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# Water resources management, rural redress and agrarian reform

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## Contents

<b>1. Scope: land and water in agrarian reform</b>	<b>4</b>
<b>2. Poverty, agriculture and rural development</b>	<b>7</b>
<b>3. Land and agriculture pre- and post-1994</b>	<b>11</b>
3.1 The pre-1994 legacy	11
3.2 Continuity and change post-1994	13
3.3 Land reform	14
3.4 Intersections with water	16
<b>4. Water resources management pre- and post-1994</b>	<b>18</b>
4.1 The pre-1994 legacy	18
4.2 The current situation – unequal distribution	19
4.3 Continuity and change post-1994	22
4.4 Water allocation reform	25
<b>5. Conclusions and recommendations</b>	<b>30</b>
5.1 A vision of agrarian reform	30
5.2 An institutional home	30
5.3 Pilot implementation of promising approaches at scale	31
5.4 Regulation	31
<b>References</b>	<b>32</b>
<b>List of tables and figures</b>	<b>34</b>
<b>List of acronyms and abbreviations</b>	<b>34</b>

## **1. Scope: land and water in agrarian reform**

This paper focuses on the development of a coherent vision of rural redress and transformation, with effective institutional mechanisms for linking water management to agriculture, land, finance and other rural sectors. It provides the opportunity to explore a more encompassing vision of agrarian reform and its implications for the transformation of service delivery through focusing on the two main assets in agrarian reform: land and water.

Past efforts at better integration of land reform, agriculture, agrarian reform and water resources management (WRM), including water allocation reform, have been ad hoc, fragmented and hardly successful. Development services (e.g. land reform, agriculture, irrigation, domestic water supplies, WRM, financing, health, social grants, etc.) have all too often been structured from the top down and operated parallel with each other. As the lowest level of the development state, local government has the mandate to implement integrated development planning. However, in this situation, it can only reproduce such fragmentation.

Recognising this problem, the manifesto of the African National Congress (ANC, 2009) expresses its commitment to “a comprehensive and clear rural development strategy linked to land and agrarian reform”. This includes ensuring “a much stronger link between land and agrarian reform programmes and water resource allocation, and [ensuring] that the best quality of water resources reaches all our people, especially the poor”.

The paper will proceed as follows:

- Section 2 presents the links between poverty, agriculture and rural development.
- Section 3 analyses the challenges inherited from the former political economy of land and agriculture, progress in land reform, and the intersections with water.
- Section 4 discusses the developmental and regulatory role of the pre- and post-1994 governments in WRM. It focuses on water allocation reform and assesses opportunities for a stronger role in an encompassing agrarian reform.
- Section 5 – conclusions are drawn and recommendations formulated for a joint way forward in which land, WRM and other services can contribute more fruitfully to an overarching agrarian reform.

The overall goal of agrarian reform certainly requires further conceptualisation and grounding. Broadly, it refers to transforming the rural economy nationwide, with the primary aim of reducing rural poverty through growth. It is true that the rural economy is strongly linked to urban economies through its migrant workforce, and through informal production that feeds into the urban economies. Yet, agriculture and its rural-based forward and backward linkages remain the most important source of on-site wealth creation for the majority of South Africa’s citizens.

The core component of agrarian reform is more equitable access to the assets of land, water, markets, capital, technologies and skills. It seeks to overcome the territorial boundaries created during apartheid and, to some extent, the urban-rural divides. Agrarian reform creates new opportunities for unleashing the productive potential of the majority of people through micro- and small-scale<sup>1</sup> rural and peri-urban farming and, for a growing black minority, through medium and large-scale farming.

Agrarian reform can help to overcome the extreme dualism in South Africa's agricultural sector. The portions of land held by black smallholders, who are largely subsistence farmers, are juxtaposed with a relatively small number of large, highly capitalised and mostly white-owned commercial (large-scale) farms. At the end of the apartheid era, approximately 60 000 white commercial farmers occupied about 86 million hectares (ha) of land, while 14.5 million ha were accessed by around 2 million black farming households, or small-scale farmers, in the ex-Bantustans.

There is no consensus on what agrarian reform in the country can, or should, accomplish. The Department of Agriculture's chief strategic plan, which serves as the government's primary official statement on agrarian reform, does not satisfactorily address the need for specific measures to support<sup>3</sup> smallholders. Rather, it speaks broadly of allowing and promoting "the entire spectrum of enterprises and farm sizes" (DoA, 2001:8). In particular, it focuses on the theme of ensuring "more equitable access" in the sector. One interpretation of the strategic plan is that it promotes racial equality in an agricultural sector whose structure is to remain effectively unchanged.

Arguably, the other extreme was articulated by the original Framework Document of the Reconstruction and Development Programme (RDP). It called for "a dramatic land reform programme to transfer land from the inefficient, debt-ridden, ecologically damaging and white-dominated large farm sector to all those who wish to produce incomes through farming in a more sustainable agricultural system" (ANC, 1994: Section 4.3.8).

While it is not the objective of this paper to propose the "correct" vision for agrarian reform, it is worth noting that there are elements of truth in both extremes, which indeed can be combined. There is clearly scope for fostering a larger and more successful black commercial farming class, as part of a broader vision of black economic empowerment (BEE). For millions of black people, agriculture essentially consists of homestead cultivation and gardening as a means to enhance food security at the household level, however minimally. It is clear that there is a dire need to assist people in ensuring greater efficiency in this respect.

Possibly the most uncertain aspect of agrarian reform at this point is the "missing middle", or black medium-scale commercial smallholders. In current debates, the potential for this sector to become larger and more vibrant tends to be characterised by extremes. These range from the conviction

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<sup>1</sup> The terms "large-scale" and "small-scale" underline that small-scale farmers would be as market oriented as other farmers, had such markets existed for them.

that small-scale farmers can never compete in an environment dominated by ever-larger, more sophisticated farm enterprises, to the view that small farms are inherently more efficient and thus both competitive and socially desirable.

