

From Bucket to Basin: Poverty, Gender, and Integrated Water Management in South Africa

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Abstract

Based on the South African experience of integrated water management under the new dispensation since 1994, this paper proposes a new paradigm for water management. Rather than as an end in itself, water management is seen as a means to eradicate poverty, foster gender equity, preserve the resource base and, thus, achieve social and environmental justice. This paradigm is rooted in the strong linkages between water, poverty, and gender. Satisfying poor women's and men's unmet water needs for domestic and productive uses, while enhancing the productivity of water used by poor men and women, is its primary aim. The far-reaching implications of the new paradigm are traced for mainstream policies and tools in the economic domain (water valuation and pricing), the legal domain (state's custody and legislation), and the governance domain (users' participation within basin boundaries). It is shown that policies proposed in international forums as blanket measures, 'equally' applicable in the North and South, for the poor and non-poor, and for men and women, are bound to aggravate poverty and widen race and gender gaps, especially under growing competition for water. Instead, the analysis of both failures and early positive experiences in South Africa and elsewhere indicate the directions for pro-poor and gender-inclusive economic, legal and governance policies and tools, and the need for strong synergy with efforts to eradicate poverty beyond the government and beyond the water sector.

1. Introduction

A new water management paradigm

Water management is not an end in itself, but a means to eradicate poverty, guarantee basic human rights to all, ensure gender equity, and preserve the natural resource base for future generations. The primary objective of water management is to contribute to the transformation of society towards social and environmental justice.

This statement reflects the policies of the government of South Africa and of an increasing number of governmental and non-governmental water and development institutions today. However, the implications of this policy statement, especially under

growing water scarcity, are hardly recognised as yet: it implies a paradigm shift in water management. This new paradigm is discussed in this paper, based on experiences in South Africa, a water-scarce country in which, in a sense, the North and South co-exist in one nation, and social inequities along race, class and gender lines are strong.

In the new paradigm, poor people's water needs for multiple purposes are the starting point. Conforming to the needs and aspirations of poor women and men themselves, action is taken from local to national and basin level to improve their access to water and their well-being. The interests of people who still have to carry buckets to supply water to their homes or tiny plots for sub-minimal welfare are at the centre stage of integrated water management at basin level. In the new water management paradigm, social divides along race, class and gender lines are key determinants, and more relevant than analysis according to 'sectors', or any other entity that insufficiently highlights poverty and heterogeneity within the entity. Sections two and three give a sketch of the role of water in poverty eradication under growing competition for water.

The later sections of the paper highlight the far-reaching implications of the new paradigm for a wide range of policies and intervention tools that are currently debated both in the international forums and in South Africa to address increasing competition over water. These measures encompass economic tools (water valuation and pricing), legal tools (the state as custodian and legislator) and governance issues (user participation and basin-level management institutions). Many professionals in the international community and donor agencies still assume that there would be best single blanket measures applicable in the North and South alike. Just some mitigating "extra subsidies" or "special consideration" or "postponed phasing in" for the disadvantaged would sufficiently address poverty and gender issues of the South. The analysis in this paper, however, shows the opposite.

The inescapable conclusion, for each of the mainstream economic, legal, and governance policies and intervention tools, is that the proposed measures are often entirely inadequate and may, in fact, aggravate poverty. In order to avoid negative impacts on poor women and men and achieve positive ones, such blanket policies are to be dismissed, thoroughly revised or nuanced. Moreover, if poverty eradication is the ultimate aim, synergy needs to be sought with other governmental and non-governmental endeavours within and outside the water sector, such as agricultural markets, that also aim to eradicate poverty, because water is often only one of the inputs in an income-generating activity like irrigated agriculture. Thus, this paper looks for a consistent and mutually reinforcing blend of multi-objective water management policies and other policies, in which meeting poor women's and men's water-related basic needs for consumption and production have absolute priority.

2. Linkages between water scarcity, poverty, and gender

2.1. Poverty

Water scarcity, poverty, and deprivation

A closer look at the linkages between water and poverty shows that the lack of access to water to meet multi-faceted basic needs is intrinsic to poverty. For poor people water is so scarce that even basic human needs, for which water is needed, such as health and incomes, are not met. Moreover, poor people's costs for water are often exorbitantly high either as drudgery of fetching water, especially for rural poor women, or as high purchase prices from vendors in areas where the subsidised piped systems do not reach. So, if water scarcity, or water deprivation, is defined as the extent to which human needs for water remain unmet, poor people suffer most from water scarcity. Water deprivation is an intrinsic dimension of the general state of deprivation that poverty is.

The primary cause of water scarcity for the poor is their lack of assets to access the available water resources, even when water resources are abundant. If, moreover, all available water resources are developed and committed and "water scarcity", as usually defined by technical people, exists, a second cause of poor people's water deprivation is added: non-poor competitors with stronger bargaining positions and more money to pay for water may directly deprive poor people of the water they already use. Any future access to water to meet their still unmet needs will be forfeited forever. Even under extreme "water scarcity" or competition the better-off still use large quantities of water for secure and comfortable living and incomes. Hence, under competition, poor people tend to suffer double, both from asset-related and competition-related water scarcity.

Multi-faceted needs

The human needs for which water is needed are multi-faceted, and so are poor people's needs that are still unmet. This is most straightforward for health, income, and lack of drudgery. All general definitions of poverty encompass lack of access to near and safe drinking water and sanitation, and its negative health impacts. In South Africa this form of poverty is extensive. Twelve million South Africans still lack adequate facilities for domestic water, especially in the rural areas of former homelands where the majority of South Africa's poor black people are concentrated.

Lack of income is the core component of poverty as it is commonly defined. What is often not acknowledged is that water is vital to increase incomes above one US dollar per day. This is especially the case for rural areas where water is indispensable for agriculture, livestock, forestry, fishery, and small industries. Rural employment is important in South Africa, where the majority of the poor are rural and where the rural population is expected to continue to increase (May 2000). One of the reasons is that people are reportedly returning to the rural areas because of growing off-farm unemployment.

