

The research is based on eight case studies, which were selected on the basis of two criteria. First, the area must be managed by a WUA or an IB that includes large-scale users. For the sake of clarity, large-scale users can be defined as farmers having more than 100 ha or mines with more than 100 employees. Second, in the area under the WUA's jurisdiction (or the expected one in case of an IB), there must be a significant presence of HDIs, defined as either the presence of rural communities using water from the river or the canal, or at least 100 hectares scheduled for irrigation for HDI farmers. There are fourteen IBs and WUAs meeting these two criteria in South Africa (figure 1). Eight cases were chosen out of the fourteen on the basis of having different types of situation in terms of HDI water users and of covering different Provinces of South Africa: the Komati, Lomati, Umlaas and Hereford IBs and the Great Letaba, Vaalharts, Lower Olifants and Lebalelo WUAs (figure 1).

The present report presents a synthesis of the investigation of these case studies. A common methodology was used in all case studies. This background methodology and results of each case study are published in IWMI Working Papers: the IBs in Faysse and Gumbo (2004), the Great Letaba, Lower Olifants and Vaalharts WUAs in Seshoka et al. (2004) and the Lebalelo WUA in Ladki et al. (2004). Hereafter, any assertion regarding these case studies will be implicitly referring to these documents (the appendix provides some background information on each of the case studies). The main elements of the research questions and methodology were the following:

1. The water resources, waterworks, and water uses were assessed. The water issues (water quantity, quality, environment and health) were analyzed from the perspective of scientists and stakeholders. The current management of water resources was studied, especially the functioning of the IB or the WUA;

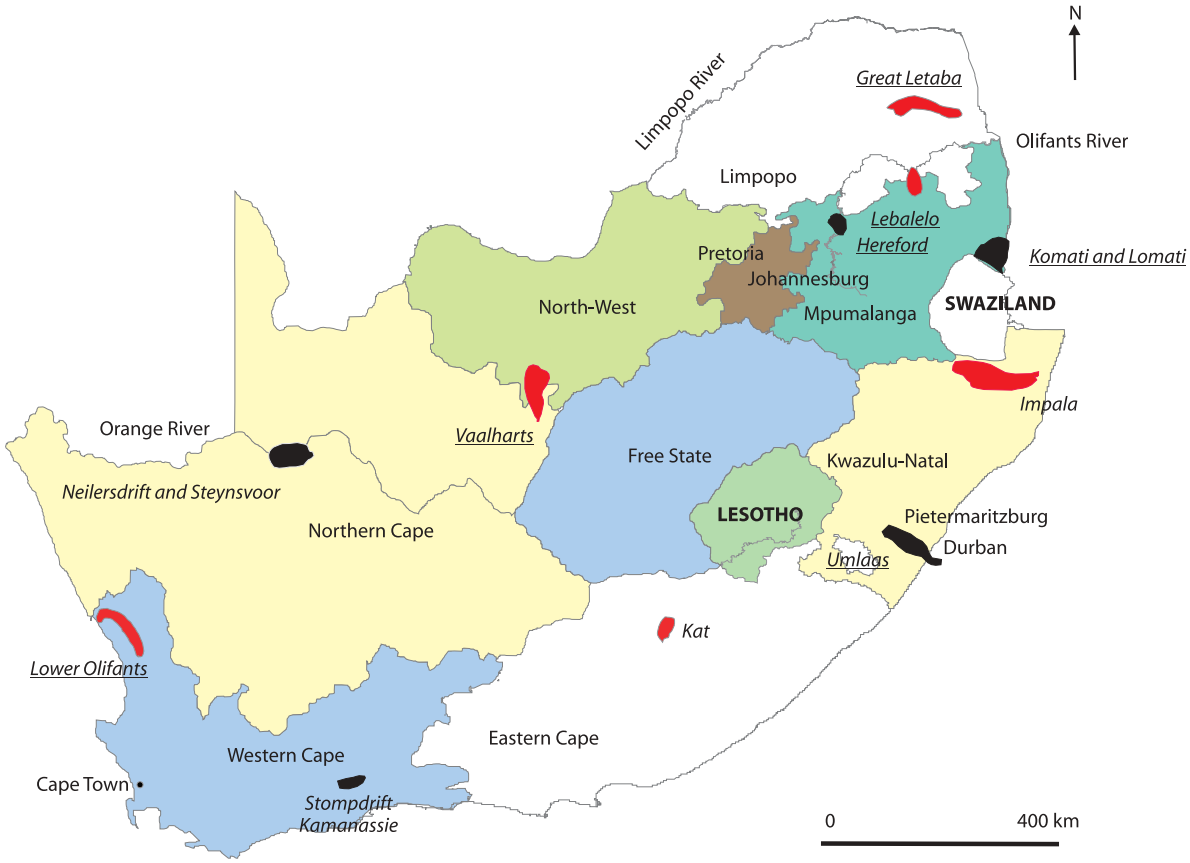
2. The HDI water users were described, and the water-related problems were assessed for each group of users;

3. The overlap between these water-related problems and the current and potential functions of the IB or the WUA was investigated;

4. The participation of HDIs, both during the process of creating the WUA and in the management committee was evaluated.

[3]In South Africa, the Management Committee of the IB is called a Governing Board. The term Management Committee is used here for both the IB and WUA for the sake of simplicity.

FIGURE 1.
Irrigation Boards or Water User Associations with a significant population of historically disadvantaged individuals.



Source: The author.
Notes: Names in Italics are Water User Associations or Irrigation Boards with a significant population of HDIs.
Names underlined are Water User Associations or Irrigation Boards studied during the research.

Water User Association.

Irrigation Board not accepted as a WUA in 2003.

The collected information comes partly from descriptions of the basin but mainly from semi-structured interviews with commercial farmers (i.e., large-scale farmers, almost always white), HDIs (both representatives and those at grassroots level whom they represented), and representatives of municipalities, the DWAF, Department of Agriculture, public institutions in charge of protection of environment, and nongovernmental organizations in charge of HDI support.

The Komati and Lomati IBs and the Great Letaba and Vaalharts WUAs have integrated emerging farmer irrigation schemes that were previously situated in a homeland. The Lower Olifants WUA operates a canal, with some emerging farmers situated in the middle section near the city of Vredendal and the Ebenhaezer community using water from the tail-end of the canal. Both the Lower Olifants and the Vaalharts systems were Government Water Schemes before the set up of a WUA, which means that they were directly managed by the DWAF. The Umlaas IB is in charge of regulating irrigation use on the Mlazi River. It has entered into active negotiations with rural communities situated on the upper reaches of the catchment

area to address erosion problems. In the Hereford IB, a group of emerging farmers belonging to the Tafelkop Farmer Association settled on an abandoned commercial farm within the Hereford IB. Finally, the Lebalelo WUA was, in 2003, the only WUA in South Africa without agricultural users. It was created to design and manage a pipeline to transfer water from the Olifants River (Limpopo Province) to several mines in the Steelpoort River Basin and to provide drinking water to the rural communities situated along the pipe.

HDI Involvement in IBs and WUAs

This section presents the current situation with regard to HDI involvement in the IBs and WUAs.

HDI water uses are classified into drinking and farming uses. For both types of use (drinking and farming), the following plan is used: (a) their needs related to water and how these needs overlap the WUA's responsibilities, (b) HDIs representation within the WUA and finally (c) the results of this involvement. This section just provides an assessment of what occurs; the reasons are analyzed in a later section.

HDI Water Use, Water-related Problems and Overlap with WUA's responsibilities

Drinking Water

In most cases, either the DWAF or the community currently operates the drinking water schemes and pays for the energy (diesel or electricity). The DWAF alone is in charge of maintenance but, in the long term, the operation and maintenance should be performed by a water service provider, such as the local municipality or a private company (DWAF 2002b). The national government provides some funds to ensure that each household receives a minimum quantity of free basic water, fixed at 6,000 liters per household per month (DWAF 2002b). Table 1 shows where the policy of free basic water is already implemented, as well as presenting the different institutional drinking water supply systems in the cases studied.

There are four types of situation for which drinking water users need to interact with the WUA or IB.

- Water quality is generally not a problem because the villages have their own purification plants, and there is no large industrial use in the cases studied. The water quality of the river only becomes an issue when users drink the raw water from the river, which currently happens in the Hopewell community along the Mlazi River. The community is supplied by the Umgeni distribution company and the free basic water policy is not yet in place in the municipality to which the Hopewell community belongs. Around 1,000 persons cannot afford the current water charges or have fallen in arrears with Umgeni, hence they go to the nearby dam on the Mlazi River to fetch water for household use. Moreover, in almost all the case studies, the farm workers get water from boreholes managed by the commercial farmers for whom they work but, in the particular case of Hereford, Komati and Lomati IBs, some farm workers fetch water directly from the balance dams.

TABLE 1.
Drinking water use in the cases studied.

		Komati and Lomati IBs		Hereford IB		Umlaas IB		Lower Olifants WUA		Vaalharts WUA	Great Letaba WUA	Lebalelo WUA
Group of HDIs		Farm workers	Villages	Emerging farmers	Farm workers	Hopewell	Entembeni	Villages	Farm workers	Taung	Villages	Villages
	Villages	-	X	X	-	-	-	-	-	-	-	X
Water supply organization	DWAF, Municipality or other water supplier	-	X	-	-	X	X	X	-	X	X	
	Commercial farmer	X	-	-	X	-	-	-	X	-	-	-
Free basic water		N/A	No	No	N/A	No	Yes	Yes	N/A	Partial	Yes	No
Use of raw water from the river or the canal		Yes	No	No	Yes	Yes	No	No	No	No	No	Not relevant
Need to interact with the IB or WUA in terms of drinking water supply		Use of untreated water	Management of a dam	No	Use of untreated water	Use of untreated water from the river	No	No	WUA as intermediary between farmers and farm workers	Periods of canal closings	No	Small (currently no infrastructure)

Source: The author

Note: X denotes the type of water supply organization

- There is generally no problem of water quantity since the water used for drinking purposes has a higher priority than irrigation. One exception occurs in the Komati River basin, where the Tonga dam is used by a drinking water network managed by the Nkomazi Municipality, with several small-scale irrigation schemes upstream. In periods of low water flow, farmers have to reduce pumping to ensure that there is always enough water for the community located downstream.