There are differences and similarities between the management and reform of land and water resources respectively. These relate to the dual role of WRM in its developmental and regulatory functions. In the case of water, the need for infrastructure development to obtain access to the resource is unique and requires the developmental role of WRM. In this role, the infrastructure needed to abstract water from its source and transport it to black farmers can be provided. This would improve their access to water, thus enabling and enhancing the productivity of their cropping, horticulture, livestock, fisheries and rural enterprises.

As water services are still grossly underdeveloped among most rural and peri-urban black farmers (the “have-nots”), development of new infrastructure is imperative. Rehabilitation of existing communal facilities is especially important for the small-scale irrigation schemes that were bureaucratically managed by the government or corporations in the ex-Bantustans. Many collapsed or functioned sub-optimally after the apartheid structures were dismantled.

The range of infrastructure facilities and their potential application in agrarian reform is wide. Black farmers have their own individual technologies, such as wells, groundwater pumping and rainwater harvesting, or use communal irrigation systems, village reservoirs and cattle dams. Little is known about these private initiatives, but studies indicate a greater dynamism than is often assumed (Tapela, 2008).

A particular application is the unplanned use of domestic supplies for small-scale productive activities, especially at and around homesteads. In other contexts some smallholder schemes, particularly cultivating sugarcane, maybe financed by the state or a corporation. Irrigated farms are increasingly being redistributed or restituted. Black farmers can also be integrated into former white irrigation schemes, either planned or spontaneously. Lastly, there are “paper” allocations of water as one of the inputs into schemes that are yet to be designed and implemented.

In all such cases, there are clear relationships between water and land tenure, which, in their turn, are sometimes related to gender. The productivity of land and water further depends on multi-sectoral issues, such as the use of fertilisers, pest management, credit, mechanisation, veterinary services, markets, and so on.

A second difference between land and water management and reform is that, in some places in South Africa, the water frontiers have not yet been reached, unlike the land frontiers. In many basins, uncommitted water resources are still available. Here, unlike land reform, the remaining water can still be allocated directly in support of agrarian reform. In stressed basins, however, a similar reallocation of water from the “haves” to the “have-nots” already needs to be implemented in the short term.

Regulation of water resources can support agrarian reform by ensuring that these resources are made available in a fair and sustainable manner. Among the “haves” in any basin, stringent water conservation, demand management and pollution control are needed to keep consumption within the limits of available water (the water frontiers), as well as to mitigate the impact of reallocation where a reduction in use by the “haves” is required.

There are immediate links between the current land reform and water: firstly, in the case of irrigated land that is restituted and redistributed and, secondly, in the case of water as one aspect of land tenure reform in ex-Bantustans. Agrarian reform, however, goes further and holistically regards land and water resources in South Africa as assets for rural redress, higher productivity and improved wellbeing.

It is true that WRM can, and should, improve wealth creation within given land tenure arrangements, for example, on homesteads or existing plots. Similarly, dry land tenure and productivity can be improved with only limited attention given to WRM. Integrated agrarian reform, however, opens up important new synergies by considering aspects such as productivity, markets and finance to be relevant in any situation.

## 2. Poverty, agriculture and rural development

The goal of agrarian reform is to reduce poverty through promoting agricultural growth, institutional change and redistribution. It has long been understood that a disproportionate share of rural dwellers are poor and that poverty is concentrated in rural areas. This was strongly evident, for example, from the 1995 Income and Expenditure Survey (IES), which revealed that about 71% of rural dwellers were poor, versus 28% of urban dwellers (Stats SA, 1996). In 1995, rural dwellers accounted for almost half of the national population. Of all poor people nationally, about 72% resided in rural areas (May et al., 2000:30).

Since that period, certain countervailing developments have had a bearing on rural poverty. On the one hand, the loss of income streams associated with the loss of formal jobs hit rural areas with particular force, not least through the downsizing of the labour force on commercial farms and in the mining industry. On the other hand, significant rural-to-urban migration has brought about a “relocation” of poverty. Whereas data from the 1996 population census suggested that 62% of the poor were rural dwellers, in the 2001 census this figure had declined to 56% (Leibbrandt et al., 2006:114).<sup>2</sup>

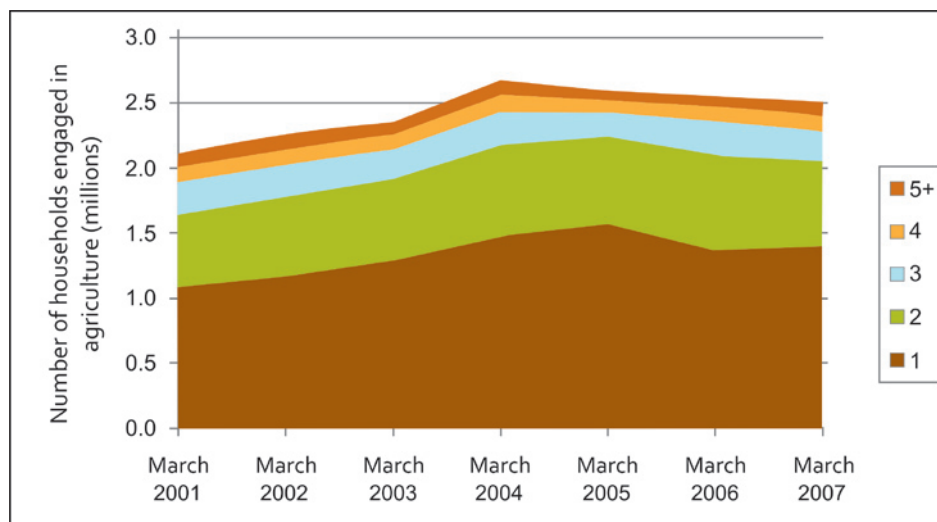
In recent years, however, the development leading to the greatest amelioration of rural poverty has been the improved reach of social grants. Bhorat & Van der Westhuizen (2008), for instance, show that between 1999 and 2005, incomes of people in the lowest earning deciles (1 and 2) rose significantly, due to grants. While the authors did not indicate that this situation pertained specifically to rural