Elsewhere, better access to irrigation infrastructure and water has proven to be a powerful means for income improvement among the poor in semi-arid or arid areas with high rainfall variability, by enhancing yields during a longer period of the year and at lesser risk. But in order to realise the potential of income generation, a range of other factors that hamper poor smallholders from using water productively, must be taken into account as well. Poor farmers in South Africa, the majority of whom are women, lack access to markets, inputs, training, and seasonal credits. Moreover, although irrigation-induced intensification of agriculture can have considerable income impacts on even the smallest plot, it is evident that access to more land helps better to escape poverty. The land distribution in South Africa is the second most skewed in the world, after Brazil. The slow implementation of land redistribution also hampers the adoption of irrigated agriculture and poverty eradication (Cousins 2000). Collaboration with other government departments, NGOs and private institutions beyond the water sector is clearly needed.

Competition

Under growing competition, when all available water resources in a (micro-)basin are developed and committed, water easily becomes even more scarce for poor people. Competition in several of South Africa's basins, such as the Olifants and Inkomati Basins, is growing rapidly. Poorer water users, such as the black emerging farmers in the Nkomati Basin, have limited negotiation power vis-à-vis the white large-scale farmers with whom they compete (Woodhouse and Hassan 1999). Poor people's bargaining position with mines and industries is weak as well. In the congested former homelands, the competition for scarce water resources is between smallholders and other water users, as in the Tongwane micro-basin in Mathabathaland, Northern Province (Van Koppen, Joubert and Grobbelaar forthcoming). Increasing competition not only affects current users, but also inhibits potential new entrants from even considering new investments in water infrastructure. If water management is to contribute to poverty eradication under direct competition for water, new rules and practices are needed in which former use, which is very unequal, ceases to be the main criterion for continuing use in the future.

2.2 Gender

Gender inequities in the domestic water sector

Water deprivation affects poor women more strongly than poor men. Widespread global gender inequities—men dominating the productive and political spheres, relegating low-paid jobs and unpaid domestic chores to women (UNDP 1995)—are reflected in water management policy and intervention¹.

¹Gender-sensitive water management is neither "natural" expertise nor the sole responsibility of women professionals. Being female does not, in and of itself imply an understanding of or a commitment to gender transformation—indeed there are men who are more committed to this process than some of their female counterparts. The skewed gender composition in the staff of water institutions is another issue, but not further elaborated here. We focus on the interface between gender and poverty.

The invisibility of women's work in domestic water provision is part and parcel of the general invisibility of unpaid domestic labour, across all classes, even though it represents a market value of up to 70 percent of the total global output (UNDP 1995). Or, in daily life:

The men do not know how clothes are washed. They just see the clean clothes and that is good enough for them (Sinah Thibedi, pers. communication 1999)

Poverty critically impinges on women's workload in drinking water supply. Water has never been a "free good" for poor women. Whereas the health aspects of improved drinking water supply and sanitation are well articulated at policy levels, the need to liberate poor women from this drudgery is still underestimated. Related to this, the status of the "female" domestic water supply sector as a whole is still lower than that of the "male" productive water sector.

The burdens of the responsibility to provide the family with water often fall disproportionately on women. This is illustrated in a study in South Africa, in which paying an apparently meagre US\$ 1.60 per month for water has resulted in the women having that much less money to spend on food for themselves and their children, while their husbands maintain their drinking and smoking allowances of about US\$ 8 per month—allowances which the women dare not ask to be reduced for fear, inter alia, of being beaten.

Emphasising poor women's heavy burden in domestic water supply is not to deny men's contributions to this essential component of family welfare. Across the developing world, several studies report a gender division in domestic water supply, in which men take the responsibility for most of the construction work of village wells, ponds, or tanks and also dominate their management, while women are responsible to ensure daily supply from the water source to the house².

Redressing gender inequities in the long-term would imply that water supply for household welfare becomes less drudgery and that both men and women contribute equally and share responsibilities for its provision. At community level, then, women and men would also contribute more equally to the management of water supply schemes. As women and men perform different tasks, they bring different

²Gender divisions may also diverge from this rather stereotypical picture, as is the case in slightly better-off households in cultures where women's mobility is restrained. For example, in Morocco's gravity irrigation schemes, men are the main ones responsible for fetching water from larger distances for family use; both girls and boys perform much work in fetching water as well. Another example is in the Punjab in Pakistan where men are responsible for bringing water from far during the annual period of canal closure for maintenance, when the wide range of canal water uses are stopped. Whatever the arrangements, these gender relations are not static or 'nature'-given but negotiated between the genders. In West Burkina Faso, for example, women refuse to marry into villages where the drinking water wells are inadequate. Elsewhere in Burkina Faso, among the Gourounsi, women are supposed to bring water for homesteads for free, but men pay when the women bring water to the fields where they are cultivating.

perspectives. For instance, women in a drought-prone part of Gujarat, India, insisted on a collective tap instead of connections in the homesteads, as the men had proposed. The reasoning was that a collective tap would enable them to keep a much better eye on the quantities that each of them used and, thus, on a fair distribution (Barot, personal communication). In this way, women's better inclusion in planning of drinking water schemes from the start onwards has proven to lead to better schemes. (UNDP 1999).

Hence, domestic water supply policy and intervention entail two challenges for "social transformation" (Khumbane, personal communication): lessening or abolishing unpaid work loads, which are now mainly borne by women, and fostering gender equality in the provision of water for family welfare from household level to community and basin level.

Gender inequities in the productive water sector

The challenge of redressing gender inequities in the productive water sector is to improve incomes of both women and men, rather than continuing to ignore women's income needs. Outside the water sector, the need to improve especially poor women's incomes is now widely recognised and justified for the following reasons. Among the poor, the incomes of both men and women are required to meet basic family needs. If in male-headed households women and men are responsible for different household needs, both types of needs must be met. Women's incomes, however, benefit the family relatively more than men's because, reportedly, women spend a higher proportion of their incomes on family expenditures than men do (Agarwal 1994). In female-headed households, women's incomes are usually the major source of income. A last reason for making poor women's independent economic security a priority, is that women's own economic security is the crucial factor at the micro-level that explains a reduction in fertility rates at the macro-level (Safilios 1986).

In the case of irrigation, the focus of this paper, women's needs as producers were systematically ignored. The allocation of newly developed irrigated land and water, accompanying agricultural inputs, training and marketing services has almost exclusively been to men, as criticised over a long period (Hanger and Morris 1973). Irrigation interventionists even seriously eroded women's existing land rights, productive capacities, and incomes by communicating and negotiating only with men, especially the male village elite (Dey 1980; Carney 1988; Van Koppen 1990, 1998). Men also continue to be the privileged members of Water Users' Associations and particularly dominate in decision-making committees (Chancellor 1996). Even if women are committee members, this does not necessarily guarantee that they have any say. Male committee members reportedly gave women's names as committee members, without the women themselves even knowing³, to please an external agency, politician, or donor to get more money.