- In the Vaalharts WUA, the local distribution company gets water from the Vaalharts canal and needs to be informed about the periods of closure.

- In the Lower Olifants WUA, the WUA is to be a place of discussion between farmers and farm workers in case there is a problem of water supply for the latter.

In the Lebalelo WUA, the villages are waiting for secondary networks to be built that will enable them to use their share of the pipeline. Therefore, they interact with the WUA only to discuss about how to lobby the DWAF and the Municipalities in order to reduce the delay in implementation of the secondary networks.

Irrigation Water

Emerging farmers are present in six of the eight case studies (the Lebalelo WUA interacts with rural communities and not with emerging farmers, and the case of the Umlaas IB is not considered since emerging farmers irrigate less than 6 hectares in total, without formal water rights). In the six cases that were studied, all emerging farmers were found to be a part of small-scale irrigation schemes. Farm workers do not farm their own plots. With the exception of the Komati IB, the activities of emerging farmers affect less than 15 percent of the overall irrigated area (cf. table 4 in appendix). There are some cattle farmers along the Great Letaba and Mlazi Rivers. However, they do not need to interact with the WUA or IB and, therefore, will not be studied here.

In order to assess the water-related problems of emerging farmers, it is important to highlight the fact that three types of access are required at the same time: (a) legal water access, i.e., the entitlement to withdraw a specific quantity of water of a specific quality from a river or a canal; (b) access to technical resources, i.e., the availability of equipment to transport water from the river either to the field or to the village; and (c) access to financial resources, i.e., the ability to pay the cost of distributing the water (for a more detailed discussion, see Faysse 2004).

Legal Water Access

In order for HDIs to have legal access to the water they need, there are three main issues that need to be resolved: they need to take part in decision-making; their needs must be catered to in the scheduling of water distribution, and they need to learn how to apply for increases in water allocation. First, like any farmer, the emerging farmers need to be a part of the management, so as to, for instance continue to take part in decisions regarding the operation of the dam and the restrictions during drought. For instance, in the Great Letaba River, when water levels are low in the upstream dams, the MC decides whether to apply restrictions in summer or winter. This decision is the result of negotiations between farmers with different crops and thus different irrigation schedules. If the emerging farmers are not present, their needs will not be fully taken into account. Second, emerging farmers need to get the water they are entitled to. These two needs overlap with the responsibilities of the WUA, which is in charge of the water distribution. Third, the emerging farmers of the Hereford, Komati, and Lomati IBs want more water licenses to expand their activities. In the last two IBs, there are also some upcoming farmers who would like water licenses so that they can start farming

TABLE 2.
Composition of the MC in the cases studied.

Cases studied	Lomati IB		Komati IB		Hereford IB		Umlaas IB		Vaalharts WUA	Great Letaba WUA		Lower Olifants WUA	Lebalelo WUA	
Commercial farmers	6	(6)	7	(8 or 10)	6	(7)	7	(9)	8	14		8	0	
Emerging farmers	4	(6)*[1*F*]**	7	(8 or 10)	0		0		3			1	0	
Rural communities	0	(0)	0	(0)	0		0	(≤2)	0	0	(1)	1	1	
Traditional authorities	0	(0)	0	(0)	0		0		0	0	(1)	0	0	
Upcoming farmers	0	(0)	0	(0)	0		0		0	0	(0)	0	0	
Farm workers or small-scale users	0	(0)	0	(0)	0		0	(≤2)	3 [2*F*]	0	(1)	2 [1*F*]	0	
Environment and recreational bodies	0	(1)	0	(2)	0		0		0	0		0	0	
DWAF or CMA	0		0		0		0	(≤2)	2	0	0	0	0	
Municipalities	0	(1)	0	(2)	0		0		3	0	(1)	2	1	[1*F*]
Industries or mines	0		0		0		0		1	0	(0)	2	3	
Total	**10**	**(14)**	**14**	**(20 or 24)**	**6**	**(7)**	**7**	**(≤15)**	**20**	**14**	**(18)**	**16**	**5**	

Source: The author

Notes: * There are also 5 non-voting observers in order to ensure that all small-scale schemes are represented

*F*** Stands for a female representative (if any)

Cells of the table are merged when a given seat on the MC is dedicated to two or more types of water users

For the WUAs, in case of a difference between the actual composition and the one prescribed in the constitution, the latter is given in brackets

For the IBs, i.e., those whose proposals have not yet been accepted, the figures in brackets indicate the ones in the proposed constitution

activities. However, the decision to change the water allocation pattern rests with the DWAF (and later the CMA) and does not rest upon the WUA. Nevertheless, the WUA can still play a role in capacity building of the upcoming farmers.

Access to Technical and Financial Resources
The emerging farmers also face significant problems regarding access to technical and financial resources. In the Great Letaba WUA, they struggle to maintain their pumps. In the Komati and Lomati IBs, they struggle to pay electricity fees. In all the cases studied, lack of funds is a major constraint for farming activities, even though in all cases the emerging farmers are not paying their water fees themselves. The question of whether the goal of uplifting the HDIs should be a principal function or an ancillary one remains unanswered. If it should be a principal function, the WUA is compelled to use part of its budget to fulfill this responsibility. If it should be an ancillary function, the WUA can act on a voluntary basis.[4]

Current HDI Involvement in Management

Representation on the Management Committee

There are HDI representatives on the MCs of all the WUAs and on some of the still existing IBs (table 2). In almost all situations, the composition per category is formalized. The constitution of the Great Letaba WUA is an exception: it just specifies that there should be fourteen representatives elected from five voting zones, without a specific distribution between emerging and commercial farmers. In 2003, three out of the fourteen representatives were emerging farmers.

Regarding the drinking water users, the villages are represented only in the Lebalelo WUA. Farm workers are represented only in the Lower Olifants WUA, but not in the cases where some of them drink raw water from the river (these cases are the Komati, Lomati and Hereford IBs). The Hopewell community is not part of the current proposal of the Umlaas IB because of past problems of representation and, more importantly, because the IB thought that this community was supplied by the Umgeni water distribution company and thus was not using the water from the river. Municipalities are represented in the Vaalharts, Lower Olifants and Lebalelo WUAs. Emerging farmers, where they are present, are integrated in all six cases, either in the constitution proposal for an IB or in the accepted constitution for a WUA. There is no representative of traditional authorities and the DWAF in the cases studied (however, a DWAF representative usually comes to the meetings of the Great Letaba WUA). An upcoming farmer was on the Great Letaba WUA MC in 2003, but as an elected representative of one of the voting zones and not specifically as an upcoming farmer.

Representation as Formal Members of the WUA

While the focus of the transformation has been on the inclusion of HDIs in the MC, inclusion in the MC does not mean that the HDIs are indeed members of the WUA. Two types of situation have been found in the cases studied. First, in the Lebalelo, Lower Olifants and Great Letaba WUAs constitutions, as well as in the proposed Hereford constitution, only users with a formal water entitlement are members of the WUA. In that case, the emerging farmers are the only HDI members of the WUA. Second, the Mlazi, Komati and Lomati constitution proposals define a specific category of membership for organizations that have a stake in the management, but with no formal water entitlement. The definition of such a category allows all HDI water users the option of being members of the WUA.

[4]An analysis of the current discussion about cross-subsidization within WUAs is proposed in Faysse (2004).

Results of HDI Involvement in Management

In terms of drinking water use, the WUA or IB interacts effectively with the municipalities (Vaalharts and Komati). However, the IB or WUAs do not tackle the issue of drinking raw water (Hopewell community in Mlazi River and farm workers).

In terms of irrigation, in the Komati and Lomati IBs, as well as in the Great Letaba WUA, the emerging farmers are now involved in the management and are thus aware of the decisions taken at the MC. In all the cases studied, the emerging farmers receive the water scheduled for them by the WUA or the IB. However, in the Lower Olifants and Great Letaba WUAs, the emerging farmers are entitled to a larger allocation than the amount scheduled for them. In the Great Letaba WUA, there are 2,925 hectares registered for emerging farmers, of which only 1,000 hectares are used. The Department of Land Affairs is currently paying the full fees for irrigating these 2,925 hectares, until the emerging farmers are given individual land entitlement. However, the emerging farmers receive water for 1,000 hectares only and, in periods of water scarcity, their schemes are constrained by the same water restrictions as those imposed on commercial farmers, on the basis of the 1,000 hectares they irrigate.

In the Lower Olifants WUA, all commercial farmers have an annual water volume quota and they can decide when to dispatch it. The downstream Ebenheazer community is supposed to receive a specified annual amount of water free, in compensation for its forced displacement in 1913. The WUA has decided to convert this annual quota into a scheduled flow, constant for the whole year. Yet, just like all the commercial farmers in the region, Ebenhaezer community does not have constant water needs. This unilateral WUA decision means that they cannot make the best use of their annual quota. Furthermore, the Ebenhaezer community cannot use the water at night, because they still practice flood irrigation. Therefore, although theoretically they often receive more than the required flow because of unexpected events upstream (e.g., an unpredicted variation of the evaporation in the canal distributing water), they cannot make use of this surplus flow as they can neither schedule it nor store it. Nevertheless, in the past years, the Lower Olifants WUA had decided to decrease the value of the required flow arguing the existence of this frequent surplus. (A balance dam has been built in 2003 just upstream of the Ebenhaezer community to capture the surplus flow, but the Lower Olifants WUA has not taken part in its funding.) Because of this, the Ebenhaezer community representative had quit the Lower Olifants WUA MC in 2003.

In terms of access to technical and financial resources, the constitutions of the Great Letaba and Lower Olifants WUAs, as well as the current proposals for the Komati, Lomati and Umlaas IBs, propose the uplifting of emerging farmers as an ancillary function and not a principal one. Some voluntary actions are taken: for instance, the Great Letaba WUA invested South African Rand (ZAR) 130,000 in setting up pumps for an emerging farmer scheme.[5] In the Mlazi River catchment, the Entembeni community has some cattle, which, by grazing, harms the riparian vegetation and causes erosion, which in turn may silt the Baynesfield dam downstream. The Umlaas IB paid for a project to stabilize the banks in the upstream part of the catchment. This project helped maintaining grazing fields in areas close to the community and also provided employment. Some commercial farmers also provide extension or help HDIs to commercialize their products. However, these actions remain on an individual basis. Nothing is done by the WUA as a whole.