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<sup>2</sup> Figures for the share of poor people who were rural dwellers differ significantly between the 1996 population census and the 1995 IES. This underscores the non-comparability of different data sets, as well as the application of different methodologies and poverty lines.

areas, one can surmise that it must have, given that rural dwellers account for almost two-thirds of those populating the low income deciles 1 and 2.

The Labour Force Survey (LFS) offers a more complete picture of the number of households and individuals involved in agriculture (Stats SA, 2008b). Figure 1 shows trends in the numbers of black households engaged in agricultural activities between 2001 and 2007. The legend indicates households in which different numbers of members contribute to such activities.<sup>3</sup>



**Figure 1: Trends in black households' involvement in agriculture, by numbers of members contributing to agricultural activities**

Source: Stats SA, 2008b; Aliber, own calculations

The noticeable increase in the total number of households up to 2004 interestingly coincides with the period showing the most rapid improvement in the access to social grants, as well as an earlier episode of rapid food price inflation. Although this could be coincidental, other studies suggest that social grant income has the effect of facilitating households' agricultural activities (e.g. cash is available to buy inputs such as seed) (HSRC, 2008).

It could be asked whether the figure of 2.5 million households is significant, as it represents only about 23% of all black households. In 2004, however, the last year for which the LFS included a means of distinguishing rural from urban households, 85% of black people engaged in agriculture were rural dwellers, and these rural dwellers represented 45% of all rural dwellers.

The fact that so many black households engage in agriculture does not necessarily mean that agriculture is the cornerstone of their income; indeed, there is strong evidence to the contrary. Again drawing on the LFS, Figure 2 shows the breakdown of black households involved in agriculture according to the main reason for practising farming.

<sup>3</sup> The relevant question from the LFS questionnaire reads "Did ..... grow or help to grow any produce, e.g. maize or other crops, vegetables or fruit, or keep, or help to keep, any stock, e.g. cattle, sheep, goats, horses, even chickens, for sale or for household use during the last 12 months?"



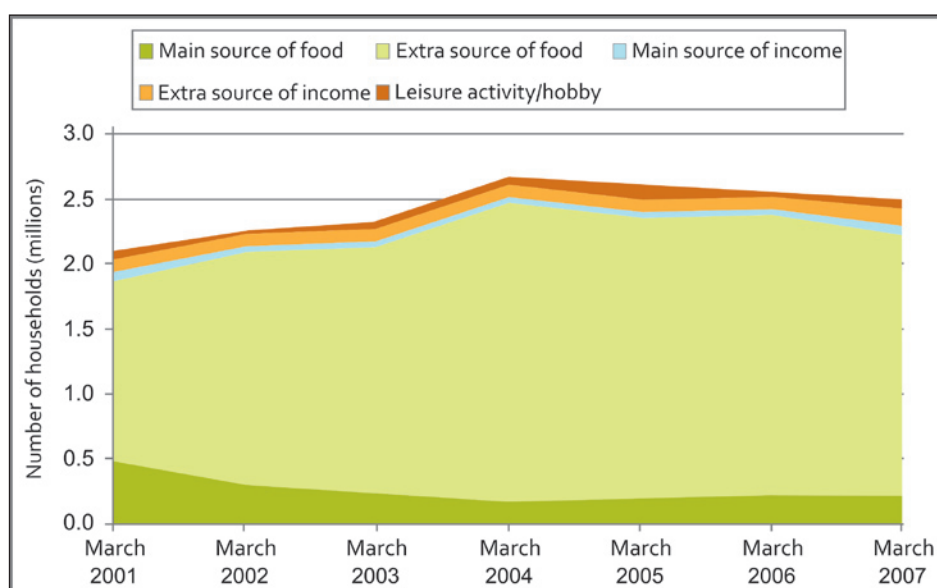


Figure 2: Trends in black households' involvement in agriculture, by main reason given

Source: Stats SA, 2008b; Aliber, own calculations

The overwhelming majority of those involved in agriculture do so to procure an extra source of food, whereas for a smaller number (an average of 262 000 over the period) it is their main source of food. Smaller numbers of people involved in agriculture (an average of about 93 000) fall into the category of "extra source of income", while relatively few (about 50 000) gave their reason as "main source of income". Moreover, growth in the number of households involved in agriculture over this period accrued almost entirely to the category of "extra source of food", whereas farming for income purposes remained static.

Up to 2004, there is a noticeable drop in the number of black households for whom own agriculture serves as a main source of food. Other studies using LFS data indicate that these black households are by far the poorest among those involved in agriculture. A decline in this number over time might suggest that at least some desperately poor households are becoming better off and less dependent on farming (Aliber et al., 2005).

Survey evidence of the share of household income accruing to agriculture versus other sources is scarce. For reasons that are unclear, the IESs for 2000 and 2005/06 failed to pick up the majority of agriculturally active black households (Stats SA, 2008a,b). These data sets would therefore be unsuitable for use towards such an end without considerable qualification. More credible smaller studies, however, tend to agree that cash income from agriculture is minimal.

