Chapter 16

Gender, Rights, and the Politics of Productivity The Case of the Flag Boshielo Irrigation Scheme, South Africa

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1. Introduction

1.1 Rights in the politics of productivity

Can South Africa's world renowned constitutional socio-economic rights to access to sufficient water and food be realized by technology-driven capital-intensive economic growth, especially agricultural growth, or are there inevitable trade-offs? Is growth of the country's well-advanced, large-scale businesses a necessary condition to redress past inequities along race and gender lines and achieve substantive equality? Or would the promotion of sophisticated technologies for 'economically viable' productivity inevitably reinforce past and present wrongs: concentrating income, land and water among the few; widening the skills gap; and increasing the numbers of unemployed, especially women and youth? These questions are certainly not unique to South Africa, but the views at both ends of the spectrum are probably more at variance than elsewhere.

Answers to these questions are vital for gender equality. A persistent stereotype is that technology design, construction, operation and maintenance are male domains. Yet, the constitutional right to substantive equality prohibits any gender-based exclusion from control over technologies. Moreover, in the case of agricultural technologies for black agriculture, women historically dominated, and still dominate, cropping in South Africa. Thus, in principle, they are more interested in learning technologies that can render their labour more productive.

The first step in unravelling these questions is to analyse the role of rights regarding gender equality and non-discrimination in the political-economic processes, that shape the control over the infrastructure, and hence the production process and its benefits. We call these processes the 'politics of productivity'. This chapter focuses on control over agricultural and water technologies – and hence water – as part of the agricultural and rural production processes, which still constitute an important mainstay in poor people's livelihoods, especially in the former homelands. The majority of the poor, especially women, still live in former homelands or in rural areas of the former white Republic of South Africa, or in small towns.

Technologies are key to accessing water. Water technologies (or infrastructure, both terms are used interchangeably) such as wells, water harvesting structures, storage tanks or dams, canals, pipes, and pumps or soil moisture retention techniques are indispensable to bring water of the right quantity and quality at the right time to the site where people need it for themselves, their crops, cattle, fisheries and other uses. Technologies such as dikes, banks and drainage also protect against too much water. Infrastructure is costly: for many poor women and men, carrying buckets is still the only affordable technological solution available. People do not need land, but they need land with water, so riparian strips or land with abundant groundwater or wetlands are prime land for settlement and agriculture.

There are two types of infrastructure development with different politics of productivity. As this chapter will confirm, people usually combine the two when they meet their multiple needs from multiple sources. First, people can invest in and own water technologies for self-supply. Household wells are the most common example. Self-supply is often for multiple uses because multi-purpose infrastructure tends to be more cost-effective than single-use infrastructure. Second, people can be clients of a public or private service provider. Public water services are organized in administrative sub-sectors, each with a mandate for a single use. The irrigation sub-sector is primarily concerned about water for crops, while the Water, Sanitation and Health (WASH) sub-sector focuses on water for domestic uses and sanitation. As elaborated in Chapter 14, clients can hold water service providers accountable through payment or other means – the short route to accountability. Moreover, public service provision forms a part of political and administrative government systems, which finance and organize such provision; and they are or can be influ-

enced by citizens – the long route to accountability (World Bank, 2011).

The right to access to sufficient water and food is well articulated in the Constitution of South Africa.[1] Its operationalization into service delivery for domestic uses and sanitation has received considerable attention. However, water is also a necessary, if not the limiting, factor for a range of livelihood activities, especially own production for food security and income to realize the constitutional right to food. For the majority of the poor and for women, even more than for men, self-employment in cropping, horticulture, livestock, fisheries and water-dependent crafts and small-scale enterprise are vital components of their diversified livelihoods.

While white farmers occupy 1.3 million hectares of irrigated land, black smallholders in former homelands only have access to an estimated 50,000 hectares, just over 3% of public irrigation schemes. After the first democratic elections in 1994, many smallholder schemes partially collapsed. By 2010, it was estimated that 206 schemes were still operational, but that 90 schemes, a third of the total, had collapsed (Van Averbeke, 2011). Of the two-thirds which remained operational, on average, less than two-thirds of the farm land was cultivated (Denison and Manona, 2007). Water technology strongly influenced performance. Percentages of functionality were highest for gravity-fed canal schemes (81%), which have lowest operation costs and can be controlled best by farmers. By contrast, only 70% of pumped surface irrigation schemes; 65% for overhead irrigation; and 56% of the micro-irrigation schemes were still operational. The most common reason for collapse given was poor management.

The continued decline of agriculture in former homelands includes a century of the erosion of black agriculture in order to create a cheap urban labour force. Recent studies in the Eastern Cape show that only 10% of rural fields are ploughed annually. At present, crop production mostly occurs in home gardens. Farming today mainly serves as an additional source of food (Van Averbeke et al., 2011). Increased competition in retail markets reinforces this process. A national food production and distribution system, using the produce of the large-scale farmers, has been established; and it reliably provides food almost everywhere in the country. Four large supermarket chains retail about 60% of all food. The poor are increasingly passive consumers of the produce of white large-scale farmers (Van Averbeke et al., 2011). The country's massive social grants programmes of USD12 billion [2] for 15 million South Africans serve hu-

1 Constitution of South Africa Act (no. 108), Section 27 (1b).

2 Throughout the chapter a conversion rate is applied of USD 1= ZAR10.

manitarian goals but also boost a consumer market.

Within this context, we seek to unravel the gender aspects of the politics of productivity and the role, if any, of the new constitutional rights to access to sufficient water and food, substantive equality, and redress of inequities from the past. For this purpose, we undertake a historical analysis of the era before 1994 and of the continuities and discontinuities afterwards.

1.2 Research design: the case of the Flag Boshielo irrigation scheme

The case study for this analysis is the Flag Boshielo Irrigation Scheme in Limpopo Province. This scheme is some 300 km north-east of Pretoria. The river and its large dam constructed in 1987 provide year-round water to the left and right bank. The potential command area is well over 2,000 hectares. The wider region is also rich in minerals. This case study focuses, in particular, on the row of the 12 black smallholder sub-schemes (or 'farms') on the right bank, and one farm, Elandskraal, on the left bank (see map overleaf).

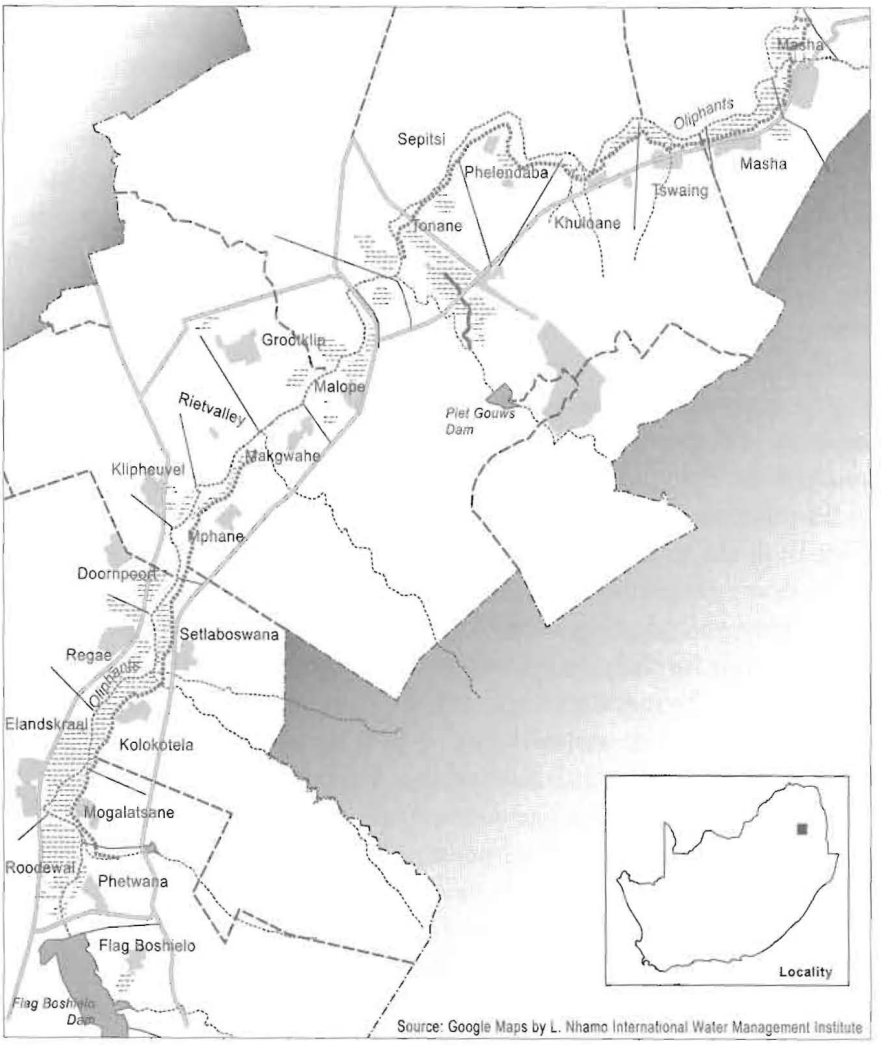
This chapter is based on a literature review, interviews with key informants, regular field observations and topical studies since 1999. It is structured according to the respective periods, which happen to coincide with changes in the name of the scheme, as follows.

1.3 Chapter structure

In Section 2, we discuss the pre-1994 history of settlement on the riparian strips of the Olifants River and subsequent irrigation development of the so-called Olifants-Sekhukhune irrigation scheme. This will highlight the intrinsic political, elite, and male-dominated nature of settlement policies, marginalizing women as 'housewives'; and the increasingly centralized irrigation infrastructure, managed by a subsidized white agri-business. This conjunction seamlessly served the goals of the apartheid régime, or 'Pretoria'. With the construction of the Arabie dam in 1987, the name of the irrigation scheme changed to the Arabie scheme.