[5]In 2003, ZAR 1.00 = approximately US$0.12.

In all the case studies, the emerging farmers do not pay the WUA fees directly. In the Great Letaba WUA, the Department of Land Affairs is paying for them. In the Vaalharts WUA and the Komati and Lomati IBs, the farmers produce for an industry, which pays the fees for them (a beer industry for the WUA and a sugar industry for the two IBs). In the Lower Olifants WUA and the Hereford IB, the emerging farmers get free water and the production costs corresponding to their water allocations are borne by commercial farmers.[6] In 2003, there was a tense relationship between the commercial farmers and the Tafelkop emerging farmers in Hereford, as the latter were not paying their water fees and also because the emerging farmers did not believe they were receiving their due share of water. As such, the Tafelkop farmers did not sit at the MC of the IB. Table 3 summarizes the results of the involvement of emerging farmers in the IBs and WUAs.

Two Factors Explaining the Results of HDI Involvement

The general situation has been described in view of its successes and shortcomings. The comparison between the case studies shows that two key elements appear to enhance or constrain meaningful involvement of HDIs: (a) commercial farmer initiatives, i.e., whether or not commercial farmers took the initiative to open the management of the IB or the WUA to HDIs; and (b) the difficulties in changing the nature and functions of a users´ association.

Commercial Farmer Initiatives

According to the NWA, each IB is to prepare and submit to the Minister of Water Affairs and Forestry a proposal for its transformation into a WUA. Although consultants are sometimes hired to organize public participation (e.g., for the Great Letaba WUA) or to write the proposal (e.g., for the Komati and Lomati IBs), the MC of the IB is the body that ultimately decides the contents of the proposal. The commercial farmers can choose to what extent they wish to open their management circle to other users. This freedom has been accentuated by the original lack of clear requirements for public participation. Moreover, there is no urgency for IBs to transform, as their legality is ensured by the NWA so long as their transformation to a WUA is in progress even though not completed. Therefore, because of IB de facto freedom to propose changes, it is important to understand the driving factors behind the decisions of commercial farmers on whether or not to open the management of their Boards to HDIs.

HDI Impact on Commercial Farmer Activities

In the different cases studied, a leading factor in the decisions that commercial farmers took as regards opening the IB to HDIs, was simply whether or not the use of HDI water use affected one of their water interests. Commercial farmers incorporated emerging farmers who were situated upstream to them or on the other bank of the river in the Komati

[6]The Lower Olifants WUA is supposed to provide free water to the Ebenhaezer community in terms of a 1925 Act that displaced them from fertile lands and settled them elswhere downstream, leaving the lands for poor white farmers. The compensation for their displacement was that the Ebenhaezer community would get free water from the canal, though they would have to maintain their part of the canal themselves. However, the current legal status of this agreement and the exact amount of water to which the Ebenhaezer community is entitled under the agreement are not clear.

TABLE 3.
Results of involvement of emerging farmers in the cases studied.

Results of emerging farmers' involvement	Komati and Lomati IBs	Hereford IB	Vaalharts WUA	Great Letaba WUA	Lower Olifants WUA
Actual presence at the MC in 2003	Yes	No	Yes	Yes	Yes and No (a)
Water obtained amounts to water entitlement	Yes	Yes	Yes	No	No
Emerging farmers' payment of IB or WUA water fees	Yes	No	Yes	Yes	No

Source: The author

Note: (a) Yes for emerging farmers around Vredendal and No for Ebenhaezer

and Lomati IBs. The Umlaas IB has started several actions with the upstream rural community. In contrast, when the HDIs are situated downstream of the commercial farmers or more generally do not affect on the water available for these commercial farmers, the latter did not engage actively in the transformation. This was the case for the Ebenhaezer community in the Lower Olifants WUA and the Hopewell community in the Umlaas IB.

Paying and Non-paying Users

A second driving factor in the decision making of commercial farmers as regards whether or not to open the IB to HDIs was the question of whether the HDIs are to become paying members of the WUA or not.

Paying Users. Emerging farmers are currently the only paying users among the HDI community. The commercial farmers accept emerging farmers on the grounds that the latter are on an "equal footing" within the WUA (as pointed out by the chairman of one of the WUAs); i.e., they have the same rights and the same duties as the commercial farmers—those who pay for their water receive the water they are entitled to.

The position of the commercial farmers with regard to upcoming farmers, i.e., people that are not farming yet, is less clear. Interviews with commercial farmers in Great Letaba, Komati, and Lomati indicate that commercial farmers, in general, are not enthusiastic about upcoming farmers because of the general water shortage and also because of the limited market for their common agricultural products. Some commercial farmers suggested that, given these limitations, it would be wiser to assist upcoming farmers through the land redistribution of already irrigated commercial farms rather than by over-extending the amount of land under irrigation.

Non-paying HDI Users. The policy of the DWAF is for all water users to participate in the WUA, whether they are paying for water or not. This policy is opposed by the commercial farmers, who tend to discount the non-paying water users by regarding them not to be "serious" water users.

In the Lower Olifants WUA, at each meeting in 2001 and 2002 the representative of the Ebenhaezer community raised the problem of them not receiving their due share of water, but failed to achieve any results. The situation became a source of open conflict, but his lack of voting power within the MC, as well as a lack of expertise to prove that the community did not get its due share of water, prevented the representative from winning the case. Moreover the Ebenhaezer community is not considered as a serious water user by other commercial farmers for two reasons. First, the community receives its water for free, while commercial farmers pay around ZAR 1, 500/ha/year. Second, all commercial farmers have installed drip irrigation and balance dams, while the Ebenhaezer farmers do not have the funds to do so and still practice flood irrigation. Commercial farmers believe, therefore, that the Ebenhaezer community wastes water.

In the Hereford IB, neither the Tafelkop Farmer Association nor the Department of Land Affairs, which is the formal owner of the land, ever paid water fees. While the IB provides emerging farmers with the water they are entitled to, this lack of payment prevents any smooth integration of these emerging farmers into the MC.

Some municipalities have had a water entitlement within an IB for a long time and have been paying their water fees. In the Lower Olifants and Vaalharts WUAs and in the Hereford IB, the municipalities are registered as water users and, hence, are members of the WUA or IB. In contrast, the Nkomazi Municipality, whose area of jurisdiction encompasses both the Komati and Lomati IBs, has been getting water from these two rivers but pays a fee only to the DWAF and is not a member of either IB. The chairman of the Komati IB would like this municipality to pay a fee to its prospective WUA if it is to be a part of it (the MC of the Lomati IB is more ready to get the municipality on board when it becomes a WUA).

Another reason for the reluctance of commercial farmers to include non-paying members comes from a long history of collective management whereby, in order to ensure the financial sustainability of the IB, the MC would refuse water to any IB member who did not pay the specified fee. There is, hence, a deeply rooted idea that somebody who does not pay is not entitled to water or to a voice on the MC. The commercial farmers are also wary of having too many non-paying representatives on the MC of the WUA. In several cases, the chairmen expressed their concern that paying users (whether commercial farmers, emerging farmers or others) should retain the majority of the votes at the MC.

The situation of WUAs coming from former Government Water Schemes and not IBs (for example, Vaalharts and Lower Olifants WUAs) has its own specificities. In these schemes, the local DWAF staff was in charge of the design of the WUA constitution before the official transfer of responsibility to the WUA and thereby, to users. In these two cases, because of this, there was a more active stance towards complying with DWAF formal requirements in terms of HDI involvement. In both the Vaalharts and the Lower Olifants WUAs, the management committee welcomed the different categories of HDI water users: farmers and Schedule 1 water users. However, this specific situation did not necessarily result in real empowerment of HDI water users, as the case of the Ebenhaezer community shows. Moreover, in both cases, the presence of HDI representatives at the management committee does not necessarily mean that real decisions and actions will be taken to tackle their problems. The presence of HDI representatives of Schedule 1 water use did not have any impact in both cases in 2003.

Difficulties in Changing the Nature and Functions of a Users´ Association

Apart from the role of commercial farmers, the difficulty of transferring the functions of an IB to a WUA is another major reason for the shortcomings with regard to HDI involvement. There is a lack of clarity in the specifications of the new WUA's functions, which is sometimes aggravated by the lack of a common definition of "equity" among the WUA members.

Definition of Equity

The IBs were set up by commercial farmers in accordance with a proportionality rule. The initial capital invested in waterworks determined the land area scheduled for irrigation, which in turn defined the amount of water a farmer was allowed, the fees he had to pay to obtain the water, and his voting rights. The only limitation in this proportionality rule was the frequent limitation in the maximum number of votes per farmer. This tradition of following the proportionality rule is another reason why the IBs want to see emerging farmers on an "equal footing" with commercial farmers. It was in

order to put commercial and emerging farmers on such an “equal footing” that the Great Letaba WUA, in deciding the allocation of water for emerging farmers, ignored the fact that the Department of Land Affairs was paying for many more water licenses than were actually used by the emerging farmers. The emerging farmers of the Komati and Lomati IBs and the Great Letaba WUA accept this vision of equity because their aim is to acquire the same rights and duties as any commercial farmer.

In 2003, the Nkomazi area faced a major drought and the DWAF decided that emerging farmers of the area should be less restricted in their use of water than the commercial farmers, on the grounds that the latter had over-developed their irrigating areas. The commercial farmers, however, are reluctant to accept this differentiated treatment.

The underlying concept of equity is viewed differently by two other groups of emerging farmers in the case studies: the Ebenhaezer community in the Lower Olifants WUA thinks that, as a consequence of the past (compulsory) agreement, its farmers should be given a certain amount of free water. They do not want to see this special treatment discontinued. The Tafelkop farmers in the Hereford IB think that, as newly emerged farmers, they should receive as much water as is necessary to farm profitably. This lack of a common definition of “equity” in water allocation was a driving factor behind the failure to generate long-term participation of emerging farmers in the MC in the two latter cases studied.