³Reported in Water Users Associations in Nepal (Van Etten et al. 1999) and Andhra Pradesh, India (1999).

Irrigation planners still rarely consider women as being independent farm decision-makers who manage the production process, and control the output, and who, therefore, are the ones primarily interested in improving the productivity of their enterprise through irrigation. This is based on the stereotypical assumption that a whole family is engaged in farming, with the male household head as the manager and representative. In reality, however, farm households often diversify incomes and encompass several production sub-units within a household, with specialisation along gender and age lines. Male- and female-managed cropping units co-exist, especially in many ethnic communities in Sub-Saharan Africa. In areas with remunerative off-farm employment opportunities for men, farming often becomes the full-time activity of women. Then, farming does not provide one family income, but the income for one of its specialising adults (Safilioi 1988).

The assumption that only landowners are farmers also contributes to women's invisibility as farmers. In the irrigation sector, this is reflected in the tendency to vest water rights in the one with the strongest land titles rather than in the farm decision-maker and factual irrigator. This excludes all women farmers who cultivate land of their husband's family and have life-long tenure security to that land, but without owning it. In this respect, the South African National Water Act is unique in providing scope to vest water rights and membership in the factual water user, irrespective of his or her type of land rights.

A study in South Africa that debunks the myth that women are just helping their husbands, rather than being farm decision-makers in their own right, was done in the Tongwane catchment in Northern Province. It was found that, out of 176 households with plots in state-supported and self-initiated irrigation schemes in this basin, women are the farm decision-makers on 62 percent of the irrigated plots, and in another 14 percent they decide jointly with their husbands. The proportion of women managers is highest in the government schemes, where women decide alone or jointly with their husbands in 88 percent of the households. The lower proportion of women in the informal schemes is due to the fact that these schemes were recently started under the leadership of some men who lost their jobs in a nearby mine. The study also found that among women decision-makers, land was registered in their husbands' names in 36 percent of the cases. Among male farm decision-makers, 10 percent cultivated land registered in the names of their female kin. Overall, if in these schemes formal membership criteria were to be based upon land titles, 28 percent of the farm managers would be excluded (Van Koppen, Joubert, and Grobbelaar forthcoming). Similar results are found in other studies in Southern and Eastern African countries (Makhura and Ngqaleni 1996; FAO 1998; Safilioi 1985, 1994). These findings corroborate the need to develop irrigation and other support systems not only for men but also directly for women farmers.

In cases in which both men and women farm on their own account, gender-sensitive measures, such as fostering full representation in meetings and committees, reportedly led to women's positive responses, men's general acceptance, and thus broader farmers' support for scheme affairs. The impact of the policy change by the Provincial Irrigation Unit in the Nyanza Province, Kenya, is a well-documented example (Hulsebosch and Ombarra 1995). Traditional chiefs and agricultural extension workers in Northern Province, South Africa also favour women farmers'

stronger land rights. Giving women their own land rights would better motivate them to increase productivity, as it would protect them against men's appropriation of the fruits of their labour (Van Koppen 1999).

Women's independent position as members and their representative inclusion in committees will also be crucial for the formal establishment of small-holder Water Users' Associations and women's participation in higher-level water management bodies like the Catchment Management Agencies in South Africa.

Conclusion

In sum, a pro-poor and gender-sensitive (or people-sensitive) integrated water sector gives absolute priority to meeting poor women's and men's water needs for domestic and productive uses. Further, it transcends the current boundaries between "male" and "female" domains by attaching equal importance to domestic and productive water uses, and by overcoming the artificial institutional separation and split in mindsets between water management for "men as producers" versus "women as housewives."

As for any other policy, the policy of managing water to eradicate water deprivation among men and women requires clear definition and quantification. Goal-setting would specify the numbers of poor men and women affected and the dimensions of well-being, such as incidence of water-related disease, hours spent on drudgery or absolute and relative amounts of money spent on water, and water-related incomes gained through, for example, irrigated agriculture. Unambiguous quantified goals also allow monitoring and evaluation of progress and the assessment and comparison of the impact of different public and private measures.

Eradicating water deprivation is the challenge for the water sector. The reality that competition for water is growing cannot become another fate against the poor. On the contrary, it brings the urgency to address poor people's water needs first even more strongly to the forefront. It implies that economic, legal and governance tools that are currently proposed in mainstream international forums need to be dismissed or fundamentally revised, as argued in the remaining sections.

3. Water allocation to poor women and men: economic tools

3.1 Valuing water as an economic good

Water as an economic good

The recognition that water is an increasingly scarce good has contributed to a widespread agreement that water should be treated as an economic good. Economic analysis is more and more seen as a "rational" and "objective" tool to orient water allocation under growing scarcity. However, this statement that "water is an economic good" has "the virtue of being sufficiently vague to allow agreement, while leaving the implied operational content—over which there may be strong disagreement—unstated" (Perry et al. 1997). Three aspects of the common interpretation of this

statement are especially contentious in the light of the new water management paradigm that aims to combat poverty. First, "value" is often interpreted in a very narrow sense and based on an assumption that all people are sufficiently able to pay for water. Second, only goods that are exchanged on the monetary market and the single main use of water tend to be considered. And third, the crucial question "benefits for whom" and the distribution of wealth within society are ignored. The implications for pricing policies will be discussed in section 3.2.

Which value reigns?

In the discussion on "water as an economic good", Perry et al. (1997) argue that the issue is not whether water is an economic good, as it is, but what kind of economic good water is, a private or public and social good, and hence which values govern analysis and decision-making. Proponents of water as a private good define its value as the maximum amount that the user would be willing to pay for the use of the resource. The distribution of water should be determined by the overriding value (and not more than a value) of the consumer's sovereignty on a free market. However, their opponents find this a misleading analysis: it does not take into account that willingness to pay depends largely on ability to pay and it ignores the unequal distribution of incomes (Perry et al. 1997). Thus, valuing consumer sovereignty is incompatible with another widely endorsed value of a society, in which all people's basic needs are met, including the basic consumptive and productive needs in which water plays a role.