Current evidence is most unclear about the significance of agriculture for own consumption, which some analysts seek to measure as the "imputed income" from subsistence production. Despite the shortcomings of the IESs, Palmer & Sender (2006) rightly suggest that the significance of production for own consumption would be appreciated best by measuring the difference in per capita expenditure

between farming and non-farming households. However, given that the IES of 2005/06 was particularly inadequate in distinguishing farming from non-farming households, one would have to distinguish broadly between rural and urban households. This is depicted in Figure 3.

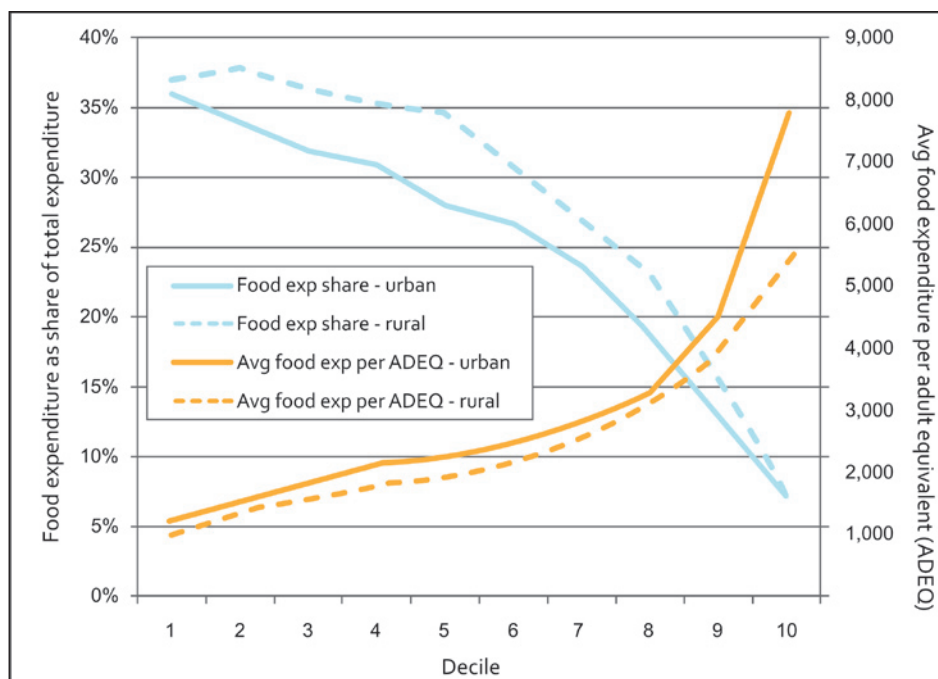


Figure 3: Food expenditure share and food expenditure per adult equivalent, urban versus rural

Even though rural households devote a larger share of their expenditure to food relative to urban households, they spend less per decile on food per capita, here measured in terms of adult equivalents. One possibility is that this situation reflects relatively pervasive malnutrition among rural households. However, as the gap between the per capita food expenditure of rural and urban households holds for higher deciles as well, malnutrition cannot be the main factor. Rather, self-provisioning through small-scale agriculture should account for most, or all, of the gap.

Among the poorest half of households – those whose monthly household income is less than R2000 – rural households spend about 15% less on food per capita than their urban counterparts. If one can truly ascribe this to small-scale agricultural production, the gross imputed value is about R2 billion, or R700 per household. Given that these figures emanate from less than half of all black rural households and, of these, pertain to those who are poorest, this observation is not insignificant.

Finally, it is worth bearing in mind who these small-scale farmers are. A stereotype that has developed over the years is that black subsistence producers tend to be women, while the smaller number of commercially oriented farmers tends to be men. According to the LFS for September 2006 (Stats SA, 2008b), this stereotype is partially but not fully accurate. Women make up 61% of all those involved

in farming. In respect of the main reasons given in the survey, they are on a par with, or slightly more numerous than men. The exception is where agricultural activities provide an extra source of food, in which case women exceed men by two-thirds (Figure 4).

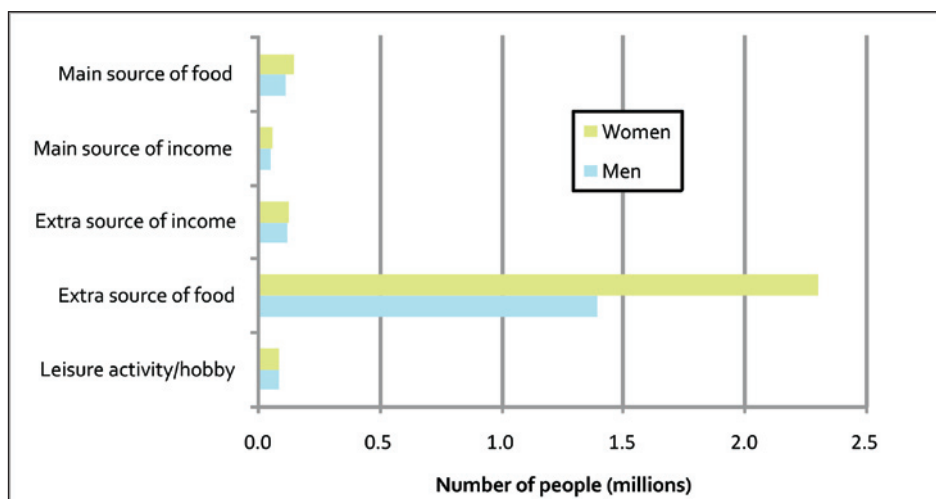


Figure 4: Gender of black smallholders, 2006

### 3. Land and agriculture pre- and post-1994

#### 3.1 The pre-1994 legacy

The history of the dualism of South Africa’s agricultural sector is well known. This legacy not only influenced post-1994 developments, but various elements also continued, contributing, among other things, to the disappointing performance of both land and water reform up to the present. This dualism has its historical roots in land dispossession processes and labour control policies.