Lack of Clarity in WUA Responsibilities

WUA responsibilities vis-à-vis drinking water users and Schedule 1 users are not clearly defined. In terms of drinking water, in places where raw water is clean (e.g., Hereford canal) water only needs to be filtered and chlorinated, and thereafter, the responsibility of the IB or WUA is limited to preventing accidental pollution. In contrast, the water in the Mlazi River is polluted by agricultural chemicals that are used upstream. This raises a problem with the definition of the “normal” quality of the water in the river. If the normal state of the river is defined as “suitable for drinking water,” the Hopewell community is entitled to receive water from the Mlazi River that is of the same quality as the water in the past. In that case, the commercial farmers would have to compensate the Hopewell community so that they can freely access water of suitable quality from elsewhere besides the polluted Mlazi River. If the normal state of the river is defined as only “suitable for irrigation,” then the problem of supplying Hopewell with drinking water from the river is not part of the Umlaas IB’s responsibilities.

As defined in the NWA, Schedule 1 users do not need water licenses. However, it is not clear as to what extent the definition in Schedule 1 requires the WUA to schedule some water for them. Members of the Hopewell community, as Schedule 1 users, have a legal right to use water from the dam. However, they cannot access it because the banks are too steep, and there is no clear definition of who is responsible for installing safe access for them.

The transformation from IB to WUA amounts to shifting from a situation where the only people who have a voice in management are the ones who have formal water entitlements, to a situation where every water user can have an equal voice in management. The WUAs fall between the traditional IBs, where members necessarily have a formal definition of water entitlement, and the new catchment forums or other scheduled lower-tier structures of the CMA. These catchment forums are not defined in the National Water Act, but many of them have been set up at a local level in South Africa. These forums are informal gatherings of stakeholders in a small-scale catchment. They are very open in terms of member participation but do not have any management responsibilities. The balance between the different types of organization is difficult to achieve.

Assessment of the Conditions for HDI Inclusion

The four key conditions for the inclusion of HDIs' water users have been previously defined as:

1. organization and representation of the HDI community;
2. their access to information;
3. their capacity to voice problems; and
4. their capacity to influence decision-making.

The current status of these four factors in the cases studied is analyzed below.

Organization and Representation

A Need for Formalization. The capacity of HDIs to organize and to formally mandate a representative to participate in the WUA is a key factor in addressing their water-related problems. There is a difference between public participation in the process of building an organization and users' representation in the subsequent decision-making of the organization. On the one hand, during the setting up of the organization, many people are invited to come and state their needs and their expectations. In this phase, the more people attend the better. It is not necessary to ensure that each person present has been formally elected as a representative of a water user group. On the other hand, once the organization is set up, management decisions are taken and the persons present at Management Committee meetings can no longer be there as individuals. There is, therefore, a need to organize each sector so that these persons have a real mandate from their constituency and are able to provide feedback to their constituencies on what has been discussed at the MC.

Organization for Representation. The organizational capacity among HDI water users is diverse. The small-scale irrigation schemes have an existing internal management committee, which designates a representative to the WUA MC. This representation functions well usually, though in the Great Letaba and the Lower Olifants WUAs, some emerging farmers complained that they were not kept informed by their representatives on management matters. In contrast, a suitable organization is often missing for the other groups of HDIs: rural communities, farm workers, upcoming farmers, and women water users.

The representation of the rural communities is currently a thorny problem because the distribution of responsibilities between the traditional authorities and the newly elected municipalities is unclear in practice. In the Umlaas IB, the traditional chief in authority is accepted by some villagers, but not by all. The ward councilor would be a relevant representative, but he appears uninterested in participating. In the WUAs and IBs studied, the direct participation of the traditional authorities in the MC would generally make less sense because the issues dealt with at the MC are often complex e.g., operation of water meters and water restrictions. For this reason, it is more relevant to have representatives from the emerging farmers' own organizations and from the villages' water committees. The water committee can, in turn, refer questions to both the municipality and the traditional authority. The municipalities, however, also have internal problems which limit their ability to serve on the MC of a WUA. First, the municipalities were only established in 2000. At that time they were not ready to contribute meaningfully to the public participation process. Second, in some places (for instance, the Komati/Lomati area), most of the drinking water schemes are still managed by the DWAF, and the municipality will only become a major stakeholder once it takes over the management of these schemes.

The farm worker community is not organized at all. This proves to be a major stumbling block for their inclusion in the WUA. Perhaps the farm workers could be represented by their unions, even if these unions are small. Upcoming farmers are also not well organized but may be represented by farmers´ unions. A representative of the National African (small-scale) Farmers Union used to sit on the Lomati IB to represent all the HDIs waiting for a water license before they could start farming. The WUAs are supposed to ensure that women are represented on the MC of the WUA, but commercial farmers are almost always male and there is no female representative of other large-scale water user groups. The necessity for female representatives is then implicitly transferred to the HDI community, where women are the main domestic water users and constitute an important fraction of the emerging farmers (23% in the Hereford IB; 33% and 50% in two irrigation schemes in the Nkomazi area). However, there are only five female HDI representatives in the MCs of the cases studied (cf. table 2). There is no specific female organization dealing with water at the WUA level.

Role of the WUA. The WUA can play a role in improving HDI water user organization. The public participation process set up for the creation of the WUA can especially provide an opportunity to enhance the organization of HDI water users. In the Lebalelo WUA, the mining companies had a strong incentive to organize an extensive public participation process, because it was one of the key conditions for DWAF acceptance of the building of the pipeline. The mines invested ZAR 200,000 in the process, which led to the set up of a specific committee to represent the 86 villages involved. Regarding more technical issues, the participation of HDI representatives has improved when the IB or the WUA pays for their transport to meetings, as the Lomati IB and the Great Letaba WUA do.

Other possible organizations of HDI water users. In the Hereford IB, it was considered at one stage that the emerging farmers would create their own WUA, with a formal definition of the supply of water which the Hereford IB would have to provide them. However, the emerging farmers should take part in making important overall decisions at the IB level, e.g., on the amount by which the quota of water will be restricted, or whether to upgrade the waterworks. According to this point of view, the emerging farmers should be both part of the overall WUA and at the same time have their own organization—such as a cooperative—to deal with their own internal issues and to be able to interact directly with other organizations such as the DWAF and the Department of Agriculture.

Finally, in both the Kat River Valley and the Upper Mlazi River catchment, the participation of HDIs in WUAs takes place in parallel with their participation in catchment forums. In the Upper Mlazi River catchment, all water users are active in the forum while, in the Kat River forum, the local communities are active, but the commercial farmers do not attend (Motteux and McMaster 2002). Such forums are more flexible than the WUA MCs: many issues are brought to the table and water issues are combined with those related to local development. Such forums are all the more active if they can also discuss some projects, e.g., a Land Care erosion program in the Kat Valley and a Working for Water program to remove alien plants in the Mlazi River catchment. HDI participation can be easier to achieve in catchment forums than in formal WUAs, but these forums cannot replace a proper inclusion of HDIs within the WUA.

Accessing Information and Voicing Problems

The WUA is supposed to be a platform for the circulation of information, both top-down, i.e., enabling HDIs to access information—and

bottom-up, i.e., enabling them to voice their problems.

Accessing Information. In the cases studied, HDI presence at the MC helps them build capacity vis-à-vis the management of the IB or the WUA: operation of waterworks, restrictions and financial issues. This knowledge can in the long term improve their capacity to defend their rights (for instance, in case of water shortage), as well as their ability to propose their own initiatives. However, in two of the cases studied, it appears that their involvement in the MC was not sufficient to provide them with key information.

First, in the Lower Olifants WUA, the Ebenhaezer community representative at the MC used to complain that the community did not receive enough water. The MC would respond that the community received the flow that was scheduled. In fact, the community did receive the scheduled flow. The problem was that the scheduled flow was not only inadequate but less than what the community was entitled to. Without an in-depth knowledge of water licensing and the allocation system within the WUA, the representative of Ebenhaezer community could not challenge the way the scheduled flow had been designed. Nobody provided the representative with the needed information. Second, in the Great Letaba WUA, where the emerging farmers farm only around 1,000 hectares out of the 2,925 hectares for which the Department of Land Affairs pays water fees, the bulk of the fees goes to the DWAF and the rest goes to the WUA account. This amounts to a subsidy that mainly helps the local commercial farmers, who have 90 percent of scheduled water use in the WUA. The surplus fees could be used in two other ways: first, the emerging farmers' water quotas could be increased so that they are not affected by possible restrictions and, second, the water licenses still unused after the increase of emerging farmers' allocation could be rented out to large-scale users. The resulting funds could then be invested in emerging farmers' schemes. Emerging farmers do not have the knowledge and the institutional network to push forward these kinds of ideas.

The involvement of HDIs within the WUA depends on how much trust the HDIs have in the management of the WUA. In places where the relationship between small-scale users and commercial farmers is initially difficult, the lack of a transparent information system will hamper the building of this trust. In the Hereford IB, the water is distributed from the canal to the farms through gates. The (white) water bailiff calculates the height to which the gate has to be opened in order to give each farmer the amount of water he is entitled to. While all the commercial farmers trust the bailiff, the relationship between the IB and the emerging farmers had been tense because the latter did not believe that they were given their due share of water. In 2003, a water meter was installed at the entrance to the emerging farmers' scheme so that these farmers can control the amount of water they receive. Such an information system will be a key to building trust between farming groups and the water baliff.

Access to information is also improved if language problems are catered for (a translator is hired during the MCs of the Lomati IB) and if there is a real strategy to build knowledge, as opposed to merely being exposed to information. According to a commercial farmer, the HDI representatives at the MC of his IB were merely coming to get the transport allowance, which the IB provides them. However, because of a lack of basic knowledge, they did not understand the issues discussed at the Board and thus did not really benefit from being there. To tackle this, in the Lomati IB an engineer has been hired by the MC to help them manage their quotas—and, at the same time, make sure they understand and accept this management system.

