Views on unlawful water abstractions along the Liebenbergsvlei River, South Africa

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Abstract

As a result of the growing demand for additional water supplies, officials at the National Department of Water Affairs (DWA) continually monitor consumption patterns. The unlawful abstraction of water for irrigation purposes along the Axle and Liebenbergsvlei water transfer scheme, a South African river catchment, has been identified as a potential over-consumption hotspot. An investigation into the evolution of modern farming and irrigation developments along this important water transfer scheme found that restrictions on irrigation water abstraction have primarily focused on the water security of downstream urban and industrial users who receive water at a high assurance of supply. During periods of normal rainfall the authorities paid little attention to the existing use of water from the Liebenbergsvlei water transfer scheme. Subsequent restrictions placed on local water abstraction for irrigation has achieved mixed results. This paper focuses on the perspectives of irrigation farmers who may be unlawfully using water from the transfer scheme. Their views are compared with those expressed by the authorities on this issue, and the way in which the authorities attempt to regulate water use in the region within the confines of existing legislation. The responses from the different sectors were qualitatively analysed and suggested solutions have been formulated for further discussion.

The study's major findings reveal that the contestation around water use for agricultural purposes will continue as long as the misunderstandings surrounding legal or illegal water use persist. As demand on water is escalating, it is considered important to put in place water security measures designed to safeguard the available water in light of scarcity.

Keywords: Lesotho Highlands Water Project (LHWP), irrigation, Eastern Free State, Gauteng water supply, Department of Water Affairs.

Disciplines: History, Political Science, Public Management and Administration, Soil Science, Legal Studies.

1. Introduction

The large water demand of the densely populated and industrialised inland province of Gauteng in South Africa has since the twentieth century been supplied through inter-basin transfers.[1] Since 1998, one of the largest schemes – the Lesotho Highlands Water Project (LHWP) – has

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1 . J Haarhoff and JWN Tempelhoff, "Water supply to the Witwatersrand (Gauteng) 1924–2003" in *Journal for Contemporary History,* 32(2), December 2007, pp. 95–114.

used the Axle and Liebenbergsvlei rivers in the eastern Free State Province to transfer water from the Kingdom of Lesotho to the Vaal Dam. The Vaal Dam is the anchor of the large and important Vaal River water supply system. From there water is distributed primarily to domestic and industrial consumers in Gauteng. As a result of the growing demand for more water supplies, officials at the National Department of Water Affairs (DWA)[2] have been looking at consumption patterns. The unlawful abstraction of water for irrigation purposes in this region has been identified as a potential over-consumption hotspot.

Illustration 1 In some parts the Liebenbergsvlei River flows in the typical shape of an Oxbow. Photograph: Johann Tempelhoff 2009.01 31

The most recent estimate by water resource planners of the use of water in the entire Upper Vaal region[3] is that about 174million m^3/annum is unlawfully used for irrigation purposes.[4] The water planners have further concluded that these losses contribute significantly to the precarious state of balance of the Vaal River water supply system. There is general consensus among experts that

2 . Prior to April 2009 the government department of water affairs and forestry (DWAF) was responsible for water governance. However, as a result of a number of departmental and ministerial changes, forestry now resorts under the department of agriculture. Water, in turn, is now a separate department, but falls under the ministry of water and environmental affairs. For the purposes of this discussion the department is now referred to as the department of water affairs (DWA).

3 . The Upper Vaal is the most economically important of the 19 Water Management Areas of South Africa. It is located in the central inland region of South Africa. See DWA electronic archive, Upper Vaal WMA Strategic Perspective http://www.dwaf.gov.za/Documents/Other/WMA/Upper_Vaal_ISP.pdf (Accessed 2010.05.19).

4 . See S Rademeyer, T Coleman, P Van Rooyen and W Wegelin, "Vaal River system: large bulk water supply reconciliation strategy" in *Civil Engineering,* 17(5), June 2009, pp. 9, 11–13.

the current demand from the Vaal system is exceeding its sustainable supply capability.[5] The imbalance in the system (the demand from the system, is greater than it's sustainable supply capability) is largely due to the growing demand from domestic users; large physical leakages occurring in municipal water supply infrastructure; and what is thought to be a vast quantity of water used for unlawful irrigation in the upper reaches of the catchment.[6] Above average rains over the past few years have masked the imbalance and a period of below average rainfall and growing demand would almost certainly result in unpopular water restrictions being applied. According to Seef Rademeyer, leader of a research project undertaken by DWA to outline a management strategy for the Vaal River catchment, irrigation farmers in the catchment have a role to play. Between 1998 and 2005 irrigation activities in the Upper Vaal River system (the area upstream of the Vaal Dam) have allegedly increased by more than 100 per cent.[7]

The LHWP was developed specifically for the benefit of Gauteng Province, which not only hosts about 25 per cent of the country's population but contributes in excess of half its gross domestic product (GDP).[8] Now, as more and more projections of the anticipated water shortfall in the Vaal River water supply system are being made, questions are being asked about the real benefits of the LHWP. This project, one of the biggest of its kind in Africa, stands out as a masterpiece of civil engineering. Moreover, the spin-offs of the initiative have been considerable. It has brought prestige to southern Africa, specifically to Lesotho. In South Africa as well as Lesotho the LHWP has meant that both governments have managed to incur financial savings by working judiciously within the project framework; both have started fostering economic and political interdependence; jobs have been created in both Lesotho and South Africa; and for Lesotho especially, it has been an opportunity to develop the Lesotho Highlands region.[9] [10]

However, there has also been a downside to the LHWP. Seloane and Van der Zaag,[11] Hassan and Matete,[12] as well as Hoover,[13] to name but a few, have identified a wide variety of socio-economic

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5 . DWA, Integrated Vaal River system WRM Studies at www.DWA.gov.za/Projects/VaalWRMS/default.asp (Accessed 2009.07.06).

6 See information on the Vaal River Systems Study: www.dwa.gov.za/projects/VaalWRMS// (Accessed 2010.05.18).

7 . L van Vuuren, "Start saving or start paying, river studies warn" in *Water Wheel,* 7(3), May/June 2008, p. 15.

8 . NE Willemse, "Actual versus predicted transboundary impact: a case study of Phase 1B of the Lesotho Highlands Water Project" in *Water Resources Development,* 23(3), September 2003, p. 457.

9 . R Meissner, The transnational role and involvement of interest groups in water politics: a comparative analysis (D. Phil, International Politics, University of Pretoria, 2004), p. 194.

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11 . P Seloane and P van der Zaag, "Can local people also gain from benefit sharing in water resource development? Experiences from dam developments in the Orange Senqu River Basin" in *Physics and Chemistry of the Earth Parts A/B/C,* 32(15-18), 2007, pp. 1322–1329.

12 . R Hassan and M Matete, "Integrated ecological economics accounting approach to evaluation of inter-basin water transfers: an application to the Lesotho Highlands Water Project" in *Ecological Economics,* 60(1), November 2006, pp. 246–259.

13 R Hoover, *The World Bank's failed efforts to restore lives and livelihoods of dam-affected people in Lesotho* (International River Network [IRN], Berkeley, 2001).

disadvantages that have ensued for civil society in Lesotho as a result of the LHWP. In some quarters there is a sense of discomfort and agitation with transboundary water users further downstream. Namibia relies on the water of the Orange River. That country's water managers are concerned about the decline of their water supply.[14] In many respects what is happening in the farming industry and its dealings with the DWA in the Eastern Free State can perhaps also be seen as yet another negative consequence of the development of the LHWP.

Not all unlawful water use in the Upper Vaal is along the Axle and Liebenbergsvlei rivers, but this is regarded as one of the regions most affected[15] because of the abundant quantity of water transferred through this region. There is also ample opportunity to abstract large quantities of water unnoticed. The river is in constant flood due to the vast quantities of water transferred from the Lesotho Highlands Water Project to the Vaal Dam. Pump stations are clearly evident along the river banks. All this presents a unique opportunity to study the attitude and responses of the irrigation farmers operating in the area and the mixed reactions from the authorities concerned, most notably the DWA, in dealing with this contentious issue. A conflict has arisen between water users and water use regulators to which a number of secondary factors also contribute to the unfolding situation.