Valuing consumer sovereignty as primary allocation principle may make sense in Northern countries, where the ability to pay is generally sufficient to meet basic needs, but not in the South where poverty and the lack of assets to access water are still rampant. If poverty eradication is the primary goal, all water used to that end has by definition an infinite value. In fact, both the public-good and private-good adherents tend to agree on the importance of the value of poverty eradication for society. Whether private markets or public interventions, or a mix, are most effective in bringing about such a society is the question to explore.

Only single-purpose market values?

In many valuation studies, the costs, values and benefits of water tend to be narrowed down to the (opportunity) costs and gains of the main product that is exchanged on (male-dominated) monetary markets, such as irrigated crops or mining products. However, a more encompassing concept of costs, values and benefits would also include the huge benefits that are not exchanged on a market, and are often difficult to express in monetary terms. The most obvious of such impacts are the "soft-sector" health impacts of safe drinking water or unpolluted water for agricultural use. Another example is the cost of labour that is not exchanged on a market but within a household, as (female-dominated) fetching of household water is.

Further, the focus of water valuation tends to be only on the main purpose of a water source. However, one water source is often used for multiple purposes, so all uses of the water source should be counted, giving equal importance to the

“male” affair of productive water use and the “female” affair of domestic water use. The value of irrigation water, for example, becomes considerably higher if the use for livestock, fishing, homestead gardening, domestic purposes of that same water are included as well (Bakker et al 1999).

Valuing the multiple purposes of water both within and outside monetary markets has many practical applications. One application would be that new Water Users’ Associations, which are world-wide still largely single-purpose Farmers’ Associations focussing on irrigation, would open up to the many simple and no-cost or low-cost opportunities to broaden the ultimate benefits of investments in irrigation infrastructure for men and women. Also, many poor people, especially women, could get a much better deal if the development of mines, for example, as in parts of South Africa, is accompanied by additional benefits. Here the potential exists to issue licences to mines by negotiating strong added value for local poor people in a “quid pro quo” arrangement—the provision of water services from the new pipelines to the surrounding communities, the mine’s commitment to purchase agricultural products from small-holders, micro-credit provision, training, etc.

Values and benefits for whom?

Perhaps the most serious flaw in mainstream water valuation is the tendency to focus on the value of water as such, as an abstract contribution to Gross National Product, without even considering the distribution of the created wealth within society. Distributive aspects are a critical part of any valuation study and absolutely crucial if water managers intend to redress social inequities and aim to alleviate poverty. In employment creation, for example, the crucial issue is for whom employment is created. The same volume of water, if allocated to a mine, may give employment for a handful of highly qualified staff (some may be expatriates) and a limited number of male workers. However, if used in a smallholder scheme with a majority of women farmers, it may contribute to the alleviation of income poverty among a much larger group of beneficiaries, even if it created only half of the overall monetary value. So any overall value per unit of water remains rather meaningless without the analysis of distribution along race, class and gender lines, or “jobs per drop for poor women and men.” This over-arching social divide is valid across all water sectors and uses.

3.2 Water Pricing

Capital and operational costs of infrastructure

While water valuation is still a rather theoretical endeavour, the statement that “water should be treated as an economic good” already tangibly reinforced the privatisation waves in which governmental and non-governmental agencies stop subsidising capital and operational costs of water infrastructure, often under the euphemistic heading of “participatory water management.” Higher payment by users is further assumed (rather than proven) to be an effective way to promote water savings. The South African government faces this issue as well. The Department of Water Affairs and Forestry (DWA) discusses the introduction of one overall strategy for full cost recovery from all water users for water development and use and also, which is quite unique, for water resources management. The latter is currently carried

out by DWAF but in the long run intended to be delegated to Catchment Management Agencies (CMAs).

It is true that the huge subsidies in the past mainly benefited the large, non-poor water users. If water charges are proportional to volumetric water use, the larger consumers would pay considerably more than poor people who tend to be small water users. So better cost-recovery would lead better-off consumers to pay directly for services that were formerly financed from their taxes. Such pricing policies would free up considerable funds for the government. But whether governments would use these newly available funds for poverty eradication is another question.

It is also true that some private initiatives and public-private partnerships can better reach the poor than governmental and even NGO interventions. In fact, it is inherent to poverty that public interventions tend to fail in reaching this group. Small water-vendors are major suppliers of domestic water to the urban poor. Poor people in rural areas typically arrange their drinking water from wells or water management devices on their own. Competitive groundwater irrigation markets in India and Bangladesh provide good water service at competitive prices to even the poorest farmers. Much can be learned from such initiatives, about quality service provision and poor people's willingness to pay for good service. But it may be that other types or levels of subsidy, such as subsidies for bulk water supply or for rural electricity supply, have influenced these private initiatives, and are still needed in current or future infrastructure uses by poor people.

Generally speaking, pricing policies for cost-recovery of infrastructure development and operation applied as a blanket measure runs the serious risk of aggravating water deprivation and poverty. Sudden payment of high operational costs may cause some poor people to give up current water use. The creation of future new demands by poor people through subsidised new infrastructure development would be forfeited as well. Pushing poor people out of the water-business would be an ironic form of water conservation and demand management. Therefore, the South African government is embarking on a differentiated pricing strategy.

Domestic water use

When the democratic government of South Africa was elected in 1994 it immediately recognised access to drinking water as a basic right and identified the lack of subsidised infrastructure development as the main reason for the fact that more than 12 million South Africans were still deprived of near and safe drinking water supply. The government adopted a Water Services Act in 1997 and the National Water Act in 1998. The former provides the framework for the provision of water services to all, while the latter guarantees, through the provision of a reserve, that sufficient water to provide a minimum of 25 litres per person per day is set aside before water is allocated for other purposes. The costs for the first-tier infrastructure to provide for these 25 litres are subsidised by the government or cross-subsidised by well-off water users. For larger quantities, sliding tariffs are adopted. The option of individual vouchers, as sometimes recommended in global debates, is discarded as of little use for poor women, who have no supply system near their houses, nor

the contacts and organisational power to make the suppliers come. Massive implementation of new infrastructure development and stepped tariffs is underway.