De facto land dispossession began shortly after the arrival of European settlers in South Africa in the 17th century. Up to and including the 19th century, it gathered momentum, to the point of generating organised but ultimately futile armed resistance. From the early 20th century, land dispossession was afforded a legal veneer through the passing of the Natives Land Act (Union of South Africa, 1913) and the consequent establishment of Bantustans.

Conspicuously gathering force from the early 20th century, and concurrent with this process, was the gradual development of government-sponsored schemes for supporting the development of white farmers. This was done, for example, through the introduction of various land banks, investment in irrigation schemes and marketing infrastructure, the provision of well-capacitated extension services, and the promotion of mechanisation.

None of these support mechanisms were made available to black farmers. Under the ambit of apartheid's separate development policy, some state investment was directed at Bantustan-based extension services, smallholder irrigation schemes and, to some extent, state-run farms. The emergence of a class of progressive black farmers, who were catering to the food needs of the emerging towns and mines, was largely aborted through the Natives Land Act. Apart from designating "native reserves", the Act forbade share-tenancy outside of the reserves. As a result, black peasants could not take advantage of their proximity to markets.

Labour and settlement policies were introduced from the early 20th century, in an attempt to maintain a supply of inexpensive black labour for the mines and the emerging industrial sector. The policies also ensured that labour migration would be controlled, so as to minimise the number of black people establishing homes within or near urban centres. The impact on the white commercial farming sector was mixed. On the one hand, the demand for labour tended to make it more difficult for white farmers to find and keep workers, given the relatively poor wages on offer. On the other hand, the growth of an urban workforce created a market that commercial farmers were pleased to cater to.

The development of the white commercial farming sector over the course of the 20th century largely mirrors that of settler countries elsewhere (e.g. Argentina, Australia, Chile and North America), which were characterised by modernising economies and land-extensive agricultural endowments. From a peak of about 117 000 farm units in 1950, there were approximately 46 000 in 2002, which means that 60% of all farming units "disappeared" over the past 50 years, and that at a remarkably steady pace. Of course, the land of these units did not disappear in a literal sense, but rather was subsumed within other units, as the average size of farming units increased in virtually the exact proportion to the decline in the number of units.

The process of land consolidation was driven by two complementary factors. First, technological change allowed for a single farm family to extend its operational reach to an ever-greater number of hectares. This process was actively promoted by the government on the grounds of decreasing the sector's reliance on black labour.<sup>4</sup> Second, the returns to agriculture relative to other economic options tended to diminish as the economy grew and diversified. Thus, notwithstanding the sometimes copious government support to the agricultural sector, it has been experiencing a continuous "winnowing process" since 1950.

The irony of agricultural support is this: although the success of the white commercial farming sector is often ascribed to government support, the bulk of the support made available has typically been to help farmers in trouble (Kirsten et al., 2007). Yet, as the numbers plainly show, this has at best merely slowed down a well-established trend.

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<sup>4</sup> For example, the second report of the Commission of Inquiry into Agriculture of 1973 (the Du Plessis Commission) indicated that "white agriculture must [...] gradually be made less dependent on non-white labour and eventually be released from the need of it as far as possible" (quoted in Lipton, 1975:13).

### 3.2 Continuity and change post-1994

Since 1994, the post-apartheid government has ushered in wide-ranging changes in agricultural policy. Indeed, some of the most significant of these began in the late 1980s and early 1990s, when the single-channel commodity marketing schemes were dismantled and various other types of support to commercial farmers were tapered off.<sup>5</sup> As a result, commercial farmers were exposed to additional risk and, for some subsectors, the cost-price squeeze was aggravated.

The grounds for these changes were ostensibly to compel the sector to be more competitive, as expressed, for example, in both the 1984 and 1995 White Papers on Agriculture (DAFF, 1984, 1995). There nevertheless remains debate as to whether the withdrawal of trade protection and subsidy supports was perhaps not too rapid or ill timed. For example, the wisdom of removing marketing boards just before land reform beneficiaries and other emerging farmers had an opportunity to take advantage of them has frequently been questioned. Indeed, a challenge to projects seeking to bring new entrants into irrigated agriculture has been the high level of pricing risk that they would face. The Koekedouw scheme in the Western Cape, for instance, failed in part because of the decline in deciduous fruit prices.

Moreover, while the leap into free markets could be expected to have the effect of accelerating the winnowing-out process through which weaker farmers leave the sector, this has not been observed. Rather, the decline in numbers of commercial farming units has more or less followed the established trend.

While casual and seasonal farm employment has remained fairly steady over the past two decades, regular farm employment has been experiencing a continued downward trend since 1994. This had been evident from at least the 1950s, although currently seemingly at an accelerated pace. Possible causes are difficult to identify, but are likely to include the discontinuation of labour tenancy; the inclusion of agriculture in newly introduced legislation regulating employment and working conditions; the introduction of the minimum wage in agriculture; and land owners' general misgivings about the threat posed by land and tenure reform, including the Extension of Security of Tenure Act (DLA, 1997a), which pertains particularly to farm dwellers.

In terms of agriculture within ex-Bantustans, a feature that stands out is the closure of the agricultural development corporations and, in conjunction with this, the effective eschewing of responsibility for a large number of parastatal-run farms and schemes that these corporations supported. In many places, this led to continuing deterioration in the irrigation and other infrastructure on which these schemes depended.