2. Study objective and methodology

During 2009 a qualitative transdisciplinary investigation was launched by a group of researchers working in North-West University's CuDyWat,[16] to investigate views on water use along the Liebenbergsvlei River. Of particular interest were the contrasting views of different stakeholder sectors on the use of water along the transfer scheme. The researchers wanted to gain an impression of what drives the irrigation community and secondly, to ascertain the priorities of the DWA in addressing water use in the region. It was important to understand how the different stakeholders perceived the existing situation. A key objective was to be in a position to make recommendations on how to address these potentially serious problems. The researchers aimed to move beyond constrains, break down barriers and create common ground to contemplate the intricacies of both legal and illegal water use.

The project participants have widely different academic backgrounds and include historians, political scientists and those with management sciences, soil science, chemistry and industrial science qualifications.[17] Extensive internal feedback and debriefing sessions were held to compare

14 . NE Willemse, "Actual versus predicted transboundary impact: a case study of Phase 1B of the Lesotho Highlands Water Project" in *Water Resources Development,* 23(3), September 2003, pp. 457–472.

15 . See DWA report P RSA C000/00/4405/07 DWA(F) Vaal River system: large bulk water supply reconciliation strategy: first stage reconciliation strategy, December 2006 at http://www.dwa.gov.za/Projects/VaalWRMS/documents/VaalBulkReconStratDec06.pdf (Accessed 2010.05.19).

16 Research Niche Area for the Cultural Dynamics of Water (CuDyWat), North-West University, Vaal Campus, Vanderbijlpark, South Africa.

17 . Gender and racial representation of the research team was respectively: 3 females, 4 males; and 3 blacks, 4 whites.

and debate the views gleaned from the specific research objectives that had been assigned to each team member.

In January–February 2009 a preliminary reconnaissance group of three explored the region. Then, between 27 April and 1 May 2009, a group of eight researchers, working from a guest lodge outside Reitz, visited various sites along the Liebenbergsvlei River catchment, conducting interviews with farmers and a range of people with wide local knowledge.

Semi-structured (qualitative) group and individual interviews were conducted with 14 farmers who abstract water from the Axle and Liebenbergsvlei rivers for irrigation purposes. Representatives of the DWA with responsibilities in this region; representatives from the Small Grains Research Institute of the Agricultural Research Council (ARC); a lawyer working on legal actions between irrigation farmers and DWA; a representative from AgriSA and consultants employed by DWA to investigate irrigation practices in the region, were also interviewed. The responses from the different sector representatives were qualitatively analysed. Suggested solutions were then formulated for further discussion. A key objective was to identify the main factors that have contributed to the conflicting views and attitudes that have arisen between the irrigation farmers and the authorities on this issue.

An electronic archive was constructed and shared access was provided to all the members of the group.[18] Collective knowledge construction was a transparent process. Internally there were spontaneous checks and balances that guided the early phases of reporting. A post-fieldwork session was held by the researchers to consult with all stakeholders and identify relevant issues that could be added to the findings. An important objective from the outset was to ask people's views on how they perceived the complexity of the issue. While the process adopted could perhaps have benefited from being more structured, a conscious decision was taken to err on the more flexible side. While the interviews were qualitatively constructed there was a continuous reflection back to the key actors in the catchment area. This proved useful because many new and contrasting views presented themselves when the return interviews were conducted; some responses even challenged previous findings. Follow-up group discussions took place with DWA officials, consultants to the DWA, and an agricultural policy specialist. Team members also examined detailed issues of water abstraction, governance, the relevant legislation, existing water management and agricultural practices.

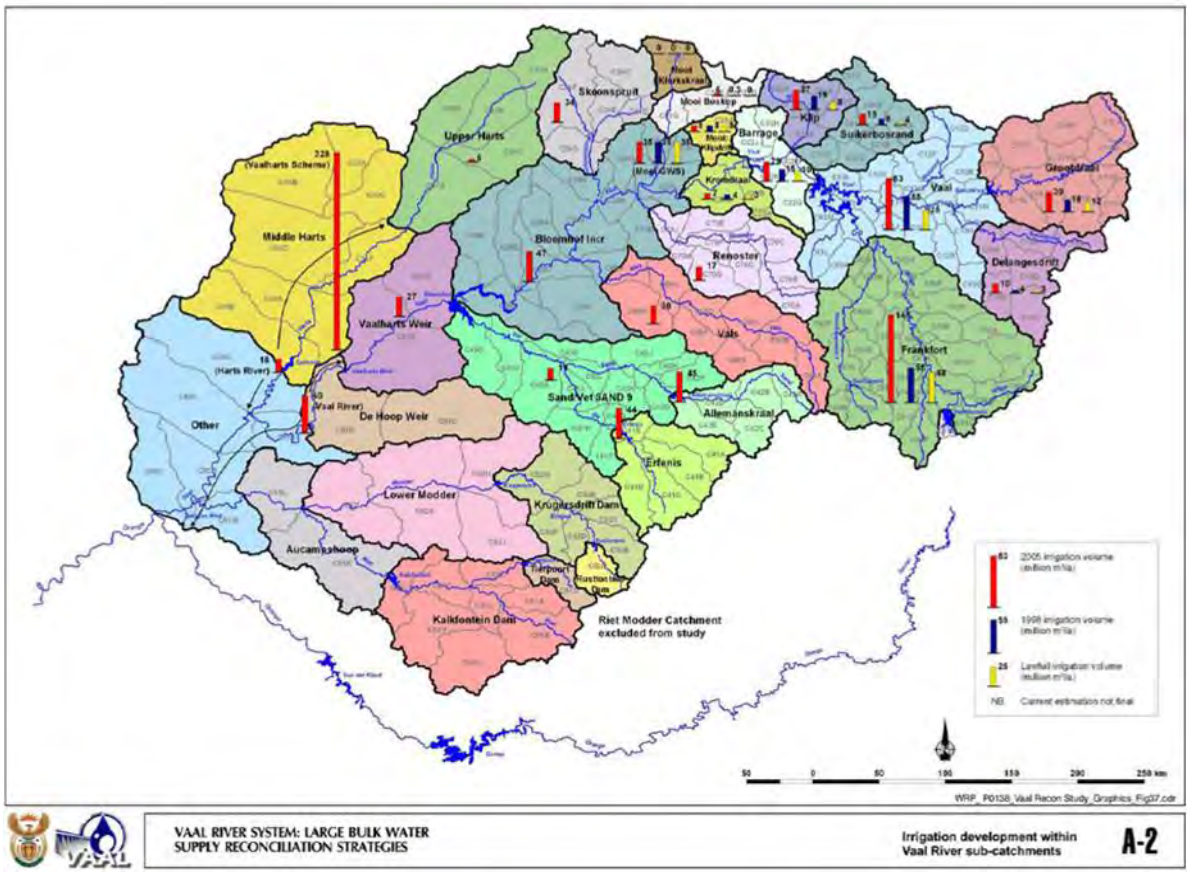
3. Farming along the Liebenbergsvlei River

Farming in the Free State is a long-established cultural tradition which is of vital importance to the economy of the province. An estimated 90 per cent of the Free State's surface area is used for agriculture.[19] Hensley *et al.* point out that the province makes up about 10 per cent of the surface

18 . Notes of interviews by members of the research team are numbered, to protect the identity of respondents. The codes of researchers' files in the electronic project archive are referenced in alphabetical order as follows: Martin Ginster (GMOA), Claudia Gouws (GCOA), Ina Gouws (GIOA), Harri Mäki (MHOA), Mark Nyandoro (NMOA), Ruth Mathipa (MROA), Sysman Motloung (MSOA) and Johann Tempelhoff (TJOA).

19 . Anon., "Provincial focus: Free State" in *SA Irrigation,* 30(4), 2008, p. 11.

area of South Africa, but produces a third of the country's total grain crop – mainly wheat and maize.[20] Whereas crop production is possible on only 14 per cent of South Africa's land, in the Free State suitable conditions for crop production exist on approximately 29 per cent of land.[21]



Map 1 Irrigation developments in the Vaal River sub-catchments[22]

The Free State has a climate with a wide precipitation range. An aridity index expressed as a ratio between rainfall and evaporation shows that most of the region is semi-arid. Exceptions are the south and south-western regions which are arid and the extreme eastern region which is sub-humid. There are distinct climatic regions across which the water is transferred from Lesotho along the Axle and Liebenbergsvlei rivers to the Vaal Dam. The agricultural potential along the water transfer route has been classified as medium. Key factors that determine this potential in the area include rainfall, rainfall variability, as well as temperature and soil type. Close to the border with Lesotho the average annual rainfall is in excess of 700mm and very reliable. The relatively lower temperatures shorten the growing season for summer crops but the rainfall is highly effective, with low evaporation rates. In the Reitz-Bethlehem region (Liebenbergsvlei) the average annual rainfall is between 680 and 700mm.