Section 3 analyses the collapse of the Arabie scheme after 1994, primarily as a result of the dismantling of the political structures, which used to manage the scheme, when the new democratically elected government came to power. Instead of operationalizing any new constitutional rights, neo-liberal notions of 'standing on one's own feet' were used to legitimize this collapse.

Section 4 traces wide-ranging spontaneous responses to this collapse



WATER RESOURCES

POLITICAL:

OLIFANTS-SEKHUKHUNE (ARABIE) IRRIGATION SCHEME

KEY

Farm Boundary

Ward Boundary

Canal

Road

River, Dam

Cropland

Settlement

by women (as the majority of irrigators), other inhabitants, government officials, private consultants and the agro-business. This included three, small-scale, joint ventures between chiefs or plot holders and private large-scale farmers in charge of all cultivation on a lease or share-cropping basis. However, government's response from 2001-04 focused on the design and pilot-testing of a large national programme on participatory Revitalization of Smallholder Irrigation Systems (RESIS). The sudden decision of newly appointed senior government staff favoured blanket upscaling and the option of joint ventures between plot holders, strategic partners and government – forming part of the RESIS Recharge programme from 2005. They allocated lucrative tenders to private manufacturers of new and even more centralized irrigation equipment. This subsidization of the agro-business was justified with a strong discourse about modern technology and the economic viability of commercial approaches. In this period, the name of the dam and irrigation scheme changed to Flag Boshielo, an anti-apartheid activist.

Section 5 traces the implementation. Plot holders had to organize as a co-operative and give up their land and livelihood options and had to wait passively for their share in the profits, entirely generated by the strategic partner. Younger men resisted the complete lack of transparency and demanded more control, invoking their democratic rights, especially when the strategic partner claimed that losses had been made. As a result most joint ventures broke down. At the same time, elder women expanded informal irrigation in homesteads, from canals, river or wetland. Men also engaged in fisheries to meet basic livelihood needs. The chapter ends with recommendations on how to ensure especially women's control over water technology through locally-driven informed decision-making about the full range of water technical options and other factors needed to turn water use into health and wealth.

2. The Pre-1994 Colonial Era: The Olifants/Sekhukhune Scheme

2.1 Appropriation and settlement of prime land

Up to the mid-1800s, the prime riparian land along the Olifants River was occupied by the Pedi, the ethnic group living in this area of South Africa. It is very likely that they also irrigated. This changed with the arrival of the Afrikaner Boers settlers. They had left the Cape in search of more land and for access to harbours for trade, and were followed by the British. As elsewhere in the colony, the settlers declared large portions of

land under the British title deed system as their own, initially, mainly for speculation purposes (Lahiff, 1999). This 'lawful' encroachment was enforced by the British imperial army, in particular by defeating paramount Chief Sekhukhune in 1879 (Delius, 1984).

Surveyors carved out 14 blocks of land of between 50 and 250 hectares (called 'farms'), and individuals with both Afrikaner and English names obtained title deeds from 1871-73. Through sale, inheritance, and bankruptcy all farms changed hands at least once and some as often as five times. In 12 out of 14 farms, the farms were transferred to mineral speculation companies, who separated out the mineral rights, which they retained for themselves. The surface rights were further transferred. By the 1930s, all land (minus the mineral rights) was in private hands. The Pedi inhabitants of the area were probably subjugated as tenants or farm workers (Lahiff, 1999).

The title deeds also mention water levies for irrigation activity paid to the Middleburg Irrigation Board. The latter was one of the first white Irrigation Boards to be established. By declaring that this part of the Olifants River had to be regulated by the 1926 Water Court 'normal flow apportionment', the white settlers also 'lawfully' exerted their self-declared rights to the passing waters, dispossessing the Pedi from their prior water rights in the process (Lahiff, 1999). A river abstraction weir, abstraction pump house and earth canals were constructed in 1933.

In 1936, the Native Trust and Land Act[3] was passed. This made provision for the purchase of land in order to extend the so-called Native Reserves. The South African Native (later, Development) Trust bought many of the farms between 1938 and 1963. Chapter 29 in the Tomlinson Report reported vibrant irrigation by black people. Some had taken up irrigation on their own initiative and explicitly requested further irrigation support. The north-eastern regions of the Transvaal (currently Limpopo and Mpumalanga provinces) had the majority of the 122 irrigation schemes in the entire Union. Within this area, the Olifants River was particular important: 36 farms lay along it. The Tomlinson Report also mentioned how Pedi farmers in the nearby Nebo district had voluntarily contributed labour to construct 60 earthen dams in collaboration with the agricultural section of the Native Department, and 11,300 bags of wheat were produced (Houghton, 1956).

However, resettlement of black people on the purchased Trust Land along the Olifants River seemed less smooth. The Tomlinson report not-

3 Native Trust and Land Act, 1936 (Act No. 18 of 1936).

ed that, initially, 'the local population was very unwilling to take up irrigation'. However, by 1952 '472 plots had been allocated'. Other farms were purchased later. An annual 'maintenance rent' of £1.10 was charged (Houghton, 1956). Each household obtained a plot of usually 1.28 ha (1.5 morgan) plus a house with the same number as the plot in the new settlements. After 1969, all Pedi plots were held on the basis of a Permission to Occupy (PTO) according to the Bantu Areas Land Regulations (Proclamation R188 of 1969).[4] This drew its legal authority from the 1936 Native Trust and Land Act (Lahiff, 1999).

After 1948, the apartheid regime promulgated the Bantu Authorities Act of 1951,[5] the Promotion of Bantu Self-Government Act of 1959,[6] and Lebowa's declaration of internal self-government in 1972. The latter consolidated the appointment of a Lebowa government of chiefs reporting to, and implementing orders and investments by 'Pretoria'. The settlement and irrigation development in the Olifants scheme served up to seven goals in line with these male-dominated politics, from the top down:

- consolidating the territorial segregation with the above-mentioned purchase of Trust Land along a stretch of the river, which then became the boundary between Lebowa and white South Africa;
- pacifying forcefully removed chiefs and their followers by 'compensating' them with irrigated land;
- favouring allied chiefs to break resistance of, especially, Chief Sekhukhune and his followers – a stronghold of the emerging African National Congress;
- pacifying men by enabling them to have more power over their wives;
- pacifying all settlers in the scheme through food security (by the late 1980s, only 30% of the food consumed in the homelands was produced internally – the large majority of black people already depended on the purchase of food produced by white farmers);
- providing employment to white irrigation engineers and managers;

4 Bantu Areas Land Regulations (Proclamation R188 of 1969).

5 Bantu Authorities Act, 1951 (Act No. 68 of 1951).

6 The Promotion of Bantu Self-government Act, 1959 (Act No. 46 of 1959).

- and, in the course of the years, ensuring full white control over mechanization, including the vital means of production i.e. irrigation infrastructure.

There has never been any ambition to initiate 'economically viable' irrigation.

The settlement processes on the farms on the right bank illustrate these goals, as we will see, from upstream to downstream. The allocation of the two most upstream farms, Hindoestan (later Phetwane) and Coetzeesdraai (later Mogalatsane), were allocated to Frank Sikoane Matlala Maseremule. This chief with his followers from the Ba-Kone tribe was first removed from Pietersburg, and settled in and around Jane Furse (in Sekhukhune land). He had no strong bonds with Chief Sekhukhune and was one of the first chiefs to accept Pretoria's offer of a position in Pretoria's newly declared Lebowa homeland government. His son Mokgome M. Matlala became minister in the department of home affairs, instilling a strong tribal-based authority, which continues today. These chiefs allocated the plots of the two farms in perpetuity. After 1994, a land claim for this farm was lodged by a community that resided in Leeuwfontein, near Marble Hall. Their grandparents were called 'Petwane'. According to the claim, they had lost this land in 1958 for 'reasons of ethnicity' to the people of Matlala (Lahiff, 1999; Claassens, 2001; Tapela, 2009).

In 1962, the farm Krokodilheuvel (later Kolekotela) was occupied by members of the Mampana community. They had previously lived on white farms and scattered in Sekhukhune, but were brought together on this farm. Chief Mampana was less powerful than M.M. Matlala (Lahiff, 1999).

The nine farms from the next downstream farm Struisvogelkoppie (later Setlaboswana) up to Haakdoringsdraai (Tswaing)[7] were followers of Chief Masemola, who had always resided in the area of the scheme under Paramount Chief Sekhukhune. Families had been scattered on various white farms, but eventually they were consolidated. The central area, Veeplaas ('place of cattle') only received irrigation infrastructure in 1983.

The most troubling relocation was that of Chief Masha and his followers, who were settled on the next downstream farms, Strydkraal and Mooiplaas. In the 1950s, they were forcefully removed from Kalkfontein,

7 The respective Afrikaner (and current) names are: Gaataan (Mphane), De Paarl (Makgwabe), Veeplaas (Tonane), Wonderboom (Phelendaba), Vlakplaas (Khuloane) and Haakdoorndraai (Tswaing).

near Lydenburgh in current Mpumalanga. Pretoria gave Chief Masha and some of his followers these farms as some economic and moral compensation. Chief Masha obtained a relatively important position in the Lebowa government. He interacted actively with the Lebowa Department of Agriculture and white engineering firms, which gave him the reputation of an entrepreneurial and progressive chief. In 1987 a centre pivot was given to 'his community'. However, as a community member told us, when it appeared difficult for 'the community' to manage it, Chief Masha took the management over. He, in his turn, leased the operation out to the first strategic partner in the area, a white farmer (Farmer B.) from Marble Hall, the nearest white town approximately 60km away. His contract was to last until 2007. Other community members did not like Farmer B. 'He was shooting at our animals even if they were far [away], and without warning'.

However, the Nchabeleng and Ga-Nkoane communities of Apel, further downstream, lived in the same area and already cultivated the farm of Mooiplaas. They felt that Chief Masha and his people were forced upon them without consultation, and that they deprived them of a part of their land through the irrigation scheme. This compounded an increasing political contest between Nchabeleng's anti-apartheid movement and Chief Masha. The struggle became violent and led to the abandonment of most of the Mooiplaas scheme.