Voicing Problems. The involvement of HDIs in the MCs helps them raise issues, not only with the other water users, but also with other organizations. There are often close relationships between the DWAF and the IBs, and between each IB and the HDI water users

in its area of jurisdiction. There is, however, seldom good communication between the DWAF and the HDIs. The WUA can be the means to achieve this link. In the Great Letaba WUA, during a MC meeting the representative of the Mabunda scheme complained to a DWAF representative about the management of the dam, and the commercial farmers backed him. Without access to the WUA MC, it would have been difficult for the emerging farmers to raise the issue with the DWAF. However, the presence of HDIs at the MC is not a guarantee that they will be able to voice their problems. The representative of the Ebenhaezer community voiced his complaint at the MC without much impact, since the DWAF does not sit on the Lower Olifants WUA MC.

Controlled Decision-making

In all the constitutions, the voting rights are well defined for the General Assembly. The commercial farmers, generally, retain the formal power because they have the majority of water licenses in terms of volume (with the exception of the non-farming Lebalelo WUA, where the mines have a very large majority of votes). The NWA states that the WUA can choose a system of voting rights that can be either proportional to the water entitlements, with or without an upper limit of votes per person, or one vote per person (other possibilities are not excluded by the NWA, cf. Schedule 5, section 15). However the rule of one vote per member proposed by the NWA was not chosen in any of the case studies.

In the Lower Olifants WUA and the proposed Mlazi WUA, there is a limit on the number of votes per person, but the majority still remains on the side of the commercial farmers. The Lomati and Komati IBs are the only user associations where commercial farmers do not retain the majority (they are also the organizations with the largest proportion of emerging farmers, one-sixth and one-third of water licenses, respectively, and 85% and 95%, respectively, in terms of the number of farmers). Their proposed constitutions plan a proportional rule within each category of farmers (commercial and emerging) so that there is an overall equality of votes between the two groups.

The decision-making process within the MC was more or less formalized in the different case studies. The balance of power in a MC is important, as the MC is the body that manages the WUA on a monthly basis and undertakes initiatives. According to Schedule 4 of the NWA, which provides a common legal structure for both CMAs and WUAs, “a question arising at a meeting must be determined by a majority of votes of board members present and voting” (section 14). However, such a requirement is not translated into the Model Constitution in Schedule 5 of the NWA. The proposed constitutions of the Lomati and Komati WUAs do not mention this issue, while the proposed constitution of the Mlazi WUA and the accepted constitution of the Lower Olifants WUA state that the decisions are taken by a majority of MC members, with one vote per person, whatever his/her actual status. The voting power within the MC is subtle since, in many IBs or WUAs, there is a tradition of trying to reach a consensus each time. For instance, in the Great Letaba WUA, there has been almost no voting for the past 30 years. Nevertheless, in the example of the Lower Olifants WUA, the large-scale farmers and Ebenhaezer community disagreed openly but the claims of of the Ebenhaezer representative were never addressed because of the overwhelming majority of votes held by the large-scale commercial farmers. As there is currently a large gap between the knowledge of commercial farmers’ and that of HDI representatives with regard to water issues and the management of WUA, it is the commercial farmers who take the initiative and lead the debates.

Possible negative impacts of the inclusion process on the HDI water users

This analysis of HDI inclusion was based on the assessment of the potential benefits HDIs can get from this reform. But is it also possible that it contains risks for the HDIs? As Edmunds and Wollenberg (2001) pointed out, if the involvement of weaker groups within a stakeholder platform for natural resource management is not carefully planned, it could, in fact, be detrimental to these groups. In the situation studied here, when HDIs participate in large-scale WUAs, they risk being forced to accept decisions for which the MC voted that, however, do not benefit them, creating an appearance of a consensus among stakeholders to the external monitoring organization. The research found that, at least at this early stage of participation, the positive aspects of participation are more important than this risk. In almost all the case studies, HDIs primarily lack the information they need to challenge the WUA's decisions. Given such a situation, HDI presence at the MC is the first step in capacity building and information. For instance, for the moment, emerging farmers in Great Letaba do not have the capacity to challenge the WUA's decisions because of that lack of information. In only one case study did HDI representatives decide to stop participating in the MC, in order to show their discontent and the actual lack of consensus within the MC. This took place in the Lower Olifants WUA, where the representative of the Ebenhaezer community was convinced that the decisions of the MC did not respect the entitlements of his community and decided to walk out of the MC. This drew the attention of the local DWAF office to the need to solve the problem of the lack of access to water for the Ebenhaezer community.

Recommendations: Facilitating Successful Transformation of IBs to WUAs

The analysis has pointed out some key elements that constrain the inclusion of HDIs in the new WUAs. Given these elements, three suggestions can be given to improve the meaningful involvement of HDIs: (a) greater clarity in the definition and functions of the WUA; (b) more room for flexibility in the constitution of the WUA; (c) allowance for external monitoring.

Clear WUA Definition and Functions

It would be easier for HDIs to play a greater part in their WUAs if the raison d'être and the functions of the WUA were clearly defined. The formalization of the definition of a WUA as "an association of all users sharing the same irrigation scheme, river or catchment, whether they have a formal water entitlement or not," would provide a stable foundation for increased participation by HDIs. The functions of the WUA with regard to drinking water users or the Schedule 1 water users should also be clarified. Another issue is the role that the WUAs could play in the general development of emerging farmers. Even though overloading the WUAs with externally imposed functions might endanger their sustainability, commercial farmers could share their knowledge with the former, especially with regard to the efficient scheduling and application of on-farm irrigation. The WUA could also support emerging farmers by imposing lower water restrictions on them

than on commercial farmers when water is scarce. Moreover, this policy would not impact much on commercial farmers since, with the exception of the Komati and Lomati IBs, the emerging farmers represent less than 10 percent of the overall water allocation.

Flexible Constitutions

There is a need at present for flexibility in the specifications for membership of the WUA and of the MC. The necessity for HDIs to participate in their WUA can differ greatly from one place to another (e.g., whether farm workers are farming and drinking raw water or not). There may also be a need for flexibility in the future. Currently two main constraints to the involvement of HDIs in the WUA are the lack of overlap between HDIs' needs and the WUA's functions, and poor organization among the HDI community (i.e., between the municipalities, rural communities and farm workers). The transformation process is, therefore, a long-term process, and cannot be achieved quickly as soon as the constitution is written. It is suggested that since each WUA is supposed to write a business plan, the constitution of the WUA should state that the business plan can change the composition of the MC in the future, so that it is not necessary to go through a lengthy process of modifying the constitution later.

Monitoring and enforcement

The previous analysis showed that, where HDIs do not impact on the activities of commercial farmers or where they are non-paying users, the DWAF should not expect the commercial farmers to be proactive in the meaningful incorporation of the HDIs. Once the WUA is accepted, there may still be some problems of access to information. There is, therefore, a need for external monitoring in order to ensure: first, that the non-paying small-scale users who although do not impact on large-scale user activities are nevertheless meaningfully involved in the WUA; and second, that all small-scale users have access to the information they need and are given the capacity to use it.

Finally, the earlier review of the international experience highlighted that in situations of unequal access to the management of the WUA, the most influential users may draw more water than their entitlement by exploiting a lack of clarity on water rights or a loose implementation of allocation rules. The IBs in South Africa, however, ensure strict implementation of allocation rules. In two of the cases studied, the problems came from areas where the water rights were not clearly defined. While the water rights of the commercial farmers are clear, this is not the case for the emerging farmer schemes in the Great Letaba WUA and the Ebenhaezer community. The clarification of the water rights of HDI communities should be a part of these monitoring activities.

Once a proposed WUA is accepted, the main monitoring tool for the DWAF is the business plan. This tool will be of interest, even though there is no requirement for a specific portion of the budget to be used for "redressing past inequalities." Monitoring must be done by people who are knowledgeable about water rights issues, which can be complex as the example of Ebenhaezer shows.

Conclusion

In order to study small-scale user inclusion in water resource management, which is one of the cornerstones of the South African NWA, the study investigated the inclusion of HDI water users in large-scale WUAs. The actual inclusion of HDIs varies in an important way across the cases studied and the water user groups. However, the study shows that two elements play a key role in the success of HDI involvement in the IB or the WUA. First, the transformation process has been, above all, the result of the initiatives of the large-scale users in the IB, who are usually commercial farmers. These farmers accept the presence of emerging farmers and are keen to get HDIs on board the new WUAs, if the latter impact on their water use (for instance, by being upstream). However, in general, commercial farmers are not active in getting non-paying users on board, especially if the latter are situated downstream of them. Second, the lack of clarity of the new functions of the WUA constrains the inclusion, e.g., the drinking water users. The study also identified the lack of internal organization of some HDI water user groups as being a major stumbling block for their integration. Overall, the research shows that merely focusing on the composition of the MC of the WUA is not sufficient to guarantee a meaningful inclusion of HDI water users.

It is important to note that most of the HDI water users need, before anything else, funds for investment, either for farming inputs or for water supply and sanitation infrastructures. Their interest in getting on board for improving water resource management will increase as their internal problems are solved.

Due to the past territorial apartheid policies, there are only 13 cases of Irrigation Boards that are expected to incorporate a large population of HDI water users in South Africa. However, it is important to address the problems discovered in the current analysis because the solutions may provide insight for similar situations in South Africa and in several other countries. First, in cases of considerable heterogeneity among farmers within the same WUA (e.g., in India, the Philippines, and Mexico), this research shows the potential problems of the smaller users in facing complex modern water rights. It demonstrates the need for capacity building and external monitoring in such situations. Second, there is currently a worldwide trend towards involving water users in water resource management (cf. the Dublin statement on water, Principle 2, 1992 and the World Commission on Water for the 21st Century, 2000). In many developing countries, this setup of user-driven water resource management organizations amounts to having both large-scale and small-scale users around the same table (e.g., in Brazil or Mexico). There appears to be the same fundamental question of how to meaningfully involve the smaller users. Moreover, the same issues are likely to emerge as regards the: (a) involvement of non-paying or downstream small-scale water users; (b) small-scale users´ access to information; and (c) organization among the small-scale users´ community. Third, in South Africa, the forthcoming CMAs will have different responsibilities from the WUAs. They will define a strategy for the integrated water resource management of catchments and fund it. Moreover, the CMA setup process is led by the DWAF and not by its large-scale users. However, the three previous issues will also be of importance at the CMA level. In the three previous situations, the problem-solving approach used here can be utilized in order to monitor the inclusion of the smaller users and thus to go beyond a mere focus on the public participation process itself.