In addition, as the ex-Bantustans ceased to be administrative units with their own bureaucracies, there was an amalgamation of agricultural administrations, largely by province. Large numbers of

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<sup>5</sup> Having said this, the "big bang" in terms of support to the commercial farming sector was a the R3–R4 billion government-funded debt write-off scheme of 1992–93, which sought to diminish the damage to the sector resulting from two consecutive years of severe drought.

extension officers were inherited from the ex-Bantustan agricultural departments and were identified as supernumeraries. Rather than formulating a plan to enhance their skills and ability to function effectively, the overall size of the extension services continued to decline from the already inadequate numbers. In 2005, for example, the national corps of public extension staff stood at approximately 2 800, which enabled a ratio of extension staff to commercial farmers of 1:21, and of extension staff to subsistence farmers of 1:857 (DoA, 2005).<sup>6</sup>

In recent years, the government has introduced a number of initiatives to improve the performance of “emerging agriculture”. These include the Comprehensive Agricultural Support Programme (CASP); the Micro-Agricultural Finance Initiative of South Africa (MAFISA), which is a rural-oriented microcredit scheme; the somewhat mysterious Ilima/Letsema Campaign;<sup>7</sup> Landcare; and AgriBEE. In the offing are increased numbers of extension officers, as well as a potential fertiliser subsidy. The latter would be possible thanks to underspending in the financial commitments made to MAFISA. Overall, therefore, various initiatives are ongoing, but to date it is difficult to discern any significant impact on the ground.

### **3.3 Land reform**

A cornerstone of the land and agricultural transformation has been the national land reform programme. This was foreseen in the ANC’s RDP Framework Document of 1994. It was later enshrined in the new Constitution of 1996 and then articulated in some detail in the 1997 White Paper on South African Land Policy (DLA, 1997b). Despite all this, and despite the fact that actual land transfers began from 1995 in terms of the new policy, there remains great uncertainty as to what land reform can potentially accomplish (and how), especially in terms of livelihoods and broader economic impacts.

From at least as far back as the RDP, the concept of land reform was a tri-faceted initiative involving restitution, redistribution and tenure reform. Redistribution and restitution together were meant to bring about the transfer of 30% of commercial farmland from white to black ownership. Land reform was to serve as the “engine of rural development”, seemingly drawing on the (contested) principle that small farms are more efficient and labour intensive than large farms, and that redirecting income streams to the poor would result in superior consumption linkages to the local economy.

Accounts of reasons for the variable performances of land reform include poor planning, lack of skills, absence of adequate post-transfer support, and an excessive focus on commercial farming systems. In particular, in the case of redistribution, excessively small grants had the effect of compelling applicants to form groups large enough in order to pool adequate resources for purchasing large farms.

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6 In fact, the ratio for subsistence farmers is far worse, if calculations are based on available LFS data, which the authors of the DoA report did not.

7 A recent document states: “This campaign aims to bring about an increase in production by unlocking the potential of currently ‘dead’ land and other assets, in particular in communal areas” (DoA, 2008).

Frustrated at what it perceives to be failure on the part of the Department of Agriculture (DoA) to provide adequate extension support, the Department of Land Affairs (DLA) has lately toyed with the possibility of providing its own support programmes. The general pattern of redistribution policy development over the past decade or so has been to observe that beneficiaries are not succeeding, then to adjust policy in order to increase the resources available to applicants (thereby reducing group size and increasing working capital) and then to repeat the process.

In 2000, for example, the redistribution grant was increased from R16 000 per household to a range from R20 000 to R100 000 per adult individual. In 2008, the grant range was further increased to R111 000 to R430 000 per adult individual. Ostensibly, the latter increase was meant to adjust for land price inflation that had transpired over this period; in reality, however, it vastly outstripped such inflation.

More recently, new amendments to the Provision of Land and Assistance Act (DLA, 1993) were signed into law. These stipulations allow the DLA to purchase going concerns, as well as moveable farm assets, on behalf of beneficiaries. For restitution, the purchase price is not related to some formula for determining the extent of applicants' grant eligibility; however, it does have to be shown to be reasonable by means of a professional valuation. The relevant adjustments for restitution are rather in respect of the introduction of two grants meant to ease claimants' entry into commercial farming.

Various initiatives have been attempted to address the frequent inadequacy of beneficiaries' management capacity. These include identifying mentors, hiring managers and engineering strategic partnerships. By and large, implementation has not remained true to the original idea of subdividing large farms into smaller units, nor has there been any conscious attempt to encourage technologies that are more labour intensive.

To date, about 5-6% of commercial farmland has been transferred to around 200 000 households. The number of official beneficiaries is, however, a poor indication of the number of beneficiaries actually deriving some kind of material benefit from their acquired land. Up to half of the projects have collapsed completely, while many others have downsized from their original official figure.

It is widely recognised that the performance of land reform projects is generally poor, not least in the sense that many of them have failed or collapsed. There nevertheless remains acute pressure to accelerate land reform, which suggests a clash between political imperative and economic prudence. To some extent, the political pressure appears to be due to the (arbitrarily chosen) target of 30% not having been met yet, although the timeframe has been extended to 2014. What is less clear is whether the political pressure to accelerate delivery reflects a frustrated land demand on the ground.<sup>8</sup>

Another question over which there is much debate is why the pace of redistribution is slower than anticipated. A common view is that the willing buyer-willing seller approach is the main cause of the

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<sup>8</sup> If there is such land demand, there is little evidence of it being articulated in a manner that galvanises a political response. For instance, the Landless People's Movement commands little public attention, while there are many organised and spontaneous protests against poor service delivery.

problem. Land owners determine what land is available for purchase and because they charge market prices, which have been rising, the government's allocated budget is quickly depleted.

A counterargument is that the problem is not so much the high prices for land, but the paltry budget allocated for land purchases. For instance, the 2007/08 budgets for restitution and redistribution grants together came to only 0.7% of the total government budget, which is only marginally higher than in 1995. As to why the land budget is so small in the first place, a possible explanation is that the DLA has been unable to demonstrate to Treasury that its spending is efficacious enough to warrant a larger allocation.