The need to provide minimum levels of water supply for free was illustrated in a village in South Africa that was recently supplied with potable water but still for a fee. The Minister of Water Affairs and Forestry found a woman with a baby tied on her back, digging for water near the bank of a river. When asked why she was not using the water from the communal standpipe, her reply was that she could not afford the R10 required by the water committee to pay for the water. This example also highlights that South African women would bear the larger burdens of pricing of costs for the drinking water services for their families.

An important challenge is to develop sustainable forms of cross-subsidisation. The Durban Metropolitan Council is pioneering this approach. The town is subdivided into four neighbourhoods, encompassing both poor and non-poor water users. Everybody, whether rich or poor, receives the first 25 litres per person free of charge. This cost is paid for by cross-subsidisation from higher levels of water use and the sliding tariff scale. This approach, coupled with other customer service improvements has also raised levels of payment for water, enabling the local authority to provide and maintain better levels of service.

Productive water use in agriculture

Withdrawal of state support and imposing even partial cost-recovery in irrigated agriculture, whether farmers are poor or not, has proven to be very negative for poor small-holders in South Africa. While impacts for better-off farmers were minimal if not positive, this policy aggravated poverty.

The introduction of cost-recovery has been quite smooth for the white, large-scale farmers, who occupy 95 percent of the irrigated land. In the past, these large-scale white farmers benefited from substantive state subsidies for capital investments and agricultural services. Farmers also had a strong voice in the design and operation of the scheme. While for a long time scheme operation and maintenance was subsidised, this started to be phased out in the mid-1990s. This was a well-prepared and transparent five-year process, in which farmers accepted the increases in their input costs. Further, in South Africa it is feasible to leave new capital investments to large-scale farmers because the private equipment that is now available on the shelves, such as pumps or high-tech sprinkler and drip irrigation systems, fits the needs of large-scale farming. Moreover, banks continue to provide agricultural loans to large farmers as they did in the past.

In contrast, black small-holders, who occupy the other five percent of irrigated land, suffered seriously from the general agricultural liberalisation policies of the 1990s, which included only partial cost-recovery for irrigation. If on top of this full cost-recovery at a par with the large-scale farmers is imposed, the effects are bound to be even worse.

Most small-holder irrigation schemes in the former homelands, and many other African countries as well, were designed and constructed for centralised state-

management and uniform cropping patterns, typically maize and wheat. The state used to deliver highly subsidised services for ploughing, credit and input provision, irrigation, and marketing. Farmers, although bearing the risks, were often no more than labourers on their own one- to two-hectare plots. The withdrawal of most subsidies and services such as electricity payment, ploughing, inputs, and credit services, and mediation in marketing for the state-managed smallholder schemes in the late 1990s came very abruptly, without guidance and training for gradual take-over. The question was also not addressed as to whether farmers' management of these schemes designed for highly subsidised, centralised state management is feasible at all. The impact of this partial abandonment of schemes has been extremely negative. Farmers' own market linkages are still weak, the costs for water in these inefficient schemes are relatively high, and inputs and credits are still lacking, so net profits from irrigated farming dramatically declined. Many poor farmers gave up irrigated farming and returned to rainfed agriculture. Schemes are increasingly in a dilapidated state. This effect is not only reported for South Africa's small-holder schemes in the former homelands, but is also observed in other irrigation schemes in sub-Saharan Africa (Shah et al. 2000).

Under these conditions, further withdrawal of the limited remaining subsidies for water bailiffs and for maintenance costs, let alone imposing charges for water resources management for national and basin-level management, will further diminish net gains or push more poor people out of the business of irrigated agriculture. As long as the "value per drop" is sub-optimal because input provision and marketing channels are lacking, concerted efforts with other agencies are needed to enhance the profitability of smallholder irrigated farming (Shah et al 2000). This should be a precondition for any further implementation of recovery of even operational costs.

Besides the state-managed smallholder schemes, the South African government and civic society also financed and constructed an unknown number of smaller community gardens, and continue to do so. These smaller schemes, designed for self-management, are generally easier to operate and manage by farmers themselves, although they remain dependent on external support for major rehabilitation or replacement of infrastructure. But in these schemes as well, lack of markets is the most general complaint. Although the output per unit of land or per unit of water on, for example, intensively cultivated micro-plots of poor women is considerably higher than on large-scale cereal farms, the real profits that can be realised are still relatively low as a result of lack of access to markets. So for these schemes as well, stopping external support for major rehabilitation and replacement would mean the collapse of the scheme as long as the net profits are not sufficiently high for farmers to provide for such costs. Bringing poor farmers in upward ratchets of profitable farming is equally important for them.

In answer to these realities, the Department of Water Affairs and Forestry is now actively collaborating with other government and non-government agencies to address this key issue of the profitability of small-holder irrigated farming, and the issue of rural loan facilities. Moreover, subsidies for new scheme construction and for the upgrading of formerly state-supported schemes are made available, although the information about these subsidies is still not known widely enough. In the future, water charges may be minimised by introducing sliding tariff scales in irrigated

agriculture as well. In the absence of measuring devices for volumetric charging, the same purpose can be served by levying lower or no water charges for users of small-scale technologies, for example treadle pumps, and users of small plots of, say, less than five hectares.

Last but not least, pricing policies that leave all responsibility for future capital investment to the user would certainly further widen the existing gaps in adoption and ownership of equipment. As for domestic water supply, the lack of subsidised infrastructure development targeted at the poor in the past has caused highly skewed access to irrigation assets now. Moreover, technologies appropriate for smallholders are simply not available on the shelves. Therefore, DWAF and other agencies started to promote irrigation technologies that are appropriate and affordable for smallholders, such as treadle pumps and bucket drip irrigation systems, or water harvesting techniques. More attention is also paid to the credit facilities that are indispensable for financing these technologies. Although private markets are expected to be crucial for the manufacturing and dissemination of these technologies, external support to catalyse these developments is needed.

Conclusion

The most tangible but analytically flawed implication of the statement that “water is an economic good,” pricing of the capital and operational costs of infrastructure, has been implemented as a blanket policy and proven to have considerable cost to society in that water deprivation is aggravated and inequities are amplified. The challenge is to ensure that at least part of the funds that the government gains by charging the non-poor and large water consumers, and introducing sliding tariffs and cross-subsidisation are used to combat water deprivation and redress inequities. This can be achieved, for example, by ensuring better access to new infrastructure by poor people and promoting the design, testing and dissemination of appropriate low-cost technologies and water service provision, and financing facilities. Last but not least, for the case of irrigation, more value per drop for the poor is to be recognised as the precondition for any recovery of a small, reasonable part of considerable profits. Co-ordination and synergy between government agencies and between the government, the private sector and NGOs are indispensable.