TABLE 4.
Main characteristics of the IBs and WUAs studied.

		Lomati IB	Komati IB	Hereford IB	Umlaas IB	Vaalharts WUA	Lebalelo WUA	Great Letaba WUA	Lower Olifants WUA
Water transport system	Farmers	River	River	Canal	River	River and canal	Pipe	River and canal	Canal and marginally river
Registered ha[c]	Commercial[a]	9,100	14,100	3,426	4,455	37,100	0	12,500	9,200
Main crops		Sugarcane, mangoes and litchis	Sugarcane, mangoes and litchis	Citrus, wheat, vegetables	Sugarcane, maize, sorghum, sunflower	Maize, wheat, barley	N/A	Citrus, mangoes and avocadoes	Vineyards, vegetables
Registered ha[c]	Emerging	2,600	8,300	160	0	3,700	0	1,000	257
Main crops		Sugarcane	Sugarcane	Maize cotton, tobacco	Vegetables	Barley, maize	N/A	Citrus, mangoes	Beans. lucerne
Emerging farmer irrigation technique		Sprinkler	Sprinkler	Sprinkler	Flood	Pivots and sprinklers	N/A	Flood and drip	Flood
Emerging farmer location relatively to commercial farmer area		Other bank of the river	Upstream	In the middle of commercial farmer area	Upstream and in the middle	Downstream	N/A	In the middle and downstream	Downstream
Total volume allocated to the IB or WUA IN 2003 (million m^3)		100.1	222.9	26.7	N/A	345.0	13.0	110.0	112.2
Water quotas (m^3/ha)		8.5	10.0	7.7	No quota[b]	7,700 to 11,865	N/A	6.62 to 10.90	12.2
IB or WUA fees	Commercial	R400/ha	R400/ha	R1,000/ha	R165/ha	Farmers: R0.0688/m^3	R2.50/m^3 approx.	R122 to R318/ha	R1,537/ha
	Emerging	R50/ha	R50/ha						
DWAF charges		R70/ha+ R0.022/m^3 released from the dams	R70/ha+ R0.022/m^3 released from the dams	R77/ha	R0.0083/m^3[d]	Farmers: R0.012/m^3	R0.0215/m^3 for mines; R0.0219/m^3 for drinking	R84 to R150/ha	R65/ha

Source: The author

Notes: a. In all the cases studied, commercial farmers use mainly pivot and sprinkler irrigation and shift progressively to drip irrigation

b. The Umlaas IB sets water restrictions only in periods of water scarcity; no annual quota

c. There is currently no data on the actual irrigated area. The current process of registration of water use will bring some information

d. DWAF receives directly the catchments management fees, based on the water use registered by the farmers individually

In 2003, ZARI = approximately US$0.12

Appendix

Main characteristics of the cases studied

The above table 4 presents the main characteristics of the WUAs and IBs, which are presented more in detail individually hereafter.

Brief description of the cases studied

The Lomati and Komati Irrigation Boards

The Komati and Lomati IBs are situated in the Mpumalanga Province, close to the borders of Mozambique and Swaziland, in an area called Nkomazi. The irrigated area, which is of around 34,000 hectares, is mainly comprised of sugarcane farming, although commercial farmers also grow mangos, litchis and bananas. The Komati and Lomati IBs regulate the use of water along two rivers of the same name and also manage some weirs, which are situated on these rivers. An international organization is in charge of the management of the Driekoppies and Maguga large dams upstream (figure 2).

In the 90s, small-scale irrigation schemes were developed for emerging farmers to grow sugarcane in the former KaNgwane homeland. These schemes are based on an area of 7 hectares per farmer. In 2003, the Komati and Lomati IBs encompassed the largest number of emerging farmers in all the IBs and WUAs in South Africa, with such farmers cultivating 2,600 ha (14% of the land under irrigation) in the Lomati IB and 8,300 ha (34%) for the Komati IB. These small-scale irrigation schemes are situated on the bank opposite to the commercial farmer area in the Lomati IB and upstream to the commercial farmer area in the Komati IB (figure 2). The relative success of small-scale farming in this area is due to the active involvement of the sugarcane mills in organizing production and providing capacity building. Though the IBs had not transformed into WUAs in 2003, they had already incorporated the emerging farmers in their area of jurisdiction, as well as in the management of water, since 1995–1996. The main problem in the area is recurring periods of water scarcity. In 2003, rations went down to 20 percent availability for commercial farmers and 35 percent for emerging farmers in the Komati IB. The area of the former KaNgwane homeland is also densely populated by around 220,000 inhabitants. There is a strong local demand to get more water licenses and small-scale irrigation schemes to tackle unemployment problems in this area. However, due to a situation of general imbalance between resources and uses, the DWAF refuses to allocate more water licenses.

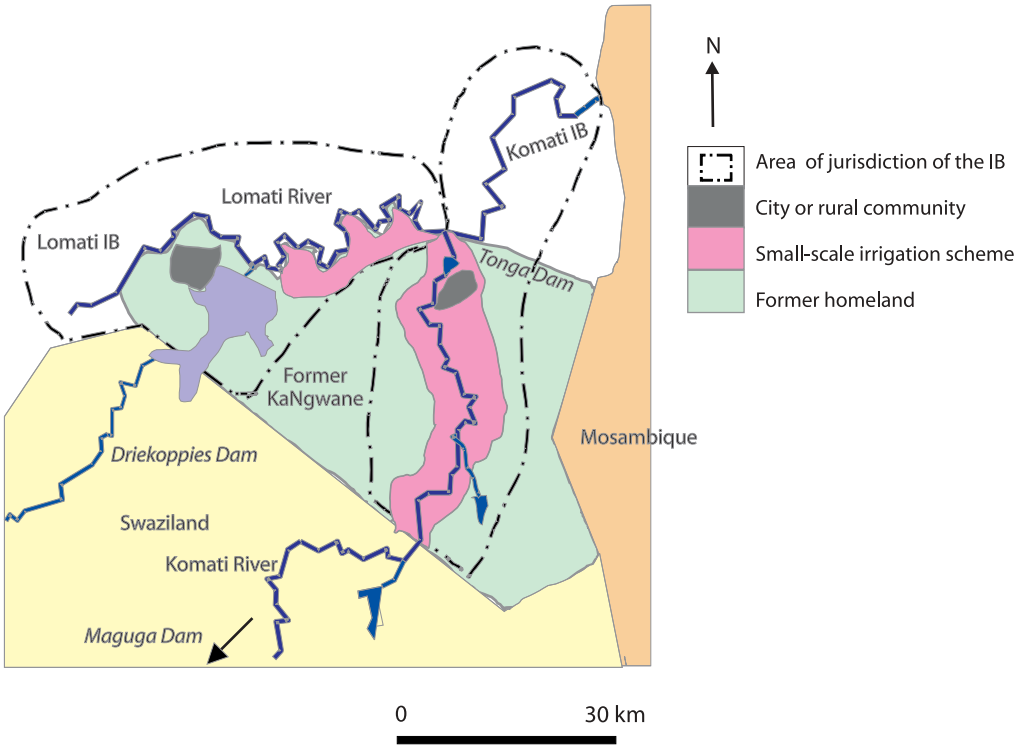
The Hereford Irrigation Board

The Hereford Irrigation Board is located in the Mpumalanga Province, 200 km north-east of Pretoria. An area of 3,426 hectares is scheduled for irrigation. The main crops are citrus and wheat. The Irrigation Board manages a canal downstream of the Loskop Dam, which is situated on the Olifants River (figure 3. Note: This Olifants River is different from the river of the same name used by the Lower Olifants River WUA in the Western Cape). Until 2003, the Hereford canal was an earthen canal, which led to structural water scarcity problems. In 2003, the IB decided to engage in a costly concrete lining of this canal.

In 1997, a group of 33 emerging farmers belonging to the Tafelkop Farmer Association, settled on an abandoned commercial farm within the Hereford IB, with 160 hectares scheduled for irrigation (figure 3). These farmers grew mainly maize, cotton and tobacco.

The relationship between commercial and emerging farmers was tense because first, the IB water fees corresponding to the emerging farmers were not paid, neither by the emerging farmers nor by governmental organizations. Second, the emerging farmers did not believe

FIGURE 2.
The Komati and Lomati IBs.



they were receiving their due share of irrigation water. As a consequence, emerging farmers stopped participating in the management committee of the IB.

In 2003, the emerging farmers' area was upgraded with a water meter at the entrance of the area, a balance dam and sprinkler irrigation. This development should improve the ability of emerging farmers to pay their water fees and should enable emerging farmers to monitor the amount of water they receive. These changes open the way for an integration of the emerging farmers in the IB and in the WUA, which is to be established soon.

The other HDI water users are the farm workers on commercial farmers. In several farms, farm workers fetch water directly from the balance dams, which is water from the canal. This issue is currently not addressed at the IB level.