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20 . M Hensley, PAL le Roux, CC du Preez, CW van Huyssteen, E Kotze, LD van Rensburg, "Soils: the Free State's agricultural base" in *South African Geographical Journal*, 2006 88(1), 2006, pp. 11–21.

21 . *Ibid.*, pp. 11–21.

22 South Africa, Department of Water Affairs and Forestry, Vaal River system: large bulk water supply reconciliation strategy: first stage reconciliation (DWA, Pretoria, 2006), Appendix A-2.

The climate and soils generally favour crop production. Wheat is the crop of choice, followed by maize, with small areas of sunflower and dry beans. In the region of Frankfort and its surroundings the rainfall decreases to about 600mm; it also becomes less reliable. The lower rainfall and soil with less agricultural potential make the area less suitable for growing crops. Nevertheless, the region is intensely farmed and there is evidence of significant irrigation from the Wilge and Liebenbergsvlei rivers.[23] The study area is predominantly a dry-land production region with most irrigation taking place along riverfront properties.

The Eastern Free State has traditionally enjoyed the status of the wheat basket of the Free State.[24] Not only is Frankfort home to the second largest wheat mill in South Africa,[25] the region is also famous for its rapid development and its reputation as a major wheat producer in twentieth-century South Africa.[26] In more recent years there has been a significant shift from wheat to maize production. This is largely ascribed to the fact that South Africa is currently a net importer of wheat and local farmers are unable to compete with the imported product. Many have thus resorted to producing maize, which has a number of significant advantages over wheat in terms of production.[27] What is more, irrigation is used for maize production – a trend generally considered to be an inefficient use of irrigation water.[28]

4. Historical context

4.1 The early years

In the Eastern Free State, and the mountain kingdom of Basutoland (Lesotho) the history of farming goes as far back as 550 AD.[29] French missionaries active among the Basotho from the 1830s, recorded that local African communities had ardent agriculturalists in their midst, farming primarily with sorghum.[30] By the mid-nineteenth century they were producing maize, a crop introduced presumably from Mozambique and the Cape Colony.[31] They also engaged in

23 . *Ibid.,* pp. 11–21.

24 . Anon., "Provincial focus: Free State" in *SA Irrigation,* 30(4), 2008, p. 11.

25 . TJOA, Interview 3, 2009.04.28; NMOA, Interview 03, 2009.04.28; GCOA, Interview 03, 2009.04.28.

26 . CC Eloff, *Oos-Vrystaatse grensgordel: 'n streekhistoriese voorstudie en bronneverkenning*, I (Raad vir Geestewetenskaplike Navorsing, Pretoria, 1980), p. 119.

27 . Maize has become the most important cereal crop in South Africa. An estimated 67% of all grain crops produced in South Africa is maize. It provides 35% of South Africa's carbohydrate dietary requirements, 15% of its fats and 31% of its protein requirements. An estimated 25% of the maize crops are intended for livestock consumption. This is unlike the tradition in the rest of Africa. See J McCann, "Maize and grace: history, corn and Africa's new landscapes, 1500-1999" in *Comparative Studies in Society and History,* 43(2), April 2001, p. 266.

28 . TJOA, Interview: F Joubert (43), (GIS expert on Liebenbergsvlei River water), Schoeman & Vennote, consulting engineers to the DWA, Brits, 2009.05.12.

29 . J Wright and A Mazel, *Tracks in a mountain range exploring the history of the uKhalamba-Drakensberg* (Wits University Press, Johannesburg, 2007), p. 46.

30 . E Casalis, *The Basuto: or, twenty-three years in South Africa* (James Nisbet & Co., London, 1861), p. 165.

31 . *Ibid.*, p. 168.

wheat farming and found a ready market for their produce in the Cape Colony.[32] Between 1873 and 1900 maize became a major export crop from Basutoland to the Diamond Fields of Kimberley and the goldfields of the Witwatersrand. In 1873 Basutoland exported 8 000 tonnes of grain to Kimberley – about one third of its total production. By 1893 this had increased to 11 600 tonnes of wheat and 6 000 tonnes of maize.[33]

In the 1830s the first people of European descent began settling in the Eastern Free State. They acquired land in terms of special agreements with local African communities. Later, as their number increased, white land settlement became part and parcel of speculation in fixed property – a practice that was foreign to the indigenous people who were accustomed to communal land tenure.[34] Indigenous people were increasingly marginalised in terms of places of habitation.[35] Many of them sought employment on white farms; for others, sharecropping arrangements between white land owners and their black neighbours provided a reasonable outcome.[36] The development of sharecropping practices enabled the region to supply large quantities of maize to the rapidly expanding markets of the Witwatersrand goldfields after the 1880s. The impact of gold mining was that more African males began to migrate between Basutoland, the Free State and the gold mines of the Witwatersrand. And after the formation of the Union of South Africa in 1910, the *Natives Land Act,* No. 27 of 1913, was passed. Inter alia this legislation had the effect that many Africans were dispossessed of their traditional land.[37]

4.2 More recent developments

In 1970 the then Department of Water Affairs issued notices placing restrictions on the use of water in the Upper Vaal River catchment. They first outlined the Vaal Dam catchment as a

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32 . *Ibid.*, p. 169.

33 . J McCann, "Maize and grace: history, corn and Africa's new landscapes, 1500-1999" in *Comparative Studies in Society and History,* 43(2) April 2001, p. 261.

34 . E Casalis, *The Basutos: or, twenty-three years in South Africa* (James Nisbet & Co., London, 1861), p. 159.

35 . See TJ Keegan, "White settlement and black subjugation: the Tlokoa heartland in the north eastern Orange Free State, ca. 1850-1914" in W Beinart, P Delius and S Trapido (eds), *Putting a plough to the ground: accumulation and dispossession in rural South Africa 1850-1930,* (Ravan Press, Johannesburg, 1986), pp. 218–258; TJ Keegan, "Dispossession and accumulation in the South African interior: the Boers and the Thlaping of Bethulie, 1833–1861" in *The Journal of African History,* 28(2), 1987, pp. 191–207; TJ Keegan, *Rural transformations in industrializing South Africa: the southern Highveld to 1914* (Ravan Press, Braamfontein, 1986).

36 . For more information on sharecropping, see: C van Onselen, "The reconstruction of a rural life from oral testimony: critical notes on the methodology employed in the study of a black South African sharecropper" in *The Journal of Peasant Studies,* 20(3), April 1993, pp. 494–514; C van Onselen, "Race and class in the South African countryside: cultural osmosis and social relations in the sharecropping economy of the southwestern Transvaal, 1900–1950" in *American Historical Review,* 95(1), 1990, pp. 99–123; C van Onselen, "Social and economic underpinning of paternalism and violence on the maize farms of the southwestern Transvaal, 1900–1950" in *The Journal of Historical Sociology,* 5(2), June 1992, pp. 127–16; C van Onselen, *The seed is mine: the life of Kas Maine, a South African sharecropper 1894-1985* (Oxford, James Curry, 1996).