Pricing as a tool for water conservation and demand management is not about poor people having to give up the use of water, but saving water where it can be saved without major implications for the beneficial use. Demand measures are to address the larger farmers and the larger consumers—the “big fish” in terms of water use, wasting and polluting.

4. Water allocation to poor women and men: legal tools

Formal water law in South Africa

Whereas economic tools steer water allocation indirectly, legal tools do so in a direct way. Under growing competition for scarce water, legal tools for water allocation in the new water management paradigm ensure that poor people's current water use

is protected and that poor new entrants can still access water as new entrants and satisfy their unmet basic water needs. Pro-poor water legislation not only implies that there should be a formal legal framework in which poor people's water needs have priority, but also that the law is implemented and enforced. The state, as custodian of the nation's water resources and legislator, has an important role to play, but collaboration and integration across governmental and non-governmental agencies and local social, political, and legal arrangements are vital as well.

In South Africa, the Water Services Act (1997) and the National Water Act (1998) provide various legal tools that are potentially effective, and possibly the most progressive in the world, to eradicate water deprivation under growing water scarcity. These tools are the following. As already mentioned, the Reserve sets aside a minimum amount of water, currently set at 25 litres per capita per day, for basic human needs. The Reserve also includes an ecological element. After allocating the Reserve and water required to meet international obligations, the government authorises water use in four ways. Firstly, all users are, in any case and without registration or payment, authorised to take water for, among other things, "reasonable domestic use, watering gardens and stock watering," but not for commercial purposes, as stipulated in Schedule 1 of the Act. This component of the Act benefits all, including poor people.

Secondly, the legislation authorises the continuation of "existing lawful use" (and thus the inequities in that use). New water uses are authorised by the government through, thirdly, general authorisations or, fourthly, licences. General authorisations concern relatively small uses in situations without current or expected water stress. They apply to a certain area, a particular water resource, a particular category of users, etc. As indicated in the General Authorisation of October 1999, farmers in areas without water stress are authorised to irrigate up to 25 hectares, at 6000 cubic meters per hectare per annum. This situation is applicable to a wide range of formerly disadvantaged farmers. The general authorisation of October 1999 also indicates the water-stressed areas for which the general authorisation does not apply. Evidently, allocation is most critical in these water-stressed areas.

For all new water uses beyond general authorisations, licences are needed. Licences may be issued for a maximum of 40 years. The terms and conditions of a licence are regularly reviewed. Should an amendment of a licence condition severely prejudice the economic viability of an undertaking, the licensee may claim compensation. Licences may be surrendered in order to facilitate the application for a licence for that water allocation by another user and, thus, represent a monetary value. While the issuing of a licence authorises the person or institution to use water, it does not guarantee availability of water.

In the future, the government will call for compulsory licensing of water users in water-stressed areas where there are, for example, problems experienced or expected from over-utilisation and competing water uses. Such calls for compulsory licensing by the Minister will apply to all water users, including those authorised under the continuation of "existing lawful use" component of the Act and those operating under a general authorisation. On the basis of all applications for licences, the responsible authority proposes an allocation schedule. In this, among others,

the authority has to consider how to "allocate to each of the applicants to whom licences ought to be issued in order to redress the results of past racial and gender discrimination in accordance with the constitutional mandate for water reform" (National Water Act, Part 8, Section 45). After further rounds of public comments, a final allocation schedule is compiled. Such compulsory licensing and reallocation, then, is the legal tool par excellence that can be used to allocate (but not guarantee) water to the poor that was claimed by the non-poor before.

DWAF has started a massive campaign to register current water uses that either will have to be licensed or that are generally authorised but still substantial and/or for which the payment of fees is required. An example of the latter is irrigation use above 50 cubic meters surface water or 10 cubic meters ground water per day. DWAF has invited such water users, including farmers, industry, local authorities, a Water Board or any other recognised Water Services Provider or Water Users' Association, to fill a registration form on their current water use (Department of Water Affairs and Forestry, 12 November 1999).

In the registration, the estimation of quantities of water used lies with the user but can be checked by the water authority. For the moment, the state has limited measuring capacity to prove deviations from the uses as estimated by the user. In the case of agriculture, this use is considered to be a function of the local crop water requirements as calculated in the SAPWAT model, and efficiencies and land size; return flows are not taken into account.

Registration will provide crucial information for future water management. It may reveal whether water that is claimed according to decades-old documents such as permits for mines, or water allocations for irrigation schemes, or even basin-transfers is, in reality, used or not.

Implementation in inequitable society

When the National Water Act was formulated and adopted in the mid-1990s, it critically challenged prevailing inequities in water use by introducing a powerful legal tool with a potential for change. The next hurdle is the implementation of the law, challenging the continuation of these inequities in reality. As "existing lawful use" has been authorised under the new law, the old racist and discriminatory practices that the Act precisely aims to overcome are still legal practice. Examples of the continuation of former discrimination, like using the argument that "water has already been allocated" are reported as the simple and effective negation by the powerful of black claimants of water (Woodhouse and Hassan 1999). The new options under the National Water Act are still largely unknown. Emerging farmers who want to "legalise" their current or intended water use do not know where to go. Persistent accusations of "illegal use" may render black people even hesitant to register current use.

The current campaign for registration of water use would be a first step towards recognising poor people's current water use (and charging fees). However, registration is easy for the organised users who were already registered in the past, like the former Irrigation Boards, industries and mines. But as yet, none of the smallholder schemes has been organised into an association that fulfils the criteria

to be registered as Water Users' Association. Many small schemes, like food gardens supported by a wide range of NGOs, churches, etc., or spontaneous initiatives to start irrigation, function almost unnoticed. If the poor already drop out at the first step to legalise water use, even the limited quantities of water that they use today, risk being allocated to others. Therefore, in provinces like Mpumalanga and the Northern Province, DWAF undertakes specific efforts to compile exhaustive lists of the formerly state- or NGO-supported schemes.

While poor people's basic drinking water rights are well protected in the Reserve, priority allocation of water for agricultural and other productive use by marginal and small farmers has not been stipulated in concrete and operational rules that can be implemented as yet. Such specification needs to go beyond household level, in order to ensure that both men's and women's entitlements to water are considered. The latter will be most relevant, for example, when membership of the future Water Users' Associations is established.