Lastly, the most recent removals were by the people settling on the Trust farm, Elandskraal. This farm is on the left bank, opposite Mogalatsane (see map). These inhabitants were settled in the 1980s, after removal from Moutse in the former Kwa'Ndebele homeland (Tapela, 2009).

2.2 Centralizing water infrastructure and managerial control

As elsewhere in South Africa's homeland irrigation, the water infrastructure was mostly flood irrigation until the 1970s. Also triggered by floods in the 1950s, the apartheid government improved the water provision, e.g. by constructing the still existing concrete canals and the Makotswane, Lepellane, Nkadimene and Piet Gouws dam in the 1960s. The latter was also for domestic water for Chief Masemola's village. In the upstream farms, water was pumped out of the river, but in the middle, near Veeplaas, a weir was constructed in the Olifants River to feed a gravity canal that conveys water to the fields of the downstream farms until today.

After the 1956 Water Act,[8] the riparian stretches along the entire Oli-

8 Water Act 1956 (Act No. 54 of 1956).

fants River became Government Water Control Areas. New Irrigation Districts were formed to control water abstraction. The stretch upstream including both Chief Matlala's farms; and those on the left bank became part of the Olifants Irrigation District (proclaimed in 1968), while farms further downstream along the right bank of Olifants River and flowing through Lebowa became the Sekhukhuneland Irrigation District (proclaimed in 1969). Interestingly, in 1980, an agreement about the apportionment of water between the 'co-basin states' of the white Republic of South Africa and the entire self-governing Lebowa was arranged. Acknowledging the latter's 'rightful claim to the water' of the river that crossed their area, a proportion of precisely 52.65% of water during critical months was set. However, even though the allocation was shared, an addendum stated that because of water variability in large upstream Loskop Dam, 'the allocation to Lebowa and the other consumers downstream of the Loskop Dam also has to be determined from season to season' (DWA, 1991a).

Again in line with irrigation developments elsewhere in the country from 1980 onwards (Van Averbeke et al., 2011), Pretoria, development corporations and the white engineering firms in the homelands stepped up their efforts in another round of investments. They upgraded the schemes to more expensive, energy consuming, and more centralized technologies. These were 'excessively capital intensive, based on the most sophisticated modern technologies' (Laker, 2004). They reasoned, 'Since consultants always received a fee based on a percentage of the capital expenditure, it was to their advantage to plan the most capital expensive system. The South African government funded only capital expenditures and not running costs and it was thus easy to convince homeland governments to go for capital intensive projects, rather than those with higher running costs, e.g., labour intensive ones' (Laker, 2004). This started a trend in which 'design solutions' appear to be scaled-down versions of first world technology rather than solutions that would work well for smallholder farmers' (Machethe et al., 2004).

With great zeal and efficiency, technologies were developed in the Olifants scheme. Within just three years, i.e. by 1983, new equipment and electricity were installed. Pumping from the canals or river gave pressure to piped sprinklers (which were still easy for farmers to move around and control), and centre pivots (which required more centralized control). These upgrades included the central grazing area of the Masemola community, Veeplaas, in order to pacify Chief Sekhukhune. The Veeplaas

Farm became a sprinkler irrigation scheme with 28 plots of 2.5 ha (out of which five were allocated to women) and two plots of 10 ha (allocated to male relatives of Chief Masemola) (Lahiff, 1999). Thus, the total area on the right bank from upstream Hindustan (Phetwane) to downstream Mooiplaas became 1,873 ha. Conventional piped sprinkler covered 71% of the irrigated area, centre pivot 10% and flood irrigation 19% (Small and Stimie, 1999).

In 1987, the government of Lebowa finished a large new dam just upstream of Phetwane, called the Arabie dam.[9] Its purpose was to provide for domestic water supplies for communities downstream and for irrigation. The available surface water from the Arabie dam for irrigation was set at 2,767 ha. However, in the medium-term the provision of municipal water to the province's capital of Polokwane, 100 km away, was also considered; as well as water provision to mines further downstream in the Limpopo and Mpumalanga provinces and in the adjacent North-West Province (Department of Water Affairs, 1991b). Moreover, the dam allowed for better regulated downstream dry-season flows and flood mitigation, although severe floods still caused major damage to the irrigation schemes. An estimated 200 people have been displaced without compensation for this large dam inundating 1,288 ha. Some of them raised this issue and lodged a land claim in 2012 when plans for a nature conservation to attract tourists were discussed (Tapela, 2009).

2.3 State-subsidized outgrower arrangements

The centralized water technologies of pumps and sprinklers required more centralized management. This was provided either by commercial agencies contracted by government or by government itself. Between 1983 and 1988 the greater part of the scheme was managed by the Agriculture Management Services (AMS) on behalf of the Lebowa government; and the rest was managed by the Lebowa Department of Agriculture and Environmental Conservation itself. From 1989 to 1992 another company, the Lebowa Agricultural Corporation (LAC) took over from AMS. In 1996, with the consolidation of the nine new provinces, the greater part of the scheme came under the management of the Agricultural and Rural Development Corporation (ARDC). This was a merger of the various development corporations in the three former homelands in the north (Matlala and Shaker, 2003). ARDC, receiving USD7 million per

9 While some reports (e.g. DWA, 1991a) refer to this dam as the Mokgoma Matlala (M.M. Matlala) dam, others give that name to the Piet Gouws dam.

year from treasury, employed a staff of 1,200 and had a salary bill alone of USD2,2 million, cultivating and providing services for 120,000 ha of government land (Shah et al., 2002). Service costs were paid by government subsidies and by service charges to farmers.

In 1993, the ownership of the irrigated plots was transferred from the South Africa Native Trust to the Government of Lebowa, except for two schemes, which were bought by the Masemola Tribe, and two farms that stayed with the South African Development Trust (Lahiff, 1999).

In this centralized management, the white managers employed African staff. The Arabie Scheme had five extension workers. One of them recalled,'I was always there as the black man with the white man, to mediate and explain. For example, black cultivators were numbers. Sometimes people who had worked hard and had harvested well, got less income. I was then the one to check, so I found out that the numbers had been mixed up'.

The management dictated from the top-down: the crop to be sown (alternately wheat and maize, sometimes cotton, but hardly ever high-value vegetables, although farmers were quite interested (Maloa and Nkosi, 1993)); the dates of ploughing and other operations; the provision of paid mechanized ploughing services; the fertilizers and chemicals to be used; the day and hours when the sprinkler pipes had to be moved; the days for harvesting and central collection of the produce; and the payment days. The management insisted on collecting all produce and discouraged any local trade (though it still occurred). They brought the harvest to the Oos Transvaal Kooperasie – East Transvaal Co-operative, or Nord Transvaal Kooperasie – North Transvaal Co-operative, which calculated the income. The costs of the inputs and ploughing services were subtracted from the total income to calculate the net incomes to pay to the farmers. Indeed, farmers were not more than labourers on their own plots, bearing the risks of this high-input, expensive and high-risk form of farming (Shah et al., 2002). A farmer, confronted with this dependency on others and high costs on his bill, commenting on the AMS said,'Though we produced little before they came, we owed nobody' (Maloa and Nkosi, 1993).

2.4 Gender in irrigation

As mentioned above, in the course of the 1980s, technologies became 'scaled down versions of first world technologies' (Machethe et al., 2004) as part of divide-and-rule politics among men. However, well before

that, white norms about the gendered organization of farming were already being employed in a last attempt to pacify the Pedi men. Men were co-opted by giving them new powers over the labour of their female kin.

The Pedi agrarian economy was strongly gendered (Mönnich, 1967). By the 1960s, a few activities such as gathering were done by everybody. Warfare, hunting, cattle, sheep and goats (but not pigs and fowls) were a male domain. This included the herding, milking, slaughtering, and cleaning of milking utensils. It was often a taboo for women to engage in this domain. Men were also responsible for keeping cattle out of the crops, on distant grazing lands, for example. Women, on the other hand, were responsible for domestic chores, including fetching water and wood for domestic uses. Other water-dependent activities, such as brewing beer, cleaning and repairing huts and courtyards also fell to women. Men were responsible for building and thatching houses, while women were responsible for the floors, walls and decorations. Pottery was generally considered a female task. Gender patterns for reed work varied. Men did woodwork and worked in hides and leather. Women were also the cultivators, using the iron hoe. Women decided what crops to cultivate from sorghum, millet, pumpkins, watermelons, calabashes, beans, yams to various types of tobacco. While there was no taboo preventing men from participating in cultivation, they shared the responsibility for land clearance. Girls assisted their mothers, and both boys and girls assisted in keeping birds away from the crops. This was a burdensome task with sorghum and millet, but not needed for maize. The cultivation of vegetable gardens could be done by men or women or both. Rights over land lay with the husband's kin. The mother-in-law allocated land to women. The importance of the mother-in-law is illustrated in the soubriquet the 'moon which bursts', coinciding with October's spring time,'the strict mother-in-law', keeping her daughters-in-law occupied with agricultural activities from the ploughing season until the end of the harvest. The size of a farm depended primarily upon the capability to cultivate. Among the Pedi, this was two to six acres if cultivated with a hoe (Mönnich, 1967).