37 . For an exposition of the ramifications of this measure, see T Keegan, "Crisis and catharsis in the development of capitalism in South African agriculture" in *African Affairs,* 84(336), July 1985, pp. 371–398.

government water control area.[38] The second notice placed restrictions on the construction of storage dams in the catchment and on the extraction of water from the public streams.[39] These restrictions were of a preliminary nature. The state did not determine the final rights.[40] Furthermore, they were introduced at a time when water resource planners were predicting a significant shortfall in the water supply of the former Witwatersrand (a large portion of what currently constitutes the Gauteng Province).[41]

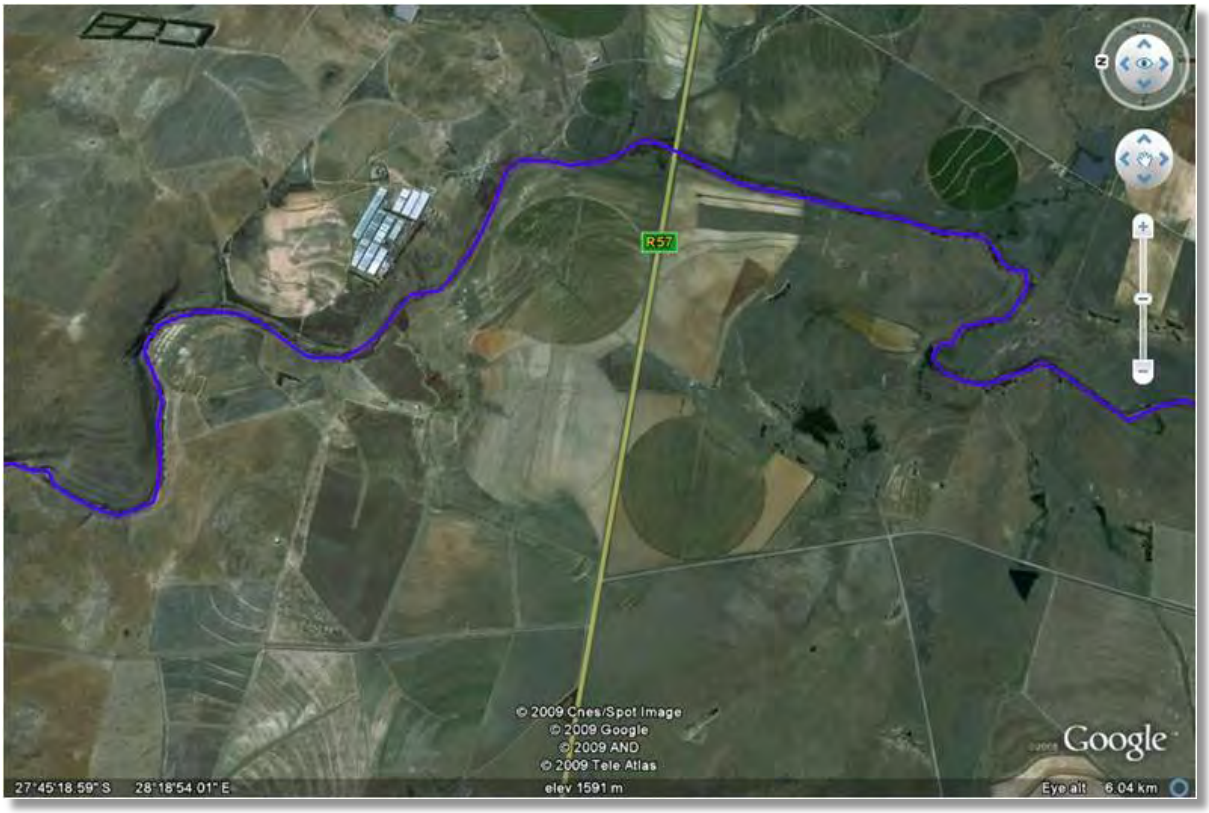

Illustration 2 A Google Earth view of irrigation activities along the Liebenbergsvlei River. Photograph Google Earth – Accessed January 2009

In an effort to cope with a potential shortfall the department resorted to seeking alternatives, such as the development of the Thukela Transfer scheme.[42] This major engineering initiative created a water supply for the Eastern Highveld from a river source that passed through the Drakensberg escarpment before flowing into the Indian Ocean. Development in what was then

38 . Government Notice 181 of 10 July 1970 in *Government Gazette of the Republic of South Africa*, No. 2750, 1970.07.10, p. 3.

39 . Government Notice 1187 of 24 July 1970 in *Government Gazette of the Republic of South Africa,* No. 2759, 1970.07.24, pp. 18–20.

40 . DWB BO210/2, September 1994. Aanhangsel A. Notule: Die eerste adviserende komitee vergadering gehou te Vaaldam op 19 Junie 1991, p. 3.

41 . TJOA, Interview 11, 2009.05.21.

42 . R Meissner, The transnational role and involvement of interest groups in water politics: a comparative analysis (D. Phil, International Politics, University of Pretoria, 2004), p. 201.

the Witwatersrand (currently Gauteng) region of South Africa, was taking place at a rapid rate and it was essential that the authorities secure an even larger long-term water supply.[43] In this respect what was later to become known as the Lesotho Highlands Water Project had a major role to play. The second notice of 1970 informed all those farming in the Upper Vaal River region that they could continue with their existing irrigation activities. This was henceforth to be considered "legal use". In cases where farmers had not done any irrigation prior to the regulation, they were entitled to install equipment making provision for a maximum of 21,4 ha of agricultural land under irrigation with a maximum water consumption rate of 6100 m^3 per hectare per annum (m^3/ha/a). Even now, experts in the field consider an allocation of this nature a sound estimate for effective water use under irrigation. However, it is accepted that it may be too limited for double cropping.[44]

In October 1986 the Lesotho Highlands Water Project (LHWP) was given the green light after the governments of South Africa and Lesotho concluded a treaty which made provision for the development of the scheme.[45] Then a complex process of consultation began between DWA and stakeholders. At the time, it was explained that the perennial stream flow of the Liebenbergsvlei River was set to increase drastically. What was scheduled to begin in 1996 as a flow of 18 cubic metres per second (m^3/s) would become 70m^3/s by 2020.[46] The department indicated that it would make a thorough investigation of the issue of agricultural land impacted by the increased stream flow of the river. In cases where property owners were affected they would be compensated by the department.[47] The intention of the department was to ensure that existing irrigation farmers would not be in a weaker position than they were before the introduction of the LHWP.[48]

In retrospect it could perhaps be argued that there were not enough consultations with the affected riparian farming fraternity along the Axle and Liebenbergsvlei rivers. There is however evidence that DWA, in concert with the consulting engineers, had kept to its original

43 . L van Vuuren, "Thukela-Vaal transfer scheme: feeding the hungry heartland" in *The Water Wheel,* November/December 2008, pp. 16–21.

44 . TJOA, Interview 10, 2009.05.12.

45 A Tanner, S Tohlang and P van Niekerk, "An overview of the engineering components of the proposed Phase II Lesotho Highlands Water Project based on the feasibility study" in *Civil Engineering,* 17(5), June 2009, pp. 28–35; OG Mwangi, "Environmental change and human security in Lesotho: the role of the Lesotho Highlands Water Project in environmental degradation" in *African Security Review,* 17(3), September 2008, p. 63.

46 . Departement waterwese en bosbou (DWB) BO210/2, September 1994. Aanhangsel A. Notule van die vergadering, insake die invloed van die Lesotho-Hoogland waterprojek op oewerplase in die Oos-Vrystaat langs die As- en Liebenbergsvleiriviere, soos gehou op 22 Februarie 1991, Department waterwese, Residensiegebou, Schoemanstraat, Pretoria, p. 2.

47 . Ibid., pp. 2–3.

48 . Aanhangsel A. Notule van die vergadering, insake die invloed van die Lesotho-Hoogland waterprojek op oewerplase in die Oos-Vrystaat langs die As- en Liebenbergsvleiriviere, soos gehou op 22 Februarie 1991, Department waterwese, Residensiegebou, Schoemanstraat, Pretoria, p. 4. In BO210/2, September 1994. Departement van waterwese en bosbou, Subdirektoraat: watertoedeling, As-Liebenbergsvleirivier Volume 1. Hoofverslag en Aanhangsels A tot E. (Schoeman & Vennote, Brits).

undertaking of working out viable quantified water extraction rates in the catchment.[49] In the course of the advisory committee meetings of 1991, there were indications that some of the assumptions made by DWA were unacceptable to representatives of farming interests.[50] On 4 February 1991 a farmers' day was held in the Eastern Free State where officials discussed the use of irrigation for intensive agriculture with farmers. In particular, attention was given to the use of water from the LHWP. At the time, engineers warned farmers that their irrigation plans should not rely on the new water supply coming from Lesotho.[51] In May 1993 the minister of water affairs, JA van Wyk, issued a government notice which retracted the provisions of an earlier notice, No. 1187 of 24 July 1970, in respect of

> *the piece of land in the Vaal Dam catchment government water control area which is riparian to the Axle River and the Liebenbergsvlei River and the Wilge River up to the point where the Wilge flows into the Vaal Dam.* [52]

It was determined that as of 7 May 1993:

> *No water from the stretches concerned of the said public streams may be construed, altered or enlarged on any of the relative pieces of land and that no further irrigation development may be undertaken on the pieces of land concerned on the authority of a permission issued by me [the minister] in terms of section 62(2B) of 62 (21) (a) (i) of the said Act.*[53]

Arrangements of this nature were partially as a consequence of drought conditions. In years of normal rainfall the authorities made little effort to monitor the farmers' water consumption patterns. However, if and when drought conditions set in, water conservation was uppermost in the minds of DWA officials. This tendency was more than evident in the drought conditions of 1983–88 and 1993–95.