One possible way to translate the basic principle of redressing inequities into concrete pro-poor legislation is to adapt general authorisations and to authorise categorically the use of relatively small quantities of irrigation water by farmers who have limited access to land. For example, Schedule 1 water use is authorised by law without any registration nation-wide. Schedule 1 refers to reasonable personal use and also includes water use for home garden watering, but it explicitly mentions "not for commercial purposes." Even though gardens of the rich may exceed the sizes of vegetable plots in community gardens, the specification "not for commercial purposes" excludes poor and emerging smallholders who are definitely market-oriented and price-oriented, and certainly want to become so if markets were better. That specification could be cancelled.

A similar but more site-specific option would be to extend the existing General Authorisation for irrigation up to 25 hectares in areas without water stress, to those parts of water-stressed basins where water competition is still absent or low. As local variation is huge, many such sites could be identified. This would empower poor farmers especially for future competition. If competition over water is already strong, General Authorisations for specific sites may be most effective and enforceable where competing poor and better-off farmers are grouped together in separate upstream and downstream sites. However, if water competition is between neighbours at the micro-level, larger holders may find ways to become eligible as well, for example, by splitting up their holding administratively and claiming water as many small users. Moreover, poor people's new rights are probably difficult to enforce.

Whatever the most effective legal tool would be to endow the poor with water rights in a general way, this is only one side of the coin. Under competition for water, authorising some is only effective if others are "de-authorised." Voluntary water demand management measures among the better-off are important non-legal tools currently being designed by DWAF. However, in the end, the legal tool of compulsory licensing would be needed as it is binding. Under compulsory licensing, smallholders could get licences for optimal water use while allocations for the non-poor could be reduced.

Measurement and enforcement of water use according to the licences would be a prerequisite. However, the risk exists that the complex procedures for compulsory licensing could be recaptured by the literate, well-informed and organised water users. Therefore, simultaneous efforts are needed to devise enforcement mechanisms. A crucial component of enforcement is the empowerment of poor people themselves: informing them of their rights, building their negotiation capacity, and ensuring their effective inclusion in forums for negotiation over the formal allocation schedule and its later implementation. For the implementing water authority this requires not only a thorough understanding of and building upon current local realities and legal arrangements, but also strong facilitation skills and commitments to the ultimate purpose of the Act. Support from NGOs will be indispensable as well.

Legal and non-legal measures to take water away from current users will critically depend upon the amounts of water at stake. If larger farmers have to cede only some 10 percent of their former use, the job is obviously much easier; compensation procedures, as the National Water Act foresees if the profitability of an enterprise is seriously affected, can be avoided. Reportedly, a number of large farmers in South Africa may well see saving 10 percent of water use as a reasonable measure, if it were needed. A better understanding of the quantities at stake, and national and local sensitisation campaigns for voluntary water use restrictions by large users, are to accompany pro-poor legislation.

Another important direction in which pro-poor legislation will be further specified is through the National Water Resources Strategy and especially the Catchment Management Strategies, which provide a legally binding framework for water management. Catchment Management Strategies, which ultimately will be developed for each of South Africa's 19 Water Management Areas are specific and adapted to the widely varying local conditions and scarcity situation, and should specify water use and needs by poor women and men. They are formulated in close collaboration with water users in the basin through Catchment Management Agencies.

Conclusion

To conclude, if the aim of water management is to eradicate water deprivation, legal tools for priority water allocation to poor people are indispensable. The National Water Act of 1998 provides such tools in its over-arching principle that inequities from the past need to be redressed. However, this has to be translated into more concrete rules for non-domestic water uses as well, and, if there is competition, accompanied by concrete legal tools to take water smoothly away from current large users.

The main challenge for South Africa is the implementation of the new set of pro-poor legal tools and policies. At this stage, inequities could further widen due to the appropriation of the implementation process by the better-off, literate and powerful water users, who find their way to the government anyhow. So implementation of the law needs to be accompanied by massive information, organisation, and empowerment of the masses of poor, illiterate water users, still excluded from communication channels with the government even for simple registration, and hardly aware of their formal rights. Co-operation between the entire government,

DWAF, Catchment Management Agencies, NGOs, poor communities and other water users is clearly needed. Structurally new forms of water governance are warranted.

5. Water allocation to poor women and men: governance

Catchment Management Agencies in South Africa

Today, new forms of governance of water are high on the policy agenda. Key ingredients such as more users' participation, self-financing of water management and better consideration of the hydrological boundaries of basins in management, are all supposed to improve governance of water, besides reducing state expenditures. Such new governance rarely aims at poverty eradication. As the first experiences with public participation and river basin management in South Africa show, the initiative and authority of the government remain pivotal to include poor people structurally in new governance forms and facilitate the implementation of pro-poor economic and legal tools.

South Africa is a pioneer in creating new governance structures for water management by establishing Catchment Management Agencies (CMAs) for gradual delegation of water resource management from the Department of Water Affairs and Forestry to these new agencies. CMAs will function directly under the Minister and will be steered by a Governing Board and Committees that represent public interests. CMAs will be supported by a chief executive officer and technical staff. Initial tasks of the CMA include the development of the above-mentioned Catchment Management Strategy and advisory, monitoring and co-ordinating tasks. Collection of water charges is one of the early tasks to be taken over from DWAF. Once CMAs have proven to be mature and self-financing, responsibilities such as water allocation and licensing will also be handed over. The first two pilot projects to establish CMAs are in the water-stressed and polluted Nkomati and Olifants basins.

Already, since 1994, the South African government has actively promoted users' participation, for example during the formulation of the National Water Act. Regional offices of the DWAF also increasingly involved users. In the Nkomati and Olifants basin, for example, DWAF actively collaborated in public initiatives on issues like pollution by mines and water scarcity for downstream environmental needs. At that time and for those issues, the main actors were white, middle-class industrialists, environmentalists and consultants. In both basins, the establishment of the CMA and formulation of the formal proposal built upon these already ongoing public initiatives. The major challenge was to bring the hitherto excluded black communities on board, both in the composition of the relevant forums and the contents of the proposal.