However, apartheid irrigation development ignored such gender relations. Instead, the rulers introduced the European notion of the nuclear family, solely engaged in farming, with the male household head as the natural and sole household member entitled to land, technologies, and other productive resources. The latter included the fruits of their wives' labour. Thus, the Tomlinson commission recommended a size of 1 or 1.5 morgen (1.28 ha) because,'Out of the various farming and settlement

systems, irrigated farming is undoubtedly the enterprise for which the Bantu has proven that they are able, under white management and leadership, to make an economic living out of full-time farming and to use the land economically for food production. Unlike rainfed agriculture, the man does not avoid activities here – the man and his whole family are active on the plots'. The Tomlinson Commission explained that a size of 1.5 morgen would allow a nuclear family to cultivate full-time. As studies from the Olifants River scheme had shown, a gross income of £110 could be derived from 1.5 morgen (1.28 ha). This was seen as enough income for a reasonable livelihood – according to white perceptions of Bantu standards. The Commission also gave strict instructions that all those who were allocated plots should give up other farming and work full-time on the irrigation plots. Plot holders were not allowed to leave their homes for more than 14 days without written permission of the (white) scheme manager. Also, no other families were allowed in the dwellings of the irrigating households without permission of the manager (Houghton, 1956). The promoters of these relative privileges for men were silent about the culling of men's livestock under the notorious earlier betterment programmes and the exploitation of black men in the white wage economy. Instead, these new income opportunities and relative privileges for men over their wives served another goal, as also echoed in magazines like *Bantu*. Commenting how native men often went for migrant labour, while women continued cultivation, they stated that irrigation was the best way to raise men's interest in irrigated cultivation, so that men would stop migrating (*Bantu*, 1970).

While these 1.28 ha plots were allocated to male heads of households, only smaller gardens of one sixteenth of the size of irrigation plots were to be given to 'widows' (Houghton, 1956). In reality, those 'widows' may well have included married women. Indeed, by 1994, the majority of irrigating cultivators in the Olifants River scheme and all other government-supported smallholder irrigation schemes in the Olifants basin were – and still are – women. Percentages vary from 70 to 90% or more (Van Koppen, 2002). In the Olifants irrigation scheme, as many as 20 to 40% of the official PTOs were in women's names by 1999, although the law stated that only men could obtain PTOs. This reflected a strong female role in cultivation and their land inheritance after the decease of their husbands. In Veeplaas the proportion of women is 40%. Chieftainess Masemola explained how conflicts can arise when men claim part of the harvest on the basis of land claims without having contributed their labour. Her

late father considered that unfair. Moreover, when women came to cash the cheques from the marketing co-operatives, it caused confusion when the cheques were in their husbands' names (Van Koppen and De Lange, 1999). Women were generally more productive than men; more so, if they held the plot in their names, as Kamara et al. (2002) found in the mid- and late 1990s, during the last cropping seasons before or just after the withdrawal of state subsidies.

2.5 Food security and local water development

By the early 1990s, women (and men) plot-holders on the above-mentioned irrigated farms on the Olifants River irrigation scheme were generally content with food for household consumption, especially maize, and for income from surplus sales of wheat or cotton. Appreciating these livelihood benefits, they organized effectively for communal works such as canal maintenance or moving sprinkler pipes when the bell was rung. But these satisfied subjects of satisfied chiefs were a tiny minority among the inhabitants of Lebowa.

Although the irrigation canals were designed for irrigation only, they served other purposes as well, including access by the growing number of inhabitants without plots. People also used the canal water for domestic purposes, livestock, fisheries, etc. The few government boreholes installed in some residential areas were insufficient. Not only canals, but the dams and the river were also indispensable water sources. Homestead wells and boreholes also served livestock and gardening. Many irrigated gardens were set up, both formally by government and various NGOs, and informally by women's groups and individuals. The small communal garden plots were mainly or exclusively in women's names. For example, the gardens set up by the Rural Women's Association in Apel served some 300 women on 30 hectares (Pardeller et al., 1999). With the collapse of the irrigation activities and even under its revitalization, these informal water uses rapidly increased, as discussed in the next sections.

3. The 1990s: Collapse of Arabie Scheme and Responses

3.1 Collapse

Already, from 1989 onwards, government's investments, which financed the white-dominated irrigation management agencies, began to decline by as much as 40% (Maloa and Nkosi, 1993). As highlighted in 1993, the reduced funding exposed the major dependency of

the smallholders on state support and vice versa, for example in weak repayment of credits. The (white) publicly funded agencies started being seen as expensive and inefficient (Maloa and Nkosi, 1993). Once the new ANC government had dismantled the same apartheid structures, the political will to continue funding these agencies was even less. Indeed, the government decided to drastically reduce funding of the ARDC, from USD7 to USD2 million (Matlala and Shaker, 2003). There was no reference whatsoever to constitutional rights of the farmers ultimately affected.

Hence, from the winter wheat crop of 1996 onwards, farmers had to take over all production costs, starting with the payment of electricity bills. However, capital for the purchase of inputs and the organization of farmers into collectives to arrange such collective action from scratch were lacking. The Transitional Local Councils had barely started to create the entirely new local government structures, and were still awaiting the demarcation of local government boundaries by 2000.[10] Some traditional leaders filled the void to some extent, but with considerably less support from the ANC government than from the apartheid government. A downward spiral kicked in. Pumps broke down and were not repaired. Canals were no longer cleared. Lack of income from one crop prohibited the purchase of the costly inputs for the next crop. By 1999, only 30% of the scheme was cultivated (Small and Stimie, 1999). The bad news on the ground was accompanied by a strong recourse to a neo-liberal discourse of 'standing on one's own feet' and own payment for all inputs, which would soon include water as well. A farmer commented,'It is okay for us to stand on our own feet, but this has been too sudden.'

Various responses emerged: plot holders, especially women, continued with irrigated cultivation; other inhabitants expanded their use of informal irrigation; agri-business dealt with groups of farmers and also arranged private deals with tribal authorities. Government first contested such deals, but later facilitated the same. The most marginalized, especially older women plot holders, lost out.

10 The boundaries of the new municipalities largely follow the boundaries of the chieftaincies. Elandskraal and Phetwane are in Greater Marble Hall/ Elias Motsoaledi municipality; Mogalatsane Farm is in Ephraim Mogale; the farms from Kolekotela to Tswaing in Makhudu Thamaga, and Strydkraal and Mooiplaas in Fetakgomo local municipality. They all fall within the Greater Sekhukhune District Municipality.

3.2 Responses by women plot holders and inhabitants

Where possible, plot holders tried hard to take irrigated cultivation forward on their own. This happened mainly with gravity-fed irrigation. On the Pelendaba (Wonderboom) Farm, for example, small groups or individual farmers, mainly women but often led by men, tried their best to establish direct relationships with the Land Bank for loans (but they were too small to be considered) and direct contacts with the co-operatives for sale (which failed).

Along the canals, especially women started or continued with their informal gardens, also by newly constructing own off-takes from the canals, whether this was seen as illegal or not. Saving groups also emerged, particularly among food plot holders with small farms of 0.12 ha (Machethe et al., 2004). In Strydkraal, Chief Masha and Farmer B. continued operating the centre pivot, cultivating cotton.

Some younger men tried to organize a union, defending the resource rights of their illiterate mothers and fathers. However, they were ignored. The National African Farmers' Union failed to engage. There was some discussion about the option of transferring ownership of both land and irrigation equipment from government to the farmers, as proposed by, for example, the two larger farmers in the Veeplaas Farm. Community Property Associations might have been formed to that end: this was the institutional model that had been proposed for land reform elsewhere in South Africa (Van Koppen and De Lange, 1999). These Associations could have been aligned to the formation of multi-tier Water User Associations. However, this option was not further pursued, partly because of the risk that chiefs would entirely dominate the process.

3.3 Agri-business: cotton outgrower schemes

On two farms, agri-business attempted cotton outgrower arrangements with all plot holders on the Veeplaas and in Phetwane farms. Both efforts failed. Highly mechanized cotton cultivation is high-risk: inputs were costly, so profitability mainly depends on very high production. Any hitch in the production process can lead to net losses.

The first initiative was undertaken by LONRHO in Veeplaas in 1998 and 1999. However, logistic delays in the provision of inputs and fertilizers rendered the production for most farmers, except the most diligent ones, too low for any net benefits. As risks bearers, farmers wanted to return to the cultivation of maize for their food security. LONRHO left, also because of low profitability and internal strategic changes.

While the central buildings in Veeplaas were taken over from the ARDC by members of the Masemola chieftaincy, the land and the irrigation equipment remained idle. Farmer B. stepped into that void. He asked Chief Masemola to lease the land to him. Without much transparency within the tribal council, she agreed. Plot holders are said to receive USD20-30 per plot as annual rent, a very low value for this prime land and free infrastructure. Farmer B. has been cultivating various crops ever since, and also using genetically modified seeds of Monsanto. The Department of Agriculture strongly protested such private arrangements employing State land and equipment, and sued Farmer B., but no conclusion has yet been reached.

The second initiative was in Phetwane and supported by the Limpopo Department of Agriculture:[11] cotton growing with the Nordelike Sentrale Katoen/North Central Cotton (NSK). The Limpopo Department of Agriculture rehabilitated the scheme in 2002. Plot holders became outgrowers for NSK in 2003 and 2004, with a profit-sharing arrangement. However, as in Veeplaas, NSK was late in delivering fertilizers, so planting dates were late. Moreover, the dam providing water ran dry and wages were high. These factors contributed to severe losses for most, in spite of hard work; many had to use their pensions to pay labourers; and many had to sell their maize i.e. their food security buffer. Farmers were deeply disappointed by the outcome (Tapela, 2009).

3.4 Government: Revitalization of Smallholder Irrigation Schemes

The testing of outgrower arrangements with NSK was one of the pilot projects in the systematic effort by the Limpopo Department of Agriculture across the province to design a participatory strategy to re-establish irrigation (Shaker, 2005). From 1998 onwards, such projects were pilot-tested in three irrigation schemes, followed by a first and second phase of a Land Care project. It had extended to 28 irrigation schemes by 2004, including farms in the Flag Boshielo Scheme. Although the political context of South Africa was unique, some references were made to the global trend of the time, 'irrigation management transfer'. However, the name soon became 'Revitalization of Smallholder Irriga-

11 The initial name was Northern Province Department of Agriculture, Land and Environment. This changed to Limpopo Department of Agriculture, the name used in this chapter.

tion Schemes' (RESIS).[12]

RESIS envisaged spending a total amount of USD108,688,000 over five years, 2004-2010, i.e. USD18,114,000 per year. In this period, 126 schemes were to be revitalized, including the Flag Boshielo scheme, covering a total of about 19,730 ha and directly involving 12,432 farmers. The replacement value of the infrastructure was estimated at USD400 million and was 'mostly dilapidated, moribund and non-productive' (Shaker, 2005). RESIS aimed at socially uplifting the community, and re-building and developing profitable agribusiness through a 'comprehensive programme to structure, train and capacitate smallholder farmers to run their scheme profitably and sustainably' (DAFF, 2015). An integrated and participatory process-oriented approach was adopted, including extensive investments in human capital and upgrading infrastructure. RESIS envisaged responding flexibly to a wider range of community priorities, including homestead food production. It considered multiple uses of water, livestock and scheme interrelationships and dry land crop production (Denison and Manona, 2011).