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49 . See DWB BO210/2, September 1994. Aanhangsel CA Louw and J Kleynhans, "Beperkings op die ontrekkingstempo langs die Vaalrivier" (Streeksingenieur Transvaalstreek, Besproeiingsingenieurswese, 1991.10.01; EPJ Kleynhans,"Verslag oor die bepaling van 'n geskikte pomptempo vir die Vaalrivier opvanggebied 1991, Departement Landbou-ontwikkeling. Streeksingenieur Transvaalstreek, November 1991); and B0210/1, Julie 1991. Verslag aangaande ontrekkingstempo's uit openbare strome.

50 . DWB BO210/2, September 1994. Aanhangsel A. Notule van 'n adviserende komitee vergadering gehou te Vaaldam op 2 Oktober 1991, pp. 1–2.

51 . DWB BO210/2, September 1994. As- Liebenbergsvleirivier Volume 1. Hoofverslag and Aanhangsels A tot E, p. 4.

52 . Government Notice No. 764 of 7 May 1993, Vaaldam catchment government water control area, in so far as it concerns specific stretches of the Orange Free State: withdrawal in terms of Section 62 (2B) (e) (ii) of the *Water Act,* 1956, of Government Notice No. 1187 of 24 July 1970 in respect of a certain category of pieces of land in *Government Gazette of the Republic of South Africa,* No. 14767, 1993.05.07 at http://www.puk.ac.za:2111/WebZ/FETCH?sessionid=01-59441-386729291&recno=4&resultset=1&format=F&next=html/t2/full.html&bad=html/t2/error/badfetch.html&&entitytoprecno=4&entitycurrecno=4 (Accessed 2009.05.26).

53 . *Ibid.*

It was in this period that the first major shifts in the direction of water demand management (WDM) strategies were applied in the South African water sector.[54] More importantly, in preparation for the LHWP water flowing down to the Vaal Dam, DWA had to make arrangements for the effective management of this additional water which was intended primarily for urban domestic use throughout the service distribution area of Rand Water (a bulk water supply utility). The proclamation of 7 May 1993 also marked the start of plans by DWA to implement a ban on further use of the Axle and Liebenbergsvlei rivers for irrigation water until such time as applications for water rights in terms of Article 62(2F) of the *Water Act,* No. 54 of 1956 had been processed.[55] The manner in which the farming community responded to DWA's warnings is evident from a rumour that began to circulate. In June 1994 a report appeared in *Landbouweekblad,* in which the Eastern Free State Fruit Growers' Association let it be known that they were concerned about the state of affairs. Since 1990 apple farming had begun making significant headway in the region.[56] The department of water affairs, the farmers now claimed, was trying to limit their supply of water just at a time when they were seeking alternative avenues for crop diversification.[57]

The 1993–95 drought conditions coincided with the April–May 1994 political transition of the South African government to a non-racial democratic dispensation. There was a vast array of complex government departmental changes, policy shifts and interactions between civil society and state machinery. Added to all this, the new government had to deal with what was the largest transnational water scheme in the country's history. The LHWP was scheduled to come into operation in the not too distant future. The first interaction with the farmers was a basic procedural formality under drought conditions. In May 1995 the minister of water affairs and forestry, Prof K Asmal, issued a notice placing a limitation on the pumping of water from the Vaal River system. Irrigation farmers and others who were resident along the Liebenbergsvlei River were only allowed to extract water from 06h00 on Tuesdays to 06h00 on Fridays.[58] There seemed to be a favourable response to this regulation. Meanwhile, country roads were being upgraded and sturdy bridges being constructed to cross the Liebenbergsvlei River at various

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54 . Water demand management (WDM) is a strategy in integrated water resource management that was introduced to South Africa in the late 1980s. The objective is to manage water in such a way that consumers are disciplined by demand and supply so that they, of their own accord resort to saving water. For example, stringent water restriction, are not considered to be a solution. Instead, it should be an inclination that is a cultivated conservation consciousness on the side of water consumers. WDM also has the objective to refrain from summarily starting new water schemes to provide more water. For more on this strategy, as applied by the water utility Rand Water, see JWN Tempelhoff, "From water restrictions to water demand management: Rand Water and water shortages on the South African landscape (1983–2003)" in PS Juuti, TS Katko and HS Vuorinen (eds), *Environmental history of water – global views on community water supply and sanitation* (IWA Publishing, London, 2007), pp. 531–562.

55 . Copy of press release, Department of water affairs, "Vaaldam: gebruik van Lesothowater gevries, 10 Mei 1993".

56 . J le Roux, "Bylae: plaagbestryding by vrugte – blink toekoms vir nuwe appelstreek" in *Landbouweekblad,* 1999.05.29 at http://152.111.1.45/argief/berigte/landbouweekblad/1999/05/28/3/2.html (Accessed 2009.06.16).

57 . Anon., "Watertwis kan vrugteplan in Oos-Vrystaat kelder" in *Landbouweekblad,* 1993.06.11.

58 . Notice 653 of 1995.05.05, Notice in terms of Section 9a of the Water Act, 1956: curtailment of the abstraction of public water from the Vaal River system in *Government Gazette* of the Republic of South Africa, 1995.05.05, 16369, pp. 24–27.

points in the region between Bethlehem and Frankfort in the Eastern Free State. Farmers, taking note of the developments, responded by expanding some of their irrigation operations. Then, on 18 September 1998, the minister of water affairs and forestry issued two notices. The first, Notice No. 1175 of 18 September 1998[59] stipulated:

> *no water work in which more than 50 000 cubic metres of public water can be impounded or stored or with which more than 10 litres of public water per second can be abstracted or diverted on a property contemplated in the said section 9B (1) (a), may be constructed, altered or enlarged in the intended public streams, except on the authority of a permit issued by the minister.*[60]

Another proclamation, No. 1176 of 18 September 1998, issued on the same day, stated that private water users were now confined to a maximum storage facility of 50 000 m^3. Furthermore, it was required of farmers (in terms of the 1956 legislation) to apply for a permit, allowing them to extract water. Many users had already applied for permits.[61]

A few days later, on 1 October, the new *National Water Act,* 36 of 1998 came into effect.[62] There was still no response to the permit applications farmers had submitted earlier to DWA. In legal terms, if DWA wanted to comply with the *Water Act* No. 54 of 1956, it was supposed to publish lists of applications for water allocations, in terms of Section 62 (2F) of the 1956 Act. These procedures formed part of the operations of the department in matters of this nature,[63] so the implication is that officials should have processed and responded to all applications. However, this had not been done, despite the fact that there is evidence that the farmers began to respond by making application to register their rights in 1993. Furthermore, sections dealing with surface water in the new *National Water Act* only came into effect a year later (in 1999). Until October 1999 surface water was supposed to be dealt with in terms of the 1956 legislation.

Up to the present, the *National Water Act* is still not applied in all its contexts; there is still a tendency, under certain circumstances, to apply the old act of 1956. This is particularly the case, when it is necessary to determine whether a water use is an existing lawful entitlement. The old

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59 . Notice No. 1175 of 18 September 1998. Catchment of the Vaal Dam: Amendment of the limits laid down by Section 9B (1) (a) of the Water Act, 1956, in regard to the impoundment, storage abstraction or diversion of water works, in *Government Gazette of the Republic of South Africa,* No. 19245, 1998.09.18 at http://www.puk.ac.za:2111/WebZ/FETCH?sessionid=01-39683-1029476500&recno=1&resultset=10&format=F&next=html/t2/full.html&bad=html/t2/error/badfetch.html&&entitytoprecno=1&entitycurrecno=1 (Accessed 2009.06.16).