Overall, progress made with restitution is commendable, yet difficult to determine accurately. For example, the government is still researching a number of outstanding claims to determine their legitimacy and extent. Project performance issues associated with restitution are also troublesome.

In terms of tenure reform, the main objective has been to replace the various laws that previously governed tenure systems in ex-Bantustan areas. The new legislation would enable de facto land rights holders to register real rights in land, subject to specified community-driven processes and local preferences. So, for example, the Communal Land Rights Act (DLA, 2004) came about after a long and convoluted process of consultation, drafting and redrafting.

Although the Act was signed into law in 2004, it has never been implemented. Four rural communities had launched a Constitutional Court challenge on the grounds that the Act gives too many powers over land to traditional councils dominated by unelected traditional leaders. While this legal stalemate continues, a large share of arable resources (in ex-Bantustan areas, in particular) remains uncultivated. No institutions are accepting responsibility for supporting land rental markets, or for ensuring that livestock owners control the movement of their stock so that would-be croppers have some incentive to plant.

### **3.4 Intersections with water**

In implementing land restitution and redistribution, there initially was little collaboration between the DLA and the Department of Water Affairs and Forestry (DWAF). Riparian water rights were not always completely registered as part of the land entitlement. Also, in a few cases, water rights tied to land under claim were sold, leaving an asset of lesser value. Without readily available registers of land under claim, the DWAF could not easily track this problem. In the late 1990s, however, it introduced a policy that the trading of water rights of land under claim should not be approved.

Further coordination has since been established between the DWAF, the provincial DoA and the provincial government with the signing of a memorandum of understanding on collaboration on land and water reform in the Free State in 2008.



There was more collaboration between the DWAF and the national and provincial DoAs on smallholder irrigation, especially in the early 2000s. Following up on the high-level communication between the two departments for swift, coordinated decision making pre-1994, a Coordinating Committee on Small-scale Irrigation Support (CCSIS) was established in 2001, which functioned until 2006. With the introduction of the Intergovernmental Relations Framework Act (DPLG, 2005), provincial coordination was continued through the Coordinating Committees on Agricultural Water (CCAWs) in the provinces, some of which function well.

Although the CCSIS has stopped functioning at the national level, individuals at lower levels strive to keep coordination going. The DoA's irrigation strategy for the country underlines the need for such revitalised coordination, also at the highest levels. It identifies ten strategies for work on irrigation and also points out the lack of technical irrigation expertise (DoA, 2007).

In 2004, the DoA began addressing the collapse of schemes that had been managed by homeland government parastatals or corporations. It initiated the Revitalisation of Smallholder Irrigation Schemes (RESIS) programme in Limpopo, with similar support given in the Eastern Cape and under the CASP. Starting from a perspective that included small-scale production for subsistence and self-consumption, the DoA soon redirected its attention to marketing and income (Bembridge, 2000; Tlou et al., 2006).

This reflected the DoA's general emphasis on larger-scale commercial agriculture in land reform, AgriBEE and similar approaches. Partnerships and joint ventures are forged between agribusiness, leaders (including chiefs) and small-scale irrigators. Ordinary community members, however, are at a severe disadvantage vis-à-vis chiefs and businesspeople.

Similar trends were found in the RESIS programme in Limpopo. Existing plot holders and cultivators were displaced when all land had to be cleared to construct new, massive high-technological installations. Smaller producers were thus deprived of their source of food, without clarity about future land access (Tapela, 2008). In another case, a strategic partnership with a white farmer generated substantive net benefits, also because the irrigation equipment was subsidised. However, the beneficiaries were a small subgroup within the community, who rejected any reference to production for self-consumption. (The RESIS programme was recently halted because of technical issues concerning the irrigation technology used.)

The DoA, together with staff of the DWAF, is increasingly paying attention to other technologies, such as homestead water harvesting and sustainable cultivation of wetlands. However, neither department pays much attention to people's own initiatives beyond smallholder irrigation schemes and community gardens. There is little appreciation for self-initiated groundwater irrigation, river abstractions, small farm ponds, cattle dams, multipurpose village reservoirs, or water vendors. Research has revealed success cases, such as the Msinga farmers in KwaZulu-Natal (Tapela et al., 2008) and the informal water economies in Sekororo in Limpopo.

A matter that has recently received more attention in the water sector is the widespread use of domestic water supplies for small-scale productive activities, whether legal or not, as elaborated on in the following section.

## **4. Water resources management pre- and post-1994**

### **4.1 The pre-1994 legacy**

Water was an important production factor in the politico-economic history that led to the agrarian dualism described above, and to the white-dominated, urbanising industrial and services economy. The Irrigation Act (Union of South Africa, 1912) opted for the riparian water rights doctrine. Tying water rights to land ownership, it not only dispossessed black people of 91% of the land resources (later 87%), but also of the related water resources.

This inequity was exacerbated through the highly skewed water development that followed. Throughout the 20th century, the government played a proactive role in this process. It identified opportunities and invested major financial, technical and institutional resources in infrastructure development and the organisation required by collective water management.

In the first half of the century, the government, through the Irrigation Department, focused exclusively on supplying irrigation to white consumers. The objectives were to ensure affordable food security so that the urban and mining wages of white people would be reasonable; to consolidate encroachment in remote rural areas; and to solve the poor white problem in a sustainable manner. Subsidies and very soft loans were provided that covered most, if not all, infrastructure costs and, in the case of the government's water schemes, even the operational costs. The argument of economically viable farming was not heard of until the 1970s.

Up to the 1950s, mines and urban areas ensured their localised water provision through municipalities localised water supply projects, Eskom's hydropower plants, or through water boards, such as Rand Water in Johannesburg. However, the relative expansion of these urban and industrial sectors warranted widening of the government's scope. In 1956, a new Water Act (DWA, 1956) was therefore promulgated by the Department of Water Affairs (DWA) to this end.