RESIS paid less attention to land tenure issues and ownership of the infrastructure. Machethe et al. (2004) also commented that RESIS paid limited attention to the much needed reform of the input, mechanization, extension and marketing support structures. The same authors also stated that,'Access to information about appropriate technology remains a major problem'.

Late in 2004, however, the new leadership in the Limpopo Department of Agriculture radically abandoned this approach, changing to 'RESIS Recharge'. RESIS Recharge took full control of land and water technologies and took all production out of farmers' hands, while leaving farmers with substantive risks.

12 The Department of Agriculture also protected the well-defined water rights of the smallholders in the ever-growing competition over water. In this case, various mines, organized in the Lebalelo Water User Association, wanted to take water out of the Olifants river downstream of the irrigation farms, to pipe the water to mines. The WUA asked the Department of Agriculture and the Department of Water to lease the water rights of the smallholders for five years. The mines also committed to raise the Arabie dam by five meters at their expense by the year 2006.. In return for the five year lease, the mines committed to finance an irrigation canal directly from the dam to the fields downstream. The design and construction of the canal by consultants was so weak that the canal has never been used. None of the farmers was included in these negotiations.

3.5 Towards joint ventures in RESIS recharge

3.5.1 Elandskraal

RESIS Recharge built on another response: the Elandskraal Balima Irrigation Scheme Trust. Elandskraal, which lies on the left bank of the Olifants River opposite Mogalatsane (see map), is a Trust Land farm. From 2000 onwards, the national Department of Public Works in partnership with the Limpopo Department of Agriculture upgraded 150 hectares with centre pivots, in collaboration with the 'Elandskraal Community Production Centre' (Sigcau, 2002). President Mbeki visited the scheme in 2001. A total of 223 smallholders lease land from the Limpopo Department of Agriculture, and form the umbrella Elandskraal Balemi Irrigation Scheme Co-operative.

Already in 2001, some of the farmers had initiated a joint venture with a large-scale farmer, Arthur W. Creighton, trading as a private company AWC (Tapela, 2009). In 2005, 18 farmers with 5 to 10 ha plots organized as the Elandskraal Balemi Irrigation Scheme Trust (EBIS-Trust) on 150 hectares and signed a bilateral contract with this strategic partner (SP). In this contract, the strategic partner commits to use his skills for highly mechanized irrigated production and to use his access to capital, input suppliers and marketing channels for the entire cultivation and marketing process, deciding about the production process in consultation with the co-operative. The contract also commits him to build the commercial and technical capacity of the emerging farmers. In return, he gets 70% of the net income in the first year, 60% in the second year, and 50% in later years, leaving the remaining amount, or the risk of losses, with the co-operative. The contract is silent on how the left-overs of the harvest are allocated.

Farmers, on the other hand, agree to organize into a collective and manage all intra-group matters. They commit to consolidate their plots into centralized farms as required for the centralized centre pivots, and to vacate the land to the strategic partner. The contract also stipulates the obligation to provide any labour that is still needed in this capital-intensive and labour-saving mode of production. The duration of this contract between AWC and the Elandskraal Balima Irrigation Scheme Trust is ten years (Tapela, 2009).

3.5.2 The design of RESIS Recharge

Favouring this initiative, the new leadership of the Limpopo Department of Agriculture decided to upscale this approach. Instead of trying to evict

private large-scale farmers who lease land from traditional chiefs and use public water infrastructure, the department decided to collaborate. Thus, the people-oriented RESIS design was replaced by RESIS Recharge for many more schemes in Flag Boshielo and some other schemes outside Flag Boshielo, such as Makuleke in Vhembe District (Tapela, 2009). This rehabilitation (instead of a revitalization) approach became an engineering centred re-construction of dilapidated infrastructure, focusing on investments in bulk water supply and in-field irrigation infrastructure (Denison and Manona, 2007) and leaving the entire production process to the strategic partner – without an obligation for consultation with the community. Net profits were to be shared on a 50-50 basis. Government used its resource rights to land and water to enable this new mode of production. Land in irrigation schemes formally remains State land, so a private farmer remains dependent on government to access this. Moreover, irrigation equipment is land-bound. These combined resource rights remained a government niche. Indeed, as a government official explained, government's interventions for irrigated agriculture *start* with land tenure and soil quality issues and with irrigation infrastructure. All other aspects of irrigated agriculture are only later addressed and by others.

The new arrangements seemed to solve some problems of the pre-1994 setting (and of public irrigation schemes across the world). Substantive state subsidies are needed for management, also for agricultural management companies handling all forward and backward linkages and managing production (perhaps reducing incentives to optimize production and sale incomes). Rendering subsidized production more efficient is a world-wide challenge. In RESIS Recharge, the handling of forward and backward linkages and production was outsourced to one single large-scale farmer well equipped with labour-saving technologies. Such replacement of the earlier, inefficient, arrangements by a skilled and cost-effective partner, who is profit-oriented and favours cash crops (in this case potatoes) and who could finance inputs upfront, without a loan, may seem attractive to government. Moreover, *it shifts the production risks from government to strategic partners and smallholders*. In the past, state subsidies mitigated production risks for the companies and to a lesser extent to farmers. Farmers' risks were cushioned by government, for example through lenient credit arrangements. Under RESIS Recharge, the strategic partner bears risks but also gains from profits. However, plot holders are excluded from crop choice and any production so they are completely powerless and can only sit and wait as passive beneficiaries or

victims of others' actions. They were not only 'arm-chair farmers' (Tapela, 2009) or 'glorified labourers', but, in principle, *also risk bearers*.

The risks for the smallholders were high, as also consolidated in the standard contract of RESIS Recharge. By being obliged to hand over their land, they forfeited alternative livelihood opportunities with the land and water from the start of the construction phase. Construction, moreover, could take up to six years. Further, annually, they bore risks of crop failure and net income losses, shared with the strategic partner. However, as discussed below, fierce protests arose against precisely that risk, when co-operatives were suggested to put losses on the co-operative's account to be subtracted the following year. Moreover, the plot holders alone bore the longer term risks. The contract was short, just three years. This provided little incentive to the strategic partner to consider sustainability. There was no exit strategy, other than that the strategic partner would handover all shares to the co-operative or 'anyone appointed by the Limpopo Department of Agriculture'. The contract had no provision for depreciation and re-capitalization after the life cycle of infrastructure of some 10-15 years. Further, without contractual provisions for the management of conflicts, communities, being the least powerful, risk losing out. Last but not least, risks were made higher because the technology choice made by the Limpopo Department favoured overhead sprinklers, so-called floppies, a highly centralized and largely untested technology (Tapela, 2009). Plot holders' land became a field for experimentation.

All above risks were compounded by an essential new weakness in the RESIS Recharge contract compared to the bilateral agreement in Elandskraal between the strategic partner and smallholder co-operative (Tapela, 2009). In the RESIS Recharge contracts, the Limpopo Department of Agriculture included itself and in such a way that any accountability of the department *and* the strategic partner to the co-operative was taken away. In case of conflict, the strategic partner could always refer any complaints of the co-operative to the Limpopo Department of Agriculture. Yet, the department had no contractual accountability to the co-operative. In the contract, the co-operative's address was the department's address. Even though the contract mentions 'a board' of all three parties, the co-operative had still nowhere to go in case of conflict. The only commitment by the strategic partner vis-à-vis communities was that he should train them in the areas of finance, quality control, marketing, management, operational, technical and business operations. Significantly, this outline provides a role for business clerks but excludes agronomic

training which includes information about crop varieties or crop water requirements, and vesting own sustainable access to input and capital suppliers and output markets. Black farmers are still not supposed to become competitive producers.

Remarkably, the contract is also silent on the department's commitment to provide for irrigation infrastructure. In the problematic logic of government bureaucracy, the only accountability that the department assumed was to perform in the sense of spending money.[13] Generous funding of the suppliers of irrigation equipment became government's core business in RESIS Recharge. The department opted for an irrigation technology provided by a manufacturer in Nelspruit, who had just started promoting very expensive and entirely new overhead sprinkler technologies, called floppies. Floppies further strengthened centralized control of production. This comfortable monopoly position also implied that there was no need to tender among a range of competing irrigation equipment manufacturers, as would have been the case for the widespread centre pivots. The strategic partner was not initially keen to work with this experimental technology. Nevertheless, the free provision of land and centralized irrigation infrastructure remained sufficiently attractive for him to commit. After gaining experience with floppies, the strategic partner and the department chose to revert to centre pivots (in Strydkraal). By then Arthur W. Creighton (AWC) was 'one of the three persons in South Africa who knows how to operate a floppy system' (Sithole, 2011). The consultancy firm that had operated in the Flag Boshielo scheme during the apartheid era was commissioned to make the irrigation designs.

In the public messages of RESIS Recharge, this approach was glorified as a 'commercial' and 'business-like' approach which would, it was suggested, finally lead to 'economic viability' of self-financed profitable farming. Floppy systems were hailed as the symbol of South Africa's unique, home-grown sophisticated expertise on water-efficient and highly productive mechanized agricultural technology. Neo-liberal terminologies of efficiency and commercial enterprise in the new South Africa seemed to leave the apartheid history far behind, aligning with the country's policy emphasis on capital-intensive technology-driven economic growth. In this discourse, all trust was vested in philanthropic white farmers to build

13 An example of reporting on performance to parliament that entirely focuses on spending patterns, rather than outcomes, is: https://pmg.org.za/committee-meeting/8720/.

the capacity of 'unskilled' black farmers.