60 . Email disclosure F Joubert (43), Schoeman & Vennote, Pretoria – JWN Tempelhoff, 2009.06.15.

61 . Notice No. 1176 of 18 September 1998. Restrictions on the abstraction of water emanating from the Lesotho Highlands Water Project from the Axle River, the Liebenbergsvlei River and the Wilge River in terms of Section 56A(1) of the *Water Act,* 1956 in *Government Gazette of the Republic of South Africa,* No 19245, 1998.09.18 at http://www.puk.ac.za:2111/WebZ/FETCH?sessionid=01-40522-374301789&recno=27&resultset=2&format=F&next=html/t2/full.html&bad=html/t2/error/badfetch.html&&entitytoprecno=27&entitycurrecno=27 (Accessed 2009.06.15).

62 . The Act had been published in August 1998. See Government Notice No. 1091 of 26 August 1998. *National Water Act*, *No*. 1091 of 1998 in *Government Gazette of the Republic of South Africa,* No. 19182, 1998.08.26.

63 . Email disclosure F Joubert (43), Schoeman & Vennote, Pretoria – JWN Tempelhoff, 2009.06.15.

Water Act of 1956 has to be used in cases where the use was authorised under that specific Act. In essence, this means that the old Act is often used for the verification of entitlements; not all irrigation matters have been properly incorporated into the new Act. For example, in 1998 (when the LHWP's water started flowing down to the Vaal Dam) farmers could use LHWP water. If they used water prior to 18 September 1998 and their use was within the stipulated limits (using less than 110ℓ/s), they were legally entitled to do so.[64]

In 1998 Lesotho Highlands' water simply swamped the whole water supply of the Liebenbergsvlei River.[65] Everything was in place to regulate and protect the use of the Lesotho water and Section 62 (2F) was there to enforce the powers of DWA. The water in the Liebenbergsvlei River would supposedly be apportioned to the farming community in such a manner that it "excluded" the LHWP water being transferred along the Liebenbergsvlei. This simply did not happen. No measures were taken to rectify the matter.

4.3 Illegal abstraction

Key to understanding the dispute is the complex water registration, validation and verification process as set out in the *National Water Act,* 36 of 1998. Members of the research team visited the engineering consulting company of Schoeman & Partners in Brits. They are water management consultants working for DWA. One of the company's directors, Francois Joubert, provided a detailed explanation of the process. The new *National Water Act,* 36 of 1998 describes how the lawfulness of water use is determined. Part 3 of the Act specifies the conditions under which existing water use may continue even though that water use was derived from a law (notably the *Water Act* of 1956) that has since been repealed by the 1998 Act. The scrapping of riparian rights granted under the 1956 *Water Act* with the implicit intention to license water use meant that guidance was needed on the interim measures that would be applied, particularly to riverfront property owners, and to clarify their water use entitlements. The long and cumbersome process which is described below[66] has many loopholes and inherent delays – which are generally to the advantage of the water user if he is using more than his lawful entitlement. The process began when a government notice was gazetted in April 2000[67] requesting that all water users in the Upper Vaal should register their water use. The general trend was for farmers to register significantly larger quantities of water than they actually used. To acknowledge the quantities of water registered, registration certificates were issued by the department. Based on the information provided to them by the water users and using additional information from surveys, such as satellite images, the department prepared a pre-validation estimate of water use by farmers. A distinction was made between what the department considered lawful water use and the amount considered unlawful water use. In terms of the requirements of Section 35 of the 1998 *National Water Act* the DWA issued notices to water users to verify the pre-validation water use estimates determined by the department. Various administrative processes followed, including requests for additional information or directives if there had been no response to a notice. Water users could

64 . TJOA, Interview 10, 2009.05.12.

65 . TJOA, Interview 11, 2009.05.21.

66 . This overview is based on interview with a DWA consultant, GMOA 05, 2009.05.12.

67 . Notice No. 387 of 14 April 2000. "Request to register a water use" in *Government Gazette* No. 21086, 2000.04.14.

also make representation to the authorities. Communication challenges, mistrust, fear (of losing water entitlements) all appear to have contributed to long delays in finalising this process.

Illustration 3 The Katse Dam in Lesotho. Photograph: Martin Ginster, 2009.07.11

One clear intention of the Act is for all large water uses to eventually undergo a process of compulsory licensing. It was accepted that this would take time to implement. Interim measures to determine one's lawful water use were therefore included in the new Act. Importantly no (water use) licence is required to continue with an existing lawful water use "until a responsible authority requires a person claiming such an entitlement to apply for a licence".[68] When a licence is issued it becomes the source of authority for the water use. If a licence is not granted the use is no longer permissible. This provided a big incentive for water users to co-operate with the authorities to ascertain their lawful water use. The registration process for the entire upper Vaal region indicated a far greater area was under irrigation than could be served by the available water. Schoeman & Vennote were appointed by the DWA Gauteng to conduct field surveys on riparian farms along the Axle and Liebenbergsvlei rivers.

68 . South Africa, Department of Water Affairs and Forestry: A guide to verifying the extent of water use, edition 2.1, November 2006. Electronic version accessed at www.dwa.gov.za on 2009.07.05.

Illustration 4 Irrigation pump station along the Liebenbergsvlei River. Photograph: Martin Ginster 2009.01 31

A total of 376 properties were surveyed between March and May 2002.[69] The main objective was to ensure that all water users were correctly registered and to verify that they were indeed lawfully entitled to abstract water. During the initial registration process a total of 7 562 ha of irrigation land was registered on 159 properties with an annual abstraction of 43 306 876 m^3. Following the field surveys a total of 3 434 ha of irrigation was identified on 95 properties with an annual abstraction of 19 254 137m^3. This indicated an over-registration of 125 per cent as far as volume was concerned (120 per cent in the case of area). In terms of volume only 5 per cent of the registration applications were correct (4 per cent in terms of area). So, their estimate in 2002 was 19 million m^3.[70] For the entire Upper Vaal region the registration process indicated that there were 103 000 ha of land under irrigation but the available water for irrigation could only provide water for 23 000 ha of crops under irrigation.[71] The DWA clearly had a huge problem on their hands because they had data that they couldn't use.

69 . Executive summary, Liebenbergsvlei 2002 report by Schoeman & Vennote report to DWAF, 2002.

70 . *Ibid.*

71 . *Ibid.*

5. Attitudes and responses

From what has been explained above, it is evident that irrigation farmers along the Liebenbergsvlei water supply scheme had to comply with a veritable maze of complex legislation and policies that had been laid down by the DWA. The following section provides insight into the perceptions of these farmers; the stance of water-use authorities; and the perceptions of selected stakeholders. In order to ensure confidentiality it was agreed in consultation with the interviewees that their identity would be protected; a coded system of referencing was used to capture the information and store it in the electronic archive.

5.1 Irrigation farmers

A general observation was that most of the farmers concerned were highly critical of the way in which the DWA had thus far responded to their water use issues. The following quotes extracted from the interviews leave little doubt where local farmers place the blame. Broadly speaking these grievances can be categorised into a lack of concern on the part of officials; a lack of clarity on procedures; poor communication with the public; and general incompetence in dealing with the regulation of water use in the area.

Lack of concern

Over and above the ramifications of securing lawful access to water, various farmers found it discouraging that there was a lack of concern for their situation.[72] To some the indifference to their plight seemed to be a bigger issue than the actual delays and frustrations in addressing a complex and user unfriendly administrative process. "The DWA does not recognise irrigation farmers and does not have a clear irrigation policy", lamented one interviewee.[73] There were other similar expressions of complaint that were not directly linked to the main issue at hand.

Clarity of process

"A lack of clarity on the part of the DWA about water rights causes confusion in the market when it comes to valuing the price of land", said one.[74] Another respondent complained that "the only way to get any answer from DWA is to make use of a lawyer and that is expensive".[75] One farmer pointed out that he had communicated with DWA numerous times without success. He agreed that as a last resort an individual had no option but to hire a lawyer to unravel the confusion, but that this was prohibitively expensive.[76]

The farmers explained in great detail to the researchers that in their discussions with the authorities and particularly the consultants in DWA branch offices, the complexity of the legal process (as described in section 4.) to determine the lawfulness of water use was a major hurdle.