In the Olifants basin, which covers 50,000 km² and has 3.4 million inhabitants, a two-pronged strategy was followed to consult the public and create inclusive forums for the formulation of the proposal. One process focussed on the final output of a written proposal for the CMA and was implemented by a predominantly white consultancy firm; this had to be finalised within a tight time frame of one year and

a half. The second process specifically targeted poor smallholders and was basically implemented by two black consultants. The two very different meanings of “public consultation” that emerged are illustrative for the governance issues at stake in the new water management paradigm.

Negotiating formal stakeholders’ agreement

In the first, general process that took place from mid-1999 till end-2000, two rounds of five public meetings were held covering all five proposed sub-catchments throughout the basin. In each of the rounds, about 700 people participated. These meetings were basically one-way information sessions on the general aims and structure of a CMA and proposed sub-catchments. The main language was English, with limited translation into the languages that the majority of participants mastered. Participants’ main input was voting on the name of the CMA.

Parallel to these public meetings, a Stakeholder Reference Group was created. Initially, this group was mainly composed of the white, mainly male participants in the earlier public consultation on pollution and environmental water needs. From the first round of public meetings volunteers were invited to participate in the Stakeholder Reference Group as well. This rendered the composition of the Stakeholder Reference Group more race-balanced (but still very male-dominated). In this Stakeholder Reference Group, the discussions on the CMA proposal were slightly more detailed, but still based on the ideas of the consultants, who also wrote all parts. From the consultants’ perspective, the process of public participation seemed mainly a matter of negotiating the formally required agreement and endorsement for the proposal by “the” stakeholders. The Stakeholder Reference Group was increasingly shaped and seen as “the stakeholders.” The draft proposal of August 2000 admits that during the establishment of this CMA, no attention was paid to gender and poverty issues.

Bottom-up empowerment for improved irrigated agriculture

The second process, which was targeted at poor small-holders, started on the initiative of DWAF half-way through the first process, when it became clear that the public consultations were not sufficiently addressing the problems of previously disadvantaged emerging farmers. The aim was to explore the establishment of a Smallholder Forum in the Olifants basin as a channel to speak out in the CMA (Khumbane et al. 2000). Three hundred and sixty five black people participated in nine workshops. They came from NGOs, women’s organisations, farmers’ initiatives, including those engaged in land reform, local government and tribal authorities. The discussion, in the local languages, focussed on people’s own assessments of key problems in water management for agriculture and livelihoods. It highlighted problems such as the need for land and land reform, markets, training, and better organisation in order to make productive use of water. Cases of competition over water that still reflected the old water laws were brought up as well. The participants designed structures for a Smallholder Forum that is now proposed to become part of the new CMA and will have representation in the CMA Governing Board. In the future, this forum may also serve the wider purpose of better organising emerging farmers

for profitable agriculture, for example by forging better links between traders and producers. In this second process public participation was clearly interpreted as poor farmers' empowerment and structural integration in the CMA forums.

Conclusion

These very first experiences with new forms of basin-based governance in South Africa highlight significant differences in "public participation" and its effectiveness to address water-related poverty issues. Information is an important first step, for which DWAF is now developing multi-media information strategies to reach people effectively nation-wide. But information alone is not enough if poor people's voices in actual water management are to be heard. DWAF keeps the responsibility that the new governance structures encompass forums of poor water users that are based on felt priority problems regarding water and land use and on self-organisation for change. Their concerns should be reflected and integrated in the CMA proposal and later policy documents such as the Catchment Management Strategies. As long as such forums do not exist, which tends to be typically the case for poor people, governments have a role in creating them. Such forums need integrated support not only from the water sector but also from other government agencies and NGOs.

6. Conclusions

There is ample evidence that mainstream economic, legal and governance tools to manage water aggravate poverty by further reducing poor people's beneficial use of water, especially in water scarce areas. Imposing equal treatment for all in unequal society aggravates poverty. Inequities can only be redressed if the new paradigm of water management is adopted that starts with recognising that water is most scarce for poor men and especially poor women. As a corollary, the primary aim is to develop water for both domestic and productive uses as the potentially powerful lever for poverty eradication and gender equity, even more so if effective collaboration is established within and outside the water sector. In order to realise that potential, new policies are needed. New policies and intervention tools are proposed.

1. Economic tools

- Water valuation attaches the highest value to a society that provides for all water-related basic needs of its people. The full range of productive and domestic benefits of water and the distribution of benefits within society are taken into consideration. Benefits accruing to poor men and women are specifically and primarily targeted. This requires the development of economic valuation tools that enable water managers to weigh up the real value of water to poor communities, against the "market value" accorded to water in the wealthier sectors of the communities.

- Infrastructure costs to fulfil basic consumptive needs are fully subsidised up to minimum levels of service. Subsidised programmes to promote the development of appropriate low-cost technologies for poor women and men are reinforced, not swept from the agenda under the pretext of “equal treatment,” ignoring the disproportionate benefits the non-poor received from huge subsidies in the recent past. Lessons learned on the smart use of subsidies for sustainable benefit are taken into consideration. Integrated support is provided to poor water users to increase the incomes from water-related production, in order to have sufficient profits from which capital and operational costs can be paid.

2. Legal tools

- In the nation’s water law, water is set aside to fulfil basic consumptive and productive needs of poor people first. General principles in the law to redress inequities are translated into operational, effective rules for water allocation to poor users first and foremost. Implementation and enforcement of pro-poor legislation is pursued.

3. Governance tools

- New systems of water governance at basin-level, like the Catchment Management Agencies in South Africa, play an important role in implementing the new water management paradigm. As CMAs and user participation are not intrinsically pro-poor, public consultation processes are explicitly and pro-actively shaped to organise the poor to ensure equal voices to all.

4. Integration

- Water professionals actively co-ordinate and integrate their actions with other government and non-government agencies to create the synergy needed to alleviate water-related poverty. Water ceases to be the exclusive mandate of water professionals. Instead, the overall mandate becomes poverty eradication to which each profession has a contribution to make.
- These changes require inter-departmental liaison-structures from national to local levels, as DWAF now implements. Innovative ways are developed in which a range of professionals use their expertise and develop new knowledge for the benefit of poor people.

CMAs, water managers, development activists and government officials all need to be equipped with the knowledge, tools and methodologies for using water to improve the lives of poor people and of poor women in particular. The continual achievement of these aims also requires the on-going monitoring of the impact of water management decisions on the poorest of the poor. This forms the key performance indicator of any department or body involved in the management of water.

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