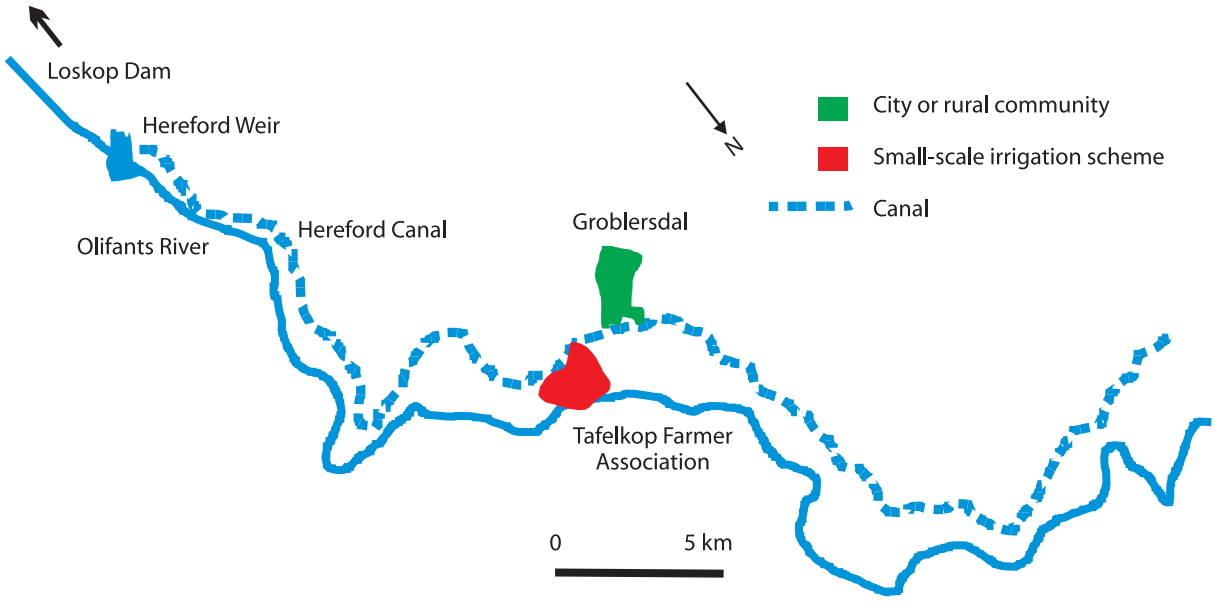
The Umlaas Irrigation Board

The Umlaas Irrigation Board is situated in the upper part of the Mlazi River catchment in KwaZulu-Natal, 30 km south-west of Pietermartizburg. The Board manages three dams and the water use along the river in its area of jurisdiction. Around 4,500 hectares are irrigated, mainly to produce maize and sorghum.

The emerging farmers irrigate less than 6 hectares in the area of jurisdiction of the IB, without formal water licenses. The Entembeni rural community is situated in the upper reaches of the catchment area.

The main specificity of this IB is its active involvement in environment issues and land use management. While times of water scarcity are rare, slopes in the upper parts of the catchment are steep and erosion can lead to siltation of the dams managed by the IB. Therefore, though the IB has not yet been transformed into a WUA, it has entered into active negotiations with the forestry companies and the upstream rural communities to address environmental issues, especially erosion problems. An environmental officer, paid by the IB, organizes a local catchment forum, where upstream communities can discuss

FIGURE 3.
The Hereford IB.



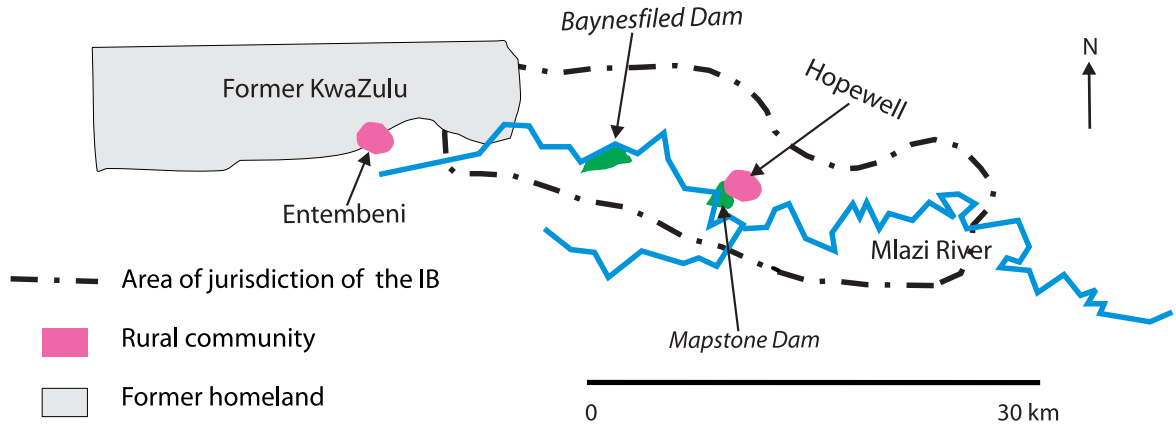
environmental projects. In 2003, the main program was named Working for Water and aimed at removing invasive alien vegetation in areas close to the riverbed.

The other HDI water user group is the Hopewell community, situated in the middle of the area of jurisdiction (figure 4). Water meters have been installed in households and the national policy of providing 6,000 liters free per household and per month was not in place yet in 2003. Therefore, many members of the community obtained their water for domestic use from the Mlazi River. The issue of the community using untreated water from the river for domestic purpose was not addressed by the IB.

The Vaalharts Water User Association

The Vaalharts WUA is situated in both the Northern Cape and North West Provinces. This WUA is one of the largest schemes in South

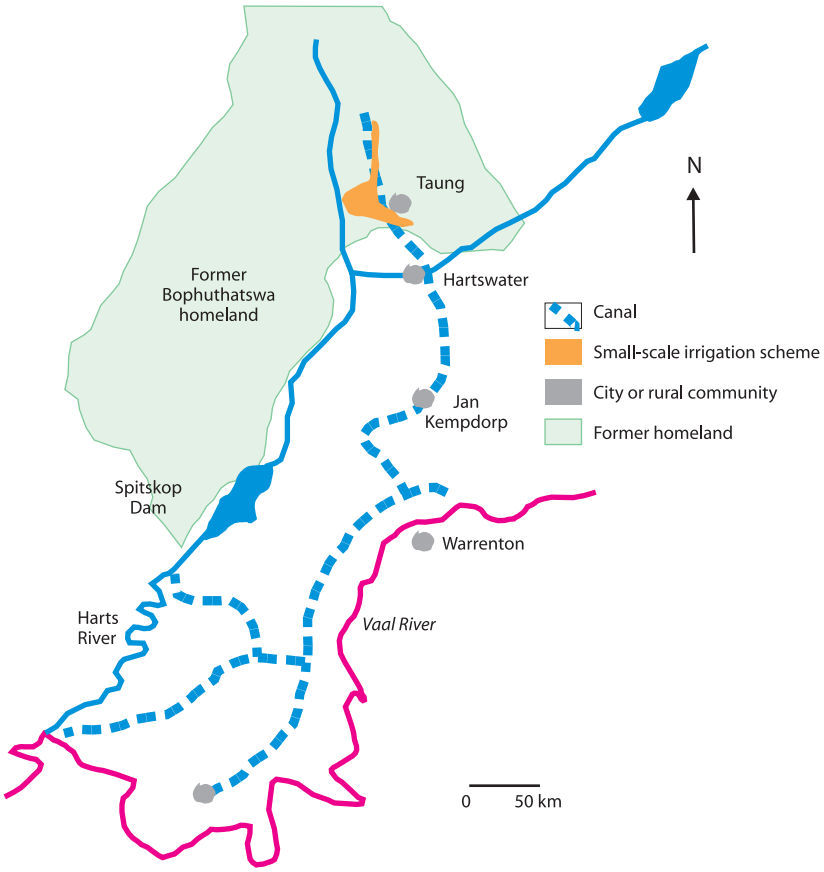
FIGURE 4.
The Umlaas IB.



Africa, with an area of 37,100 hectares scheduled for irrigation. First, it manages a network of canals, which get water from the Vaal River (figure 5). Second, it monitors water use in the area supplied by the canals and along the Harts River in its area of jurisdiction. The Vaalharts WUA is the result of integrating two government water schemes and the Taung irrigation scheme in the former Bophuthatswana homeland. The staff of the current WUA comes from the previous DWAF managed government water schemes and from the previous parastatal organization in charge of the management of the Taung scheme. The last step of the transfer from DWAF to the WUA will be the transfer of the assets, due for 2008. Situations of water scarcity that would lead to restrictions in the amount of water scheduled per hectare are rare.

Emerging farmers in Taung use mainly pivot irrigation to irrigate 3,700 hectares and have faced many financial and technical problems. More recently, a brewery company has started contracting with these farmers for the production of barley and is helping them in their farming activities. The main problem that emerging farmers face is the payment of their water fees. The brewery company, therefore, pays directly the fees of farmers with whom it has a contract. This does not apply for the other crops farmed in Taung. The well-organized WUA staff provides the capacity to undertake the steps necessary to meet the requirements of the DWAF for the inclusion of HDIs. The representation of water users in the WUA is well catered for, with representatives of different categories of water users present both at the WUA level as well as in committees existing in each of the four

FIGURE 5.
The Vaalharts WUA.



subareas. However, this organization was still new in 2003: the Taung subcommittee had not met yet and some HDI representatives of small-scale domestic water users did not understand their responsibilities.