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72 . NMOA, Interview 03, 2009.04.28.

73 . GCOA, Interview 02, 2009.04.28.

74 . GCOA, Interview 03, 2009.04.28; GIOA, Interview 03, 2009.04.30.

75 . GIOA, Interview 03, 2009.04.30.

76 . GIOA, Interview 3, 2009.04.30; NMOA, Interview 6, 2009.04.30.

One repeatedly heard the view expressed that the DWA did not seem to know what the problem really was.

Communication

Both the farmers and authorities were in agreement that the necessary procedure to confirm the lawfulness of water use was challenging, often confusing and fraught with pitfalls. As far as many of the farmers were concerned the best way to resolve this impasse was by improving communication with the DWA, something they had found to be virtually impossible. "Farmers are not informed about any actions taken by the DWA", said one interviewee.[77] Another farmer claimed that communication between DWA and the irrigation farmers left a great deal to be desired. To many farmers it seemed a simple case that the Department did not inform the farmers exactly what was needed.[78]

Competence

Another key issue raised in the interviews was the mixed level of competency in the DWA. Perhaps this was merely an easy excuse; a way of placing the blame on nameless officials that were "unable to deliver". The statements made in the interviews with farmers were more generic and did not specify exactly where (and at what level) within the DWA the competence was found wanting. For example the response that noted: "The problem is partly due to incompetence on the part of DWA officials"[79], does not provide helpful analysis. Nor does the statement: "The officials cannot perform and they have no control over water use". [80] The farmers generally viewed the problem of water use as being caused by the inability of DWA to implement its own policies.

Time frames/delays

One farmer raised a time-frame issue when he maintained: "Water licensing has been under consideration by DWA for five years without any real progress being made locally".

Positive views

In the list of responses positive views towards the DWA were also expressed. One satisfied respondent said that he had no problems with DWA and that he believed he would be able to get a new pivot if he wanted one.[81]

5.2 Water authorities' views

Representatives of the DWA provided on the whole a more systematic and "technical" response when they were interviewed. Being more cautious to criticise the local water users, they were quick to emphasise the difficult challenge presented by the efficient control of water use in the

77 . GIOA, Interview 03, 2009.04.30.

78 . TJOA, Interview 01 2009.04.17.

79 . NMOA, Interview 08, 2009.04.30.

80 . NMOA, Interview 8, 2009.04.30; MHOA, Interview 8, 2009.04.30.

81 MHOA, Interview 03, 2009.04.29; GIOA, Interview 03, 2009.04.30.

region within the ambit of the law. The first problem they had to solve was whether a water use was in fact legitimate, and then to regulate that use. The officials went to great lengths to emphasise that they were indeed responding to the problem but that staff shortages were hampering their efforts. Two critical solutions highlighted by the DWA as being necessary to address the problem were the need for a regulation to force farmers to measure the water they used, and secondly, the wider use of remote sensing devices, including sophisticated satellite imagery, to identify unlawful water use.

A key message emanating from the authorities was that the farmers were compromising water security to Gauteng and therefore any unlawful irrigation had to be stopped. In correspondence with a member of the research team a senior DWA official made his view clear:

> *The issue is quite simple: the water that is being used unlawfully has already been paid for by other users, which makes it plain theft!*[82]

This view was further emphasised through statements such as: "This water has already been paid for by urban and industrial users";[83] and "What they are doing is simply stealing water".[84]

Another position taken by the DWA was that "unlawful irrigation" by these farmers was giving them the advantage of a constant flow of water, whereas dry land farmers were being pushed out of the market by those who had ready access to water.[85]

5.3 General observations

From the interviews it was apparent that misinformation, mistrust and poor communication have all contributed to this state of affairs. While the interviews with farmers provided useful information on their opinions as far as water loss was concerned, there were other aspects that were not readily forthcoming. It is interesting that no farmer volunteered to produce documentation that confirmed the lawfulness of his/her water use. This is not to suggest that they were being untruthful, but if proof is unavailable it is perhaps better to set an allegation aside.

It is interesting that matters of irrigation were relegated to second place when farmers discussed their frustrations with the research team members. Most negative comments were aimed directly at DWA. Farmers like to talk but they generally prefer not to share details about their farming activities and the viability of their operations. Perhaps this should be considered part of their personal competitive advantage. They are quick to present the general realities and the challenges of modern-day farming. Concerns about rising input costs (fertiliser, diesel, seeds, etc.) and low product prices remained high on the list of complaints.[86] In most cases farmers are "price takers",[87] in that they have little influence on the price they receive, which fluctuates

82 . GMOA, Correspondence 1, 2009.08.11.

83 . GMOA, Correspondence 1, 2009.08.11.

84 . GMOA, Interview 7, 2009. 05.21.

85 . GMOA, Correspondence 1, 2009.08.11.

86 . GIOA, Interview 05, 2009.04.28; NMOA, Interview 02, 2009.04.28.

87 . NMOA, Interview 05, 2009.04.29.

substantially. There are of course many risks involved in farming, including drought, fire, stock theft, personal security, disease, finances and land restitution.[88]

Illustration 5 An irrigation pivot near Frankfort, on the banks of the Wilge River in the Eastern Free State. Photograph: Johann Tempelhoff 2009.04.30

There are only white farmers along the riverside. This point was clearly emphasised by an emerging black farmer who was interviewed; he is farming in a nearby district. Among the thoughts he shared were that in his understanding:

> *It is only the marginal farms (never the good ones) that are put up for sale for land reform purposes.*[89]

He further articulated that the pace of land reform was far too slow to achieve the target of 30 per cent black ownership by 2014, set by the ruling government and went on to say that there was a growing realisation of the need for successful commercial black farmers rather than unsustainable emerging black farmers.[90]

88 . See M Ginster, C Gouws, CM Gouws, H Mäki, R Mathipa, S Motloung, M Nyandoro, and JWN Tempelhoff, The problem of irrigation from Lesotho Highlands water in the Axle and Liebenbergsvlei river catchment, Eastern Free State, (Report 1/2009, Version 2.10) CuDyWat, NWU, Vanderbijlpark, 2009.0826, p. 6.

89 . GMOA, Interview 02, 2009.04.29.

90 . GMOA, Interview 02, 2009.04.29.

There were frequent references to water licences.[91] According to the DWA there were few water users in the region who had applied for water licences through the *National Water Act,* 36 of 1998. Most of the lawful water users were being determined through the complex validation and a specific verification process as set out in Section 35 of the 1998 *National Water Act.* The outcome of this complex process is a letter confirming the existing lawful water use entitlement to a water user.

The payment for water remains a controversial subject. According to DWA no farmer pays for the use of water in this region; if they are being charged for anything it is not the cost of the water but a water resource management charge. This is a minimal fee, based on the initial amount of water registered.

For the most part, the DWA spoke in technical terms,[92] while the farmers spoke in more general terms.[93] This was a collision course towards misunderstandings, miscommunication, a lack of cooperation and, in the end, a poor result.

The DWA clearly identified the problem of unlawful irrigation. Being accountable to ensure that the main economic hub of the country (Gauteng and surroundings) receives the water requirements to function is an onerous responsibility that has been placed on the government's water department. At a senior administrative level it is all too easy to discuss the need to "eliminate unlawful water use", simply "because the water resource planning models indicate that this issue is contributing to the imbalance of the Vaal River water supply system".[94] These individuals lament the fact that water losses have serious implications; they can be compared, they say, in severity to the collapse of the transfer tunnel between Mohale and Katse – to the loss of the entire yield of the Mohale transfer scheme. If that were indeed to happen no doubt emergency repairs would immediately be initiated. And yet there is little or no urgency to address the challenge of unlawful irrigation. It is a subject that is easy to *talk* about. It focuses the mind. On the local and regional level the realities are quite different.

6. Discussion

Irrigated agriculture remains a highly contested terrain between the large constituency of commercial farmers in the Eastern Free State on the one hand, and the government's department of water affairs on the other.

Of particular relevance to the discussion and on coming to some form of comprehensive understanding of the issue, is the following observation by a senior water affairs official:

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91 . GIOA, Interview 01, 2009.04.30; GIOA, Interview 07, 2009.04.05.