Above all, these publicity campaigns disguised the heavy state funding that not only benefited 'well-performing' officials but also the private irrigation business and, with land and capital costs of water infrastructure for free, the strategic partner. Lastly, in line with the broader discourses of the time, Black Economic Empowerment figured high in selling this message, while rendering underlying processes even more untransparent. The Limpopo Department of Agriculture's extension worker of Elandskraal started trading under the name of Temong, and soon became both the Black Economic Empowerment partner of AWC and the co-owner of the Nelspruit manufacturing company of floppy systems.[14] In this same period, the names of the dam and scheme changed to the 'Flag Boshielo' scheme, and the Afrikaner names of the sub-schemes became African.

Throughout this publicity campaign, farming for household food security, or constitutional rights to water or food, were ridiculed as backward, and an immediate criterion for disqualification and exclusion as backward and prohibiting progress. Unfortunately, but not surprisingly, the implementation of RESIS Recharge appeared very disappointing (DAFF, 2012).[15]

4. Implementation of RESIS Recharge

4.1 Plot holders' organization and construction

With these top-down plans, the Limpopo Department of Agriculture contacted smallholders in the upper part of the Flag Boshielo scheme and in Strydkraal with the option to revitalize their irrigation sub-schemes with floppy systems. None of the communities was eager to consolidate all plots and give the land away for years of the construction of an unknown irrigation system. However, the department's approach was abso-

14 For the extension worker's establishment of another, partly overlapping, irrigation group in Elandskraal and the resulting court case on land conflicts, see Tapela (2009). Conflicts escalated further, leading to full collapse.

15 While this chapter focuses on the structural factors of government's accountability, there were also many rumours of corruption in RESIS Recharge and other infrastructure works in Flag Boshielo scheme. Allegations were that money for canals never led to even a single crop. Budgets for repair and maintenance quadrupled overnight. In 2009, Limpopo's standing committee on public accounts (Scopa) wanted the province's agriculture head charged with fraud and corruption. http://www.sowetanlive.co.za/sowetan/archive/2009/10/21/r68m-boss_faces-probe Yet, he appears in the Africa Davos Debates of 2010: https://www.youtube.com/watch?v=3r0wcooR5-I

lute,'either this or nothing'. For example, farmers in De Paarl expressed serious doubts and their preference for food crops instead of a cash crop selected by the strategic partner, but they 'didn't hear from the department thereafter'. In Phetwane, farmers were especially reticent because of the recent negative experiences of cotton-farming (Tapela, 2009). In the end, the department decided to continue with the four upstream farms Phetwane, Mogalatsane, Kolekotela and Setlaboswane, and with Strydkraal.

In the organization of the plot holders into a co-operative, younger men quickly came forward, even if they did not have plots, attracted by money to be gained. Moreover, as an older woman commented, young men know English and may also know computers. The co-operative's committee reflected a weakening role for the tribal authorities. While the influence of Chief Matlala was tangible in Phetwane, Chief Masemola's influence in Setlaboswana was less. Chief Masha's influence in Strydkraal was initially strong in the various initiatives, but became increasingly contested.

The composition of members seems quite inclusive and gender balanced, although no in-depth research is available in this regard. Relatively equal, if not dominant, membership by women seemed aligned to earlier *de facto* plot use, irrespective of PTOs, and reflected women's primacy in cultivation. Access to the dividends was generally proportionate to plot size. If two people shared a plot, they also had to share the dividend. In some cases, the new floppy system did not cover all plots. While some co-operatives excluded those plot holders, other included them in the new co-operative. Yet, this land consolidation and organization came at a high price. Many members told us,'Before, we had our own plots; they were indicated with pegs. But now, we cannot even access our own plot'.

During the vacation of the land and construction phase between 2005 and 2008 or 2009, all informal irrigation gardens along the canals, especially by older women, were removed without any form of compensation.

In Strydkraal, various initiatives took place. In 2008, a floppy system was installed that covered 20 ha in a part of the former irrigation scheme that couldn't be irrigated with the pumps because of major flood damage in 2002. This scheme had 18 members. Reinforcing the message of the hegemony of modern large-scale technology, respondents said that AWC even used to come with a plane to spread chemicals on the 20 hectare floppy scheme. In addition, 13 hectares were equipped, out of which AWC cultivated eight hectares, and provided free water to a five hectare vegetable garden of a women's group, Ikageng, which had ten

members. In 2012, the Limpopo Department of Agriculture finalized a major investment in another joint venture with AWC. Fertile land at a new site of 257 hectares was equipped new centre pivots, with an extension to include the centre pivot that had been operated earlier by Farmer B. The 263 members, mostly women, included all earlier plot holders of the Strydkraal irrigation scheme, and also some who had belonged to the earlier Mooiplaas irrigation scheme. For this large new scheme, also called 'Mooiplaas', the strategic partner pumps water out of the gravity canal from the upstream weir in the Olifants River into a high reservoir. He also maintains the canal up to the point where he abstracts the water from the canal. On another site, three centre pivots were installed, with 33 members. An apex co-operative, Likamamos, was formed that includes the floppy system, the five hectare women's garden and the new large centre pivot scheme. With the strong support of the chief, the female leader of the women's garden and a man became the leaders of this apex co-operative.

4.2 Production in RESIS Recharge

Table 1 provides an overview of the new irrigation investments, size of farm and size of co-operative, technology and cropping seasons from 2008 or later onwards, and crops (Tapela, 2009; Sithole, 2011; Van Koppen, field notes).

4.3 Collapse again

Especially in the first years, dividends for the communities were in the order of USD200 – USD800 per crop. However, in later years, dividends tended to reduce. In the case of potatoes, this was possibly due to declining soil fertility. On each farm, there were also seasons in which AWC announced net losses, so the community did not receive anything. While government officials emphasized that such variability is inevitable in commercial farming and that 'communities should understand this', major conflicts arose especially in the years with losses.

By 2012, all four upstream farms had stopped working with AWC, two of them before the expiry of the three-year contract. Only one scheme, Phetwane, is still operational thanks to major government subsidies. The other three have been abandoned, lacked maintenance and were vandalized. They now depend on the next rounds of public support for repair of the infrastructure. In 2014 AWC also withdraw from the new scheme in Strydkraal.

TABLE 1

Name	Former Name	Area (ha)	No of co-operative members	Crops	Years of functioning Share for farmers
Elandskraal Balemi Irrigation Scheme Trust*		197 150 for EBIS Trust	12	Maize, cotton, wheat, vegetables	Centre pivots 2005-2016 30-40-50%
Phetwane	Hindustan	52	47** 14 M/33 F	Potatoes maize	Floppies 2009-2012 50%
Mogalatsane	Coetzeesdraai	133	98 M/F n/a	Potatoes maize	Floppies 2009-12 50%
Kolokotela	Krokodilheuwel	243 (220 floppy)	202 M=96 F=90 Unknown 2	Potatoes maize	Floppies 2009-2011 50%
Setlaboswana	Vogelstruiskoppie	114	96 M=38 F=37 Unknown = 21	Potatoes maize	Floppies 2009-2011 50%
Strydkraal & Mooiplaas	Till end 1990s 338 ha 2008 – to date: floppies 20 ha 2008 – to date: sprinkler 13 ha (with 5 ha for Ikagen women's garden and 8 ha by AWC) 2012 – to date: 15 centre pivots of 300 ha		Floppy: 18 Ikagen garden 10 women 15 Centre pivots 296, mostly women	Vegetables Maize Wheat	Floppies, Centre pivots 50%

* See Tapela (2009) for the Kgotlelo Balemi Irrigation Co-operative established in 2008 with Temong.
**Tapela (2009) notes how a total of 56 household had sharing arrangements to these plots.

The single most common complaint of the co-operatives was that the farm enterprise and its spending and income remained totally untransparent to the co-operatives. This hit hardest in years of claimed net losses, so there were no dividends. The proposition to put the losses on co-operatives' next year's accounts seemed to them to be totally unacceptable. Searching for clarity on the farm budgets, co-operatives only managed to talk to AWC's farm managers as the middlemen who were regularly on site. These middlemen (and AWC himself) generally referred all queries and issues to the Limpopo Department of Agriculture for clarity. However, the LDA didn't provide clarity on AWC's farm budgets either, possibly because they did not know what they were.

In Phetwane, women farmers complained that AWC 'even came in the night to put chemicals, so that the community did not know what he did'. After three winter seasons from 2008 –2011 in which potatoes or maize was grown, , they felt 'enough is enough'. The co-operative and AWC agreed to terminate the contract. After that Phetwane continued on their own. However, during the following three seasons, LDA still paid for some (but insufficient) fertilizer, seeds, chemicals, the electricity bill, tractor services, and infrastructure repairs. The incomes from local sale remained very low: just enough to pay the labourers. Lack of transparency regarding accounting continues to divide the committees. Regular elections of new committees fail to bring any real or lasting solutions. President Zuma visited this 'success story' in 2013.

Internal tensions emerged in Mogalatsane. The committee's announcement that AWC had declared losses was met with considerable suspicion among members that money had disappeared into the pockets of the committee. New committees were elected, but with a continued absence of information for anybody except AWC himself, nothing changed.

In Setlaboswana, suspicion on AWC's claims of losses, in spite of the 'truck loads of potatoes that left the field' was the reason for several young men to travel to the potato buyer to check on the company. In 2010, they even opened a court case with the support of a (paid) lawyer from Pretoria to defend their case. However, given the contract, the case is still unsolved. Litigation costs were also too high for the villagers to continue the case. Tension about how to manage this conflict split the co-operative.