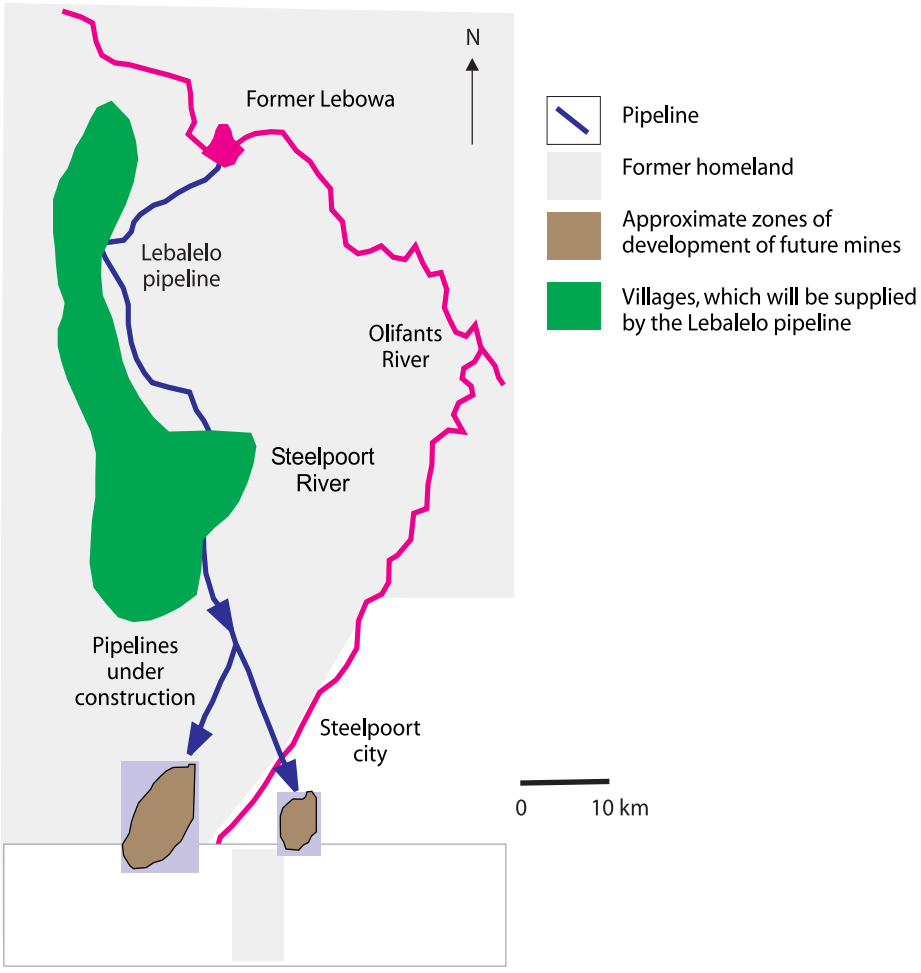
The Lebalelo Water User Association

The Lebalelo WUA is situated in both the Limpopo and Mpumalanga Provinces. It was created to design and manage a pipeline to transfer water from the Olifants River in the Limpopo Province to several mines in the Steelpoort River Basin in order to secure their water supply (figure 6). Around 8 percent of the capacity of the pipe is scheduled to supply water for the drinking purposes of the 96 rural communities situated along the pipeline.

The bulk of the WUAs in South Africa are to come from the transformation of IBs or the management transfer of irrigation schemes in the former homelands. The NWA caters also for the creation of an association of water users in a transparent way. The Lebalelo WUA is of interest in this regard because it was the only WUA in South Africa created in this way, and besides without farming users, in 2003.

An important public participation process was set up to get villages' awareness of the project and committees were set up to nominate a representative of the villagers at the management committee of the WUA. However, in 2003, the secondary networks that are to link the main pipe with the villages were not built and thus villagers were remaining only virtual members of the WUA.

FIGURE 6.
The Lebalelo WUA.



Moreover, a more in-depth study of Seokodibeng, one of the villages to be supplied by the pipeline, showed that it would be better to reinforce the institutions in charge of the current water supply systems for domestic and irrigation water use other than to supply water from the costly source of the Lebalelo WUA (Ladki et al. 2004). This finding should not however be applied to all the villages, since for some of them the local supply of water is not enough to meet the demand.

The Great Letaba Water User Association

The Great Letaba WUA is situated in the Limpopo Province, in the vicinity of the city of Tzaneen. This WUA manages the irrigation water use from the Ebenezer dam near Tzaneen up to the border with the Kruger National Park (figure 7). Commercial farmers pump water either from the Great Letaba River or from one of the five canals. An area of 12,500 hectares is irrigated in the river valley, mainly for fruit tree farming such as citrus, mangos and litchis. The area faces a general imbalance between resource and uses, and as such, water restrictions are frequent.

There are four small-scale farmer schemes (1,000 ha) for emerging farmers under the jurisdiction of the WUA. Two of them (Mabunda and Selwane) function relatively well, while the other two (Mariveni and Masalal) are plagued by internal land tenure problems. The Masalal scheme collapsed some years ago and had not yet started again in 2003. The emerging farmers are formally involved in the WUA and sit on the management committee. This helps them in terms of capacity building and also allows them to link with other institutions. The WUA also undertakes some actions to support them in their farming activities. However, in periods of water restrictions, the emerging farmers face the same water restrictions as the commercial farmers. This takes place even though the Department of Land Affairs, which is paying the water fees of the emerging farmers, is paying for much more water than the actual amount used by small-scale schemes.

The Lower Olifants Water User Association

The Lower Olifants WUA is situated in the Western Cape, approximately 250 km North of Cape Town. Its principal functions are to operate and maintain a canal that enables irrigation throughout the year in an arid stretch of land around Vredendal (figure 8). Around 9,200 hectares are irrigated, mainly for vineyards. The Lower Olifants WUA was previously a government water scheme and in 2000, became the first WUA created in South Africa.

Some emerging farmers are cultivating in the middle section of the system, near Vredendal. They have a formal representative at the management committee. Another group of HDIs is the Ebenhaezer colored community, situated downstream in the system. This community is supposed to receive a given amount of water for free, in compensation for its forced displacement in 1913. The community, however, does not receive the water on demand as the upstream commercial farmers do: Instead, it basically receives the unused flow at the end of the system. Generally, the community does receive its water entitlement, but it cannot schedule this flow nor store the unused water. The involvement of the community within the WUA should have been an opportunity for capacity building, but has failed to solve the abovementioned problem. In 2003, a balance dam was built upstream of the Ebenhaezer community, so that they can store the surplus flow and schedule their irrigation better. The representatives of farm workers attend also the management committee, but the impact of their presence is limited from the outset by the lack of organization within the farm worker community.

FIGURE 7.
The Great Letaba WUA.

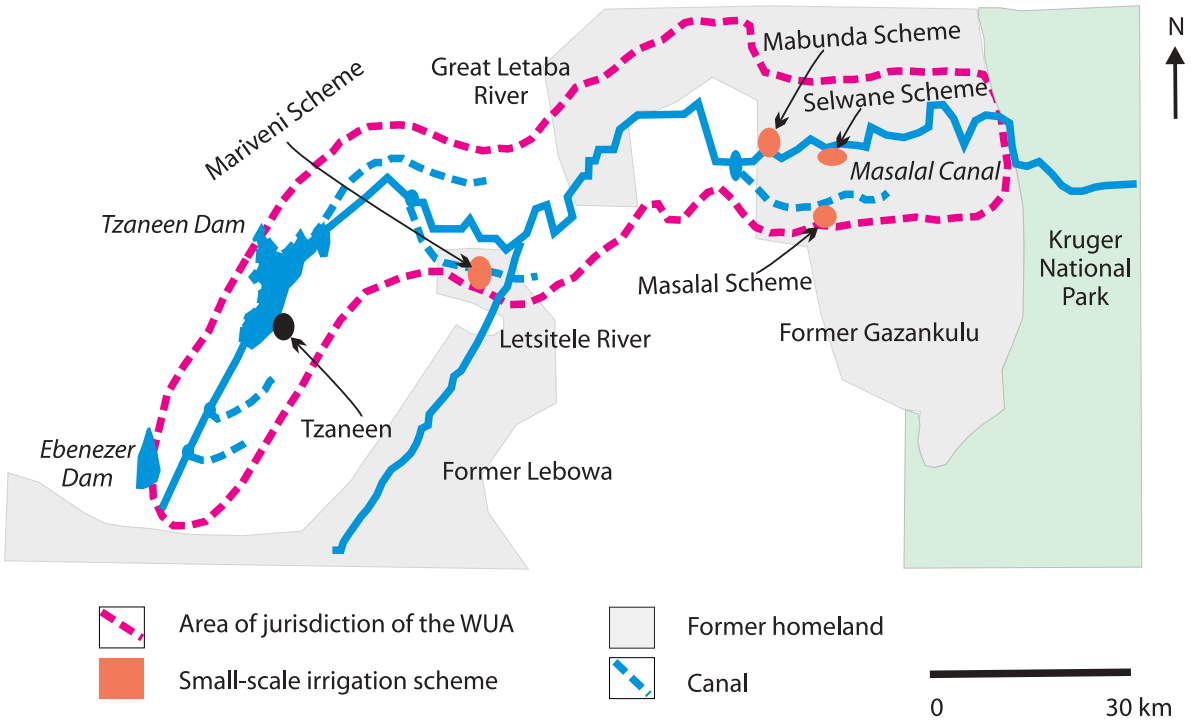
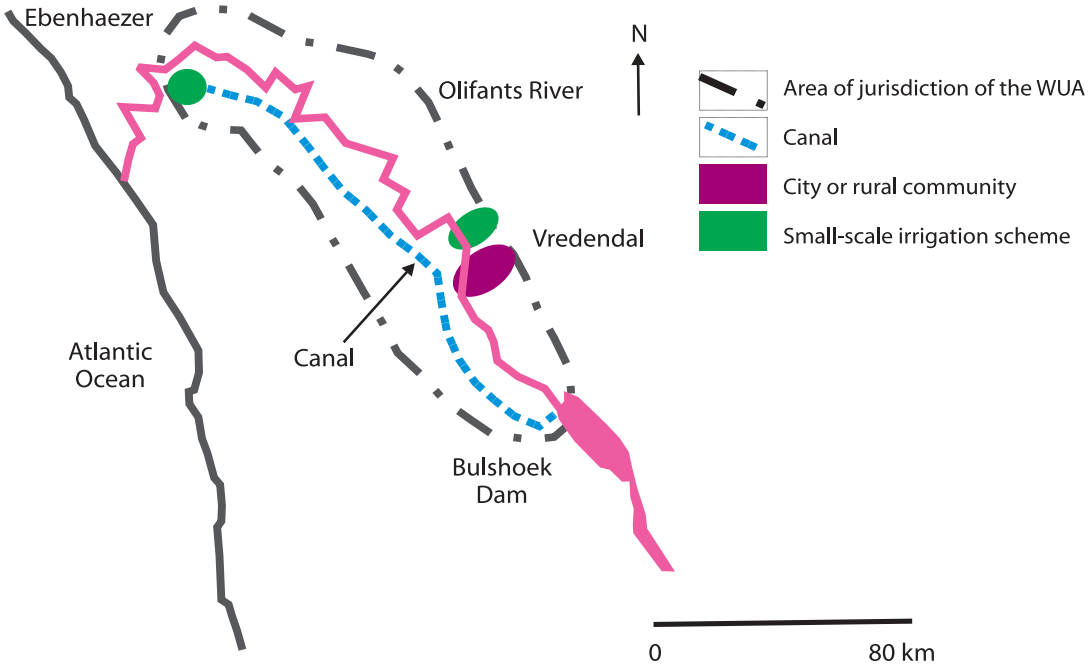


FIGURE 8.
The Lower Olifants WUA.



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