92 . Group interview: W van der Westhuizen (54), North West University (Vaal Triangle Campus), 2009.05.21. See notes in digital archive of Nyandoro (NMOA), Ginster (GMOA), Mäki (MHOA), and Mathipa (MROA); see also TJOA, Interview 10, 2009.05.12.

93 . GIOA, Interview 06, 2009.04.29; Mäki, Harri Oral Archive (MHOA), MHOA, Interview 04, 2009.04.30; GCOA, Interview 07, 2009.04.30.

94 . See S Rademeyer, T Coleman, P Van Rooyen and W Wegelin, "Vaal River system: large bulk water supply reconciliation strategy" in *Civil Engineering,* 17(5), June 2009, pp. 9, 11–13.

> *The New* (National) Water Act *emphasised the efficient use of water but looked at it too narrowly and placed less emphasis on water security as a whole. So a farmer irrigating efficiently in the upper Vaal is protected by the Act but actually irrespective of how efficient his water use is it shouldn't be allowed as it compromises the water security from the Vaal. Here the law is weak to support water security.*[95]

The unlawful use of water by irrigation farmers in the Upper Vaal region has been identified as a major risk to the Vaal water supply scheme. The message from the water resource planners is very clear: despite the good rains over the past few years the demand for water from the Vaal system is exceeding its capability to supply water in an ongoing, sustainable manner. This is not the first time that the Vaal system has been stressed. Nor will it be the last. Water use by agriculture in the Upper Vaal region has been a contentious issue for a number of years.

It appears that unlawful water use is taking place throughout the country. However, water abstractions along the Axle and Liebenbergsvlei rivers present a unique situation. A notable difference between water abstraction from this source and from other rivers in the Upper Vaal is that in the case of the Axle and Liebenbergsvlei rivers an unusually large and unnaturally abundant quantity of water is constantly transferred because of the outflow from the Lesotho Highlands Project to the Vaal Dam. It is highly plausible to suspect unlawful abstraction of water from this system. The flow is large; continuous with no noticeable seasonal variation in the flow. Furthermore, the quality of water is very good.

Not all water use in the Liebenbergsvlei River catchment is unlawful. The legal process to distinguish between lawful and unlawful water use is highly complex. Furthermore, determining the relative lawfulness of water use is also difficult. There are stages in the process where delays – deliberately induced or otherwise – can occur. The process to verify the lawfulness of water use is the first step in the process to the compulsory licensing of water use.

At present there appears to be no institutionalised blueprint to bring all stakeholders into an integrated water management plan. In all the irrigation schemes in South Africa legislative provision has been made for consultative structures of communication and management of the available water supply. For example, irrigation schemes typically have water users' associations (WUAs). In urban areas where the stakeholder population is diverse, provision has been made for sub-catchment forums. In the case of the Liebenbergsvlei River, an institution resembling a form of interactivity between the department of water affairs and the farming community does not appear to exist.

During the registration process that began in 2000, most farmers tended to over estimate water use as compared to the preliminary validation estimate determined by the department.

One of the objectives set for this study was to be provocative and consider the issues of unlawful extraction of water from the perspective of "unlawful" action or simply as anarchy. Somehow anarchy does not fit the bill. It is difficult to think of farmers, who play a stabilising role in local communities and are considered by many to be role models for the next generation of inhabitants in the region, as being people operating clandestinely outside the law.

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95 . Comment by Mr Hennie Smit, acting regional head of DWA in Gauteng, to Martin Ginster at a water sector leadership group meeting, Riviera on Vaal, Vereeniging, 2009.06.18.

The researchers were given the opportunity, in the course of the interviews they had the privilege of conducting, to form an impression of the type of people the farmers are. They were also able to gain some insight into the frustrations of the competitive environment which farmers, as industrialists in their own right, experience daily. Most of those in the Liebensbergsvlei area are third generation farmers. Their perspectives on irrigation, their dealings with DWA and the manner in which they have to respond to the demand for greater equity in terms of land tenure are all factors that need to be taken into consideration when plans are mooted to effectively manage the water supply flowing to the Vaal Dam.

There is definitely a need to improve relations between DWA and the farmers. The government should create an enabling environment that would help them to move ahead with production unobstructed. The issue of subsidies should be given consideration; the importation of maize and wheat from abroad does not make sense in a country that has farmers who have the capacity to feed the nation.[96] The government should come up with production incentives, price incentives and other plans that will boost irrigation development. Dependency on imports is counterproductive in the longer term. The announcement of pre-planting prices should as far as possible be done early enough to influence farmers' decisions on what crops to plant and in what quantities they want to grow these crops for a particular season. It is noted that many farmers complain about the low prices maize and wheat are fetching on the market; if this is so, why continue growing these crops if they are not lucrative? Why not diversify into other fields?

The situation along the Axle and the Liebenbergsvlei River is an example of South Africa's excellent legislation, benchmarked by many countries of the world, not coming into its own right. It is imperative that DWA improves its institutional capacity for policy development, communication and implementation. This is vital if the high level recommendations of *Water for growth* are to be realised.[97]

Race plays a part in the debate on agricultural water use in the area. It appears that there are only white farmers operating along the Axle and Liebenbergsvlei rivers. Black farmers are aware of the unlawful water use that is taking place. It seems to be an issue they feel comfortable to criticise without fear of implicating the black farming community. There is, however, a realisation that black farmers would probably also exploit this water if they were in a position to do so.[98]

7. Conclusion

Water use along the Axle and Liebenbergsvlei rivers remains controversial. While the DWA has regulations in place to address unlawful water use, they seem unable to curb this practice. The effectiveness of the regulatory measures available to the DWA can be questioned. A lack of sound administrative action has also contributed to the impasse. An accurate measurement of actual

96. MSOA, Interview: J Nel (49), Reitz, 2009.04.28. See also notes of same interview in NMOA.

97 . DWA, Water for growth and development framework (Version 7, DWA, 2009) at http://www.dwaf.gov.za/Masibambane/documents/watergrowth/WFGD_Frameworkv7.pdf (Accessed 2009.07.08).

98 . GMOA, Interview 2, 2009.04.29.

water use has still to be determined but this will only be available once the formal verification of water use has been completed. Indications are that the actual water use is likely to be lower than the current estimate which is based on details provided during the registration process. Agricultural water use needs to be responsibly undertaken to ensure that the scarce resource is utilised to the best possible benefit of the entire region.

Thus, the picture presented by the farmers and government officials in the Department of Water Affairs whilst revealing contrasting perceptions is significant. It provides an interesting dimension from which to interrogate the challenges for South Africa as a whole and the Axle and Liebenbergsvlei region of the Free State in particular of the pervasive and unlawful water abstractions for irrigative purposes. To achieve agricultural sustainability and at the same time allocate the same water efficiently to all users there must be better cooperation between the major players. From the discussion it seems farmers need on the one hand to utilise irrigation water responsibly and DWA on the other should provide clear policy direction in irrigation farming to safeguard water as a scarce resource and avoid antagonising stakeholder sentiment.

Irrigation farmers in the Axle and Liebenbergsvlei river district are trying to hold on to their current water allocations to be able to sustain their existing livelihoods. The fear of losing this water is creating resistance to water management policies implemented by the DWA. The DWA on the other hand is responsible for implementing the *National Water Act* and to ensure that the water allocated to Gauteng from the LHWP actually reaches its destination.

It is, however, clear that farmers are not properly informed of the process of registration and licensing of water use. The DWA needs to constructively inform irrigation farmers what this process entails to avoid confusion about the methods and reasons for the water management policies the department is trying to implement. On their side, farmers need to constructively work towards the development of irrigation forums to ultimately represent their cause in a water user association or a catchment management agency. The existing farmers associations do not give irrigation farmers proper representation which leaves individual irrigation farmers to their own devices to solve problems and get answers to questions from the DWA.

A collaborative and inclusive attitude is needed from both sides. Farmers must realise that water is simply no longer freely available to them and that strict management of water resources are needed to prevent depletion and ensure a fair allocation to all South Africans. The DWA must understand that clear and considerate communication may be the key to take away some of the farmer's fears, thereby lessening their resistance and ensure effective and cooperative management of the disputed water resources. Agricultural water use needs to be responsibly undertaken to ensure that the scarce resource is utilised to the best possible benefit of the entire region.