Thus, with growing internal tensions, co-operatives bore the brunt of the losses. The lack of transparency meant that even the 'crumbs of the cake' caused conflicts. For example, AWC suggested that the remnants of the potato harvest were free for picking by any villager, while the co-op-

eratives tended to see those benefits as their entitlement.

In Strydkraal, the lack of transparency took another direction. Learning from the other experiences, Chief Masha and the apex co-operative leadership negotiated more transparency from AWC. The leadership of the apex co-operative proudly claimed to keep accounts for the inputs, number of trucks leaving the fields, and income gained. They also insisted on co-deciding about the crop. Unlike the upstream co-operatives, the Strydkraal co-operative resisted the cultivation of potatoes because of the soil depletion and risk of plant disease, certainly when potatoes are grown in consecutive seasons. However, in the eyes of some members, this information was not properly communicated. Tension escalated when there were no profits. Chief Masha had already been 'under siege of his subjects' in the land restitution claim to the land in Kalkfontein from which the community had been forcefully removed in the 1950s. In that claim, some of his subjects challenged the chieftaincy's power and claimed an equal status in the Community Property Association. The same contest emerged in the apex co-operative. Younger male members lodged a strong case to both the apex leadership *and* the Department of Agriculture to provide full transparency about investments made in Strydkraal. At the same time, the house of the woman co-operative leader was set on fire. She left to live elsewhere. When AWC decided to leave Strydkraal, the young male members negotiated with Farmer B. to return as strategic partner to Strydkraal for the new large scheme. Older women and the majority of members, avoided being drawn into this conflict and gave up any gains.

4.4 Training and labour

Amidst of such allegations and lack of transparency, a second common complaint was that AWC had hardly given any training at all to community members, neither through active on-the-job training nor formally. In the four upstream farms, two persons from each farm were trained as pump operators, two were trained in health and safety issues and one person received training in operating the floppy irrigation system (Tapela, 2009). In Strydkraal, a respondent told us that AWC called people for training. Five people went, but as 'one needed to have maths and physics, four people were sent back. Then the last one was also sent back'. On other farms, he trained a pump operator. One of them told us how he could switch the pump on and off from his mobile! AWC clearly prioritized making money, half of which accrued to the communities.

In the end, the only benefit was paid labour. Job opportunities were in high demand. The co-operatives diligently registered the work provided and the payment. However, jobs were very limited as most operations were mechanized. Security guards and the pump operator had full-time jobs. In Mogalatsane, for example, planting offered two days of work to 100 persons, while harvesting provided two days of labour to 60 people. The wage was below the minimum wage: USD5 per day.

This course of events had major longer-term impacts. While AWC just moved out after some seasons with more or less benefits, communities again bore the brunt of the experiment. Soil fertility had reduced, especially where potatoes had been grown successively over several seasons. No commercial farmer would have done that on his own land, but in the joint ventures there was a strong the need for quick monetary returns, ironically for both AWC and the co-operatives.

It also became very difficult to combat vandalism and theft of copper cables and transformers, which began as soon as communities decided to discontinue with AWC. The consolidation of land so that 'people didn't know their land anymore' further disabled communities from maintaining control.

Nevertheless, the idle land with potentially working irrigation infrastructure in Mogalatsane, Kolekotela and Setlasboswane keeps attracting other potential strategic partners, who now contact the co-operatives or chiefs. Making money remains appealing to some members. However, as discussed next, outside the floppy irrigation scheme, poor women and men initiated many other activities, wherever they were in control of the land and water infrastructure.

5. Local Water Development

Outside the ambit of the co-operative, many other initiatives were taken, including informal investments in water infrastructure as a bottom-up way to realize the constitutional right to access to food. This partly compensated for the loss of such opportunities in the floppy irrigated areas and the cultivation of Veeplaas by Farmer B. In Elandskraal, for example, people irrigated two hectare plots outside the formal boundaries of the scheme. These were highly productive. Nevertheless, that water supply was cut off (Mapedza, field notes).

In many sites, rivers, wetlands and canals were used for cropping. For example, a canal from the Piet Gouws dam was 'redesigned' by former farmers at Veeplaas through punctures leading water through long fur-

rows to individuals' fields, some of which were as large as five hectares (Tapela, 2009). The various water sources also provided water for livestock, or brick-making and small-scale enterprise. Moreover, with dwindling employment opportunities, men and women took up fisheries in the river and dam reservoir. However, government officials discouraged these activities for basic livelihoods, and even criminalized them, for example, by prohibiting poor women and men with very small nets to fish without a license.

Farmers also invested in irrigation in risky areas. In Mooiplaas, a wealthier relative of Chief Masha living in Johannesburg started to invest in an area adjacent to the river and prone to flood damage. Such lands are generally seen as too risky and mediocre for the department to develop.

Last but not least, initiatives to bring water to homesteads for domestic and productive uses were particularly vibrant. Already in the early 1990s, development forums of 63 villages in the Flag Boshielo area had organized to compile an inventory of existing water points and their status. They offered their insights and request to provide for 50 litres per capita per day to the Lepelle Northern Water Board. This Board was constructing a treatment plant just below the Flag Boshielo dam with the intention to provide drinking water to downstream villages. The development forums were ready to assist with implementation, for example with the piping (MaTshepo Khumbane, personal communication). However, the Board continued on its own, gradually providing piped water to few villages. The residential areas of the four upstream irrigation sub-schemes were included.

The Board charged significant sums to pay for any water above the 6,000 litres per household per day, the cut-off point for South Africa's Free Basic Water policy. However, in all four villages, the average consumption was less than 6,000 litres per household per day (Tapela, 2009). Water users were still charged for this free basic water. Water bills were sometimes extraordinarily high. Moreover, partly as a result of long delays in formal connections, some connections were made 'illegally' by private plumbers and without meters. Although this water supply system is supposedly for domestic use only, water appeared an important buffer for food security when cultivation on the irrigation plot became impossible and informal gardens along the canals were forbidden. Older women, in particular, began to use the water of the Lepelle Northern Water Board for homestead cultivation for food security, in addition to using it for drinking and other domestic uses (Tapela, 2009).

Villagers realized that non-payment in the long term will be unsustainable. Even households with household connections and meters, who failed to pay bills in the short term, refrained from using much water, fearing high water bills later. Where possible, water from communal boreholes sunk during the apartheid era was used for free. The boreholes also provided water to the poorest households who were not connected at all. Without access to a borehole, these households either asked neighbours for permission to use their water supplies, or they went to the river and canals (Tapela, 2009).

While only some households in the upstream communities had lacked access to the new water supply, the situation in Strydkraal was worse. The services of the Lepelle Northern Water Board had not reached the area. The municipality generally failed to provide any water from either the pre- or post-1994 boreholes, or the reservoirs, and piped gravity schemes. In addition, the reservoir was too small to provide water to the rapidly expanding population. In the absence of adequate State support, private water vendors with donkey carts or cars took the initiative. They sold a 200-litre drum for USD2 or USD3. In Strydkraal, some women used and re-used this very expensive water to irrigate the vegetables in their homesteads. So, while state-subsidized, high-tech floppy systems abundantly irrigated several hundreds of hectares of crops, women paid for small amounts of expensive water or they carried dirty water with buckets and wheelbarrows from nearby gravity canals, or, worse, from the distant, crocodile-infested Olifants River.

In Strydkraal, MaTshepo Khumbane, founding member of the Water for Food Movement, trained women how to harvest run-off and roof water into underground tanks. Together with weather charting and soil fertility measures, this water is used and re-used for vegetable growing or small-scale enterprise for consumption and sale. Mind mobilization workshops encouraged participants to design plans for their own homesteads, the place where women can exert at least some control over their own lives. As the conflicts in the Strydkraal co-operative intensified (see above), women saw many advantages in this realistic water-harvesting option.

These numerous informal initiatives to invest in water for self-supply show once again the women's drive to produce crops for basic food security and sale, debunking all myths that black people are only consumers of the produce of others. Villagers creatively combine multiple sources of water (precipitation, run-off, streams, wetlands, and groundwater) to

meet their multiple domestic and productive water needs. Wherever hydro-geographies and topographies allow, water from both natural sources and public or private infrastructure allows for a range of uses in order to improve many dimensions of livelihoods. This is the only way in which women's indivisible constitutional rights to access to sufficient water and food are being met in the area of the Flag Boshielo scheme.

6. Conclusions and Recommendations

6.1 Government's view

In 2012, immediately after the expiry of the three-year contracts in RESIS Recharge, the draft strategy for irrigation of the Department of Agriculture, Forestry and Fisheries[16] drew its conclusions and the lessons it had learned the hard way. In many respects, the rehabilitation approach of RESIS Recharge returned to the initial design of the revitalization approach in RESIS. We focus below on three main tenets in the strategy.

First, DAFF emphasizes the need to fully recognize diversity and cites human rights to water and, implicitly, to food. The strategy includes the poorest by taking the perspective of all inhabitants in the Flag Boshielo scheme and the multiple uses for multi-dimensional well-being, integrated into broader livelihood strategies.

> *The UN Committee on Economic, Social and Cultural Rights has recognized the human right to water. The human right to water is implicit in rights for food, survival, adequate standard of living and in the people's right to manage their own resources.*(p. 22).

> *Participation, ownership and appreciation of diversity at scheme level needs to be integrated with livelihood strategies outside the irrigated context. This means taking into account the multiple water needs for personal use, livestock, fishing, laundry and other small businesses using water in addition to irrigation.* (p. 13).

In the 'unavoidable split [of] farmers into subsistence, small-scale and commercials farmers' the strategy sees the level of risk as a main criterion and sets realistic expectations for commercial farming in former homelands. Accepting subsidization of capital investments, running costs should be paid by farmers. So a primary risk is the high operational costs of sophisticated pumping schemes, which force farmers to gain high incomes for net benefits. On the other hand, gravity and

16 DAFF (2012).

flood schemes are recognized to avoid that risk. A realistic and holistic assessment is made of the complexities of farming which include aspects such as markets, finance, inputs, infrastructure, capacity and institution-building and crop-production information, among other things' (DAFF, 2012: 11). Historical inequities are emphasized: 'The impact of isolated sites, difficult communication and poor supporting infrastructure will result in lower production than average commercial sector scenarios' (DAFF, 2012: 12).

The second tenet in the strategy regards the clear need for a participatory approach with voluntary, prior, and informed consent. This is also in line with the constitutional principles of participatory democracy. Successful revitalization requires that all relevant stakeholders be identified and their roles and responsibilities must be clearly spelled out. A key requirement is to involve beneficiary participation in the planning of revitalization for their specific scheme. This is essential to ensure sustainability and to avoid conflict (DAFF, 2012: 9). The draft strategy recognizes that the provincial departments of agriculture are the initiators and drivers of the revitalization process, but is adamant never to try 'to enforce any model, process or technology that is not acceptable to the specific farmers. That would be a trigger for conflict between the provincial department and the farmers and a guarantee for failure' (DAFF, 2012: 9).

The strategy also underlines that when the involvement of a strategic partner is considered, both the partner and the envisaged enterprise and technologies must be acceptable to, and formally accepted by, the farmers. Further, training and skills transfer with the strategic partner should be supported and include an annual monitoring and evaluation process. The Provincial Department of Agriculture should assume the responsibility of mediator to resolve any conflicts (DAFF, 2012: 10).

The third tenet regards the proposed budget, both the overall budget and its allocation. The proposed budget for the Limpopo province is USD466,401,000 over five to ten years. This is considerably higher than the budget proposed for RESIS (as mentioned above: USD108,688,000 for the period 2004-2010, mainly in Limpopo). The target increased from 19,730 ha in RESIS (for 126 schemes) to 22,909 hectares (for 28 schemes) (DAFF, 2012: 17). This gives a total rehabilitation costs per ha in Limpopo province of USD20,360/ha, which is among the country's highest.

The draft strategy makes a strong plea for a high allocation to the software component, citing:

> *Experience from various international and South African studies indicates that the total project cost in revitalization relating to infrastructure component must only comprise an estimated 33% of the total project cost. The cost attributed to human capital development (farmer training, institutional building, negotiation skills development, marketing support, mentoring, planning, etc.) and production input costs must comprise 67% of the total budget.* (DAFF, 2012: 12).

Within these pertinent broad directions, we now turn specifically to conclusions that can further guide the progressive realization of women's constitutional rights to access to sufficient water and food, non-discrimination, and participation, with a focus on water technology development.

6.2 Implications for participatory water technology development to meet women's constitutional rights to sufficient water and food

6.2.1 Grassroots participation

In the politics of productivity, control over water technologies is key. In the case of self-supply, this means ownership of technologies. As the duty bearer, government should at least respect and protect rights-enhancing self-supply, instead of ignoring, if not criminalizing, the main way in which the poorest inhabitants of the Flag Boshielo Scheme seek to use water for livelihoods. Over time, government should further *promote* people's own investments in water infrastructure.

In the case of water service provision by government and service providers with or without strategic partners, citizens should be able to hold service providers accountable. Inclusive participatory planning and design is the first step. This targets everybody, in particularly women and the poorest. Instead of ignoring the grassroots initiative of the development forums in the early 1990s who offered their knowledge, skills and time to improve water management, such constructive citizens' initiatives should be encouraged. From the planning phase onwards, water users should have voluntary, informed and prior consent on technology choice and design, and related costs.

Nowadays, it is the mandate of local government and its Integrated Development Plans to enable such demand-driven planning. This should include the various local governments, line agencies, NGOs, CBOs and tribal authorities. Planning by line agencies, which currently often occurs in parallel, should increasingly be aligned with these planning processes,

while still providing the unique and needed technical expertise of line agencies.

People are often both investors in self-supply and water services users. Moreover, a distinction between domestic water supplies and irrigation is bound to fail. In poor areas such as the Flag Boshielo area, irrigation canals and rivers remain the major source of domestic water wherever formal services have not been supplied, or where they remain unaffordable. 'Domestic' supplies are vital for gardening and livestock for basic livelihoods. Hence, planning should start with a holistic understanding and mapping of all existing water sources, infrastructure, uses and users as well as institutional arrangements for construction, operation and maintenance. Access by the poorest should be the starting point. Ensuring enough for all forever in terms of access to water for basic domestic and basic productive uses should be a basic planning criterion.

This requires moving beyond 'the household' and recognizing intra-household diversity, both along gender and age lines. Instead of assuming that (irrigated) farming or other income generation is done by a nuclear family, which is headed by the man with voluntary labour inputs from his wife and all adult children, the existing reality should be the starting point. There are many highly diverse combinations of gender and age, on and off-farm, livelihood strategies in both female- and male-headed households. The size of land for production varies from tiny homesteads to ten hectare fields. There may be farm sizes below which it is impossible to realize the predetermined economies of scale required by centralized infrastructure. The latter demands a sufficient income to pay for the high costs of pumping and other inputs. However, if people and their available land sizes are considered initially, any area of land, no matter how small, can be rendered more productive with water. Farm size as such is not an impediment to productivity; access to water, other inputs, and rewarding markets are key (Denison and Manona, 2007; Van Averbeke et al., 2011).

Investments in infrastructure construction or rehabilitation will also raise land tenure issues. This is an opportunity for land tenure reform, as proposed by Manona et al. (2010). The accumulated uncertainties surrounding longer-term land rights and lease contracts after almost a century of political forced resettlement and rapidly increasing populations with many young people, should be addressed.

Existing informal land-exchange markets can be encouraged so that those plot holders wanting to give up farming are compensated. Banks should be more imaginative in accepting sufficiently secure customary

rights, or other enterprise characteristic, as collateral for loan taking. Last but not least, these reforms can introduce more gender equality into plot rights, and finally ensure that those who cultivate, irrespective of age and gender, have secure rights to the produce. This is key for re-investment in higher production.

6.2.2 Water management and technology options

Instead of imposing centralized and large-scale irrigation infrastructure and required land tenure arrangements from the top, technology choice should be offered bottom-up, also strengthening land tenure security for women and youth. There are at least five sets of options.

The first set of options, and lowest hanging fruit, is to recognize and promote women's and men's already existing investments in infrastructure for self-supply for their priority uses. Any criminalization of water uses that contribute to realizing constitutional rights should cease. Examples are household wells, rainwater harvesting, reservoirs, wetland cultivation, pumping, and even connections from piped supplies or gravity canal diversions. While, it is true that some of these actions can damage infrastructure or deprive tail-end users, and undermine payment for services, in most cases such initiatives signal important contributions to the individual's constitutional right to water at no cost to the tax payer. Lastly, chiefs may have disproportionate powers to occupy lands, which government needs to curtail. In such specific cases, win-win solutions need to be found, invoking the constitution.

The second set of options requires pro-active promotion of self-supply by developing and disseminating appropriate technologies and encouraging sustainable market-led supply chains. The uptake of small mechanized pumps should be encouraged either by individuals or small groups of both women and men. If government focuses on providing central bulk supplies, whether through 'domestic' pipes or 'irrigation' canals, users can take charge of further distribution and on-site technologies. In order to ensure safe water for drinking and cooking, point of use treatment of minimally three to five litres per person per day should be promoted.

Third, it is the mandate of the domestic water supply sector and municipalities (public service providers) to provide for water to all to homesteads, i.e. including the poorest and women for whom the homestead is often the only site where water can be used for production. There are many untapped opportunities for Lepelle Northern Water Board and municipalities to 'climb the water ladder'. Increasing service levels for all

is probably the most significant option towards realizing the constitutional rights to access to sufficient water and food in rural areas such as the Flag Boshielo scheme. Service levels of Free Basic Water volumes should be increased to at least the 50 litres per capita per day proposed, as proposed by the area's development forum in the early 1990s. Supplies from multiple sources for up to 100 litres per person per day should be considered and pilot-tested. The incremental capital costs of augmenting pipes to allow for 50-100 litres instead of 25 litres are small compared to the additional livelihood benefits. Training in rainwater harvesting would provide water for domestic and productive uses at homesteads for a fraction of the costs per person of floppy systems. Participatory technical design enables women and men to choose what they prefer, also in terms of future operation and maintenance costs. The option of participatory design also holds for the fourth option.

The fourth set of options is initiated by the Department of Agriculture or Rural Development and Land Reform, and begins with participatory infrastructure design to ensure ownership and avoid abandonment and wasteful public spending. Where possible, flood irrigation may well be the preferred option. Villagers without any improved access to water for domestic uses, may wish the public investor to first meet this constitutional right to water for domestic uses before expanding to productive uses. However, opportunities for multi-purpose infrastructure are bound to exist, e.g. ensuring that cattle have proper drinking water sites and stay away from the irrigated crops. Depending on the nature of the risks, government is well placed to address insurance and other means of cushioning risks for smallholders who will need food and income during every cropping season.

The fifth and last option is to engage with individual strategic partners or agri-business. Having access to the other four options will offer strong bargaining power in any contractual negotiations. Various arrangements are possible. Land can be leased for a fixed amount; or share cropping arrangements can be agreed, stipulating how profits are divided as in the past joint ventures; or outgrowers can cultivate their individual plots, but collaborate with agri-business on cotton or other crops for inputs and marketing. As the Department of Agriculture recognizes, it has an important role to play in empowering communities to positively negotiate the design, implementation and monitoring of bilateral contracts and the division of profits and risks between agribusiness and community. Public agencies can monitor the agri-business partners to ensure that they meet

their commitments in time for the outgrower to play his or her part, and to hold outgrowers accountable in selling their produce to the company.

In all the above options, women and girls should be fully recognized as users of water for multiple purposes, and as producers who both ensure household food security and market produce for rewarding prices. The constitutional requirement to redress inequities of the past implies that black women and men farmers of the Flag Boshielo area should tangibly compete with the historically advantaged farmers for markets. They should finally be able to take up their fair share of the water allocation of the Olifants River.