While continuing the promotion of irrigated agriculture, as in the prestigious Orange River scheme, the Act also addressed the need to provide highly secure water to fast-growing urban, industrial, energy and services sectors. Chief of these would be the economic hub of the Transvaal (now Gauteng), an elevated area with limited headwaters. The 1970 Commission of Enquiry into Water Matters (DWA, 1970) signalled the growing need for major bulk water infrastructure and inter-basin transfers to the province. It also conceived a new regulatory role, mainly to accommodate water sharing between white-based agriculture and the urbanising economy. The set of measures included the following:

- Allocation of water and financial resources according to highest economic value
- Water pricing to reduce excessive water use by irrigators
- Ending subsidies for white irrigation through, inter alia, irrigation management transfers (budget cuts were the sole reason for these transfers)
- Recognition of the environment, which at the time was the Kruger National Park and St Lucia wetlands, as a water user in its own right. It was determined that such requirements would not exceed 1% of the country's total available water.

The growing regulatory discourse on irrigation for use by white people hardly affected subsidies for irrigation boards and private farmers, though. Moreover, it coincided with the abovementioned agricultural transition in which white citizens found better employment within the urban economy.

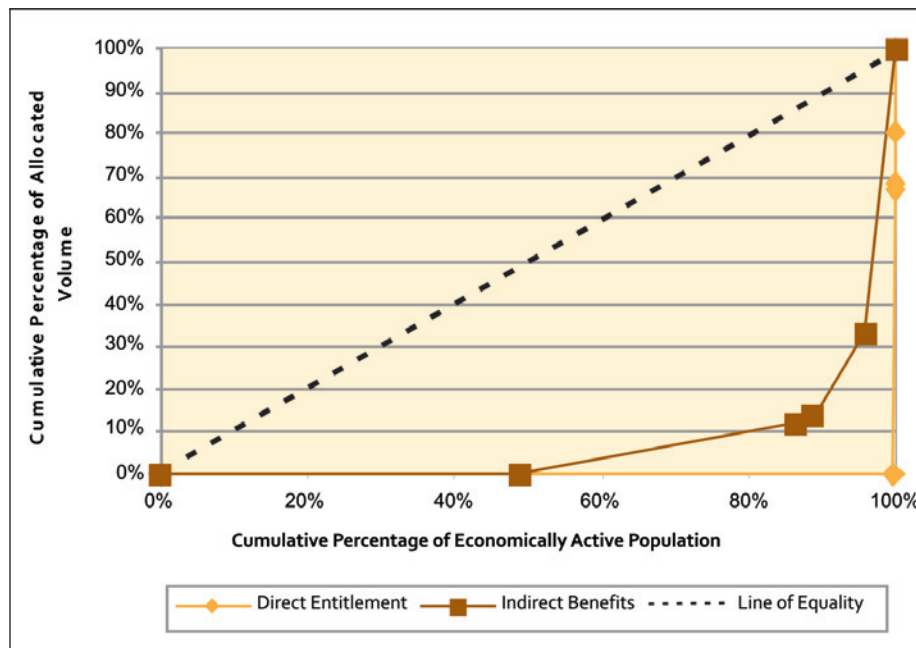
Hence, from the 1970s onwards, the developmental role of the DWA opened up to include centrally managed bulk infrastructure, in particular the Vaal-Usuthu-Tugela-Orange-Crocodile-Olifants systems. Water from the region's highest water tower, Lesotho, was being added. Dam and infrastructure projects elsewhere were also extended in scale to transport water over ever-increasing distances in order to facilitate urbanisation and extended mining activities.

Pollution by coal and mineral mines and urban sewage was signalled, but little action was taken. In this technically complex and sophisticated, but economically viable "white urban water economy", several engineering and consultancy firms arose. The DWA moved towards a developmental role of centralised planning of bulk infrastructure, as well as a regulatory role for dam safety and environmental protection, among other issues.

Throughout the 1960s to 1980s, the DWA actively collaborated with the DoA, homeland governments and development corporations with a view to accelerating integrated investments in smallholder irrigation in the ex-Bantustans. With their top-heavy (white) managements, those schemes served to enhance local food security, but were never meant to represent any market competition for white farmers. A change had to be made towards developing water services for an urbanising economy, which competed with white-based agriculture for water and financial resources, and investments in black-based agriculture. The need for this shift was justified in the interests of "the national economy" – a concept that was fiercely contested by the anti-apartheid movement of the time (Van Koppen, 2008).

## 4.2 The current situation - unequal distribution

Recent research has attempted to understand better the distribution of water among South Africans but also, because it is a policy focus, the distribution of the benefits from the use of water. In doing so, it is necessary to understand the legacy of the past. An important measure in this regard is the actual distribution of water resources (Figure 5).



**Figure 5: Distribution of direct benefits through registered use and indirect benefits through employment created through registered water use across the economically active population of South Africa**

Source: Cullis & Van Koppen, 2008

The graph in Figure 5 is based on the DWAF's Water Authorisation and Registration Management System (WARMS) data for 68 500 registered water users in South Africa. These users constitute 0.4% of the economically active population, which includes the unemployed.

This is shown by the right-hand curve, which represents a situation so unequal that it almost follows the axes. For this curve it is assumed that registered uses are the most significant, while the uses of other people could be considered insignificant. Using a Gini coefficient measure (which with total inequality equals 1 and complete equality equals 0), the physical distribution curve has a Gini coefficient of 0.997. A study on the Olifants basin, which included water use by non-registered rural users and estimated their uses, yielded a Gini coefficient of 0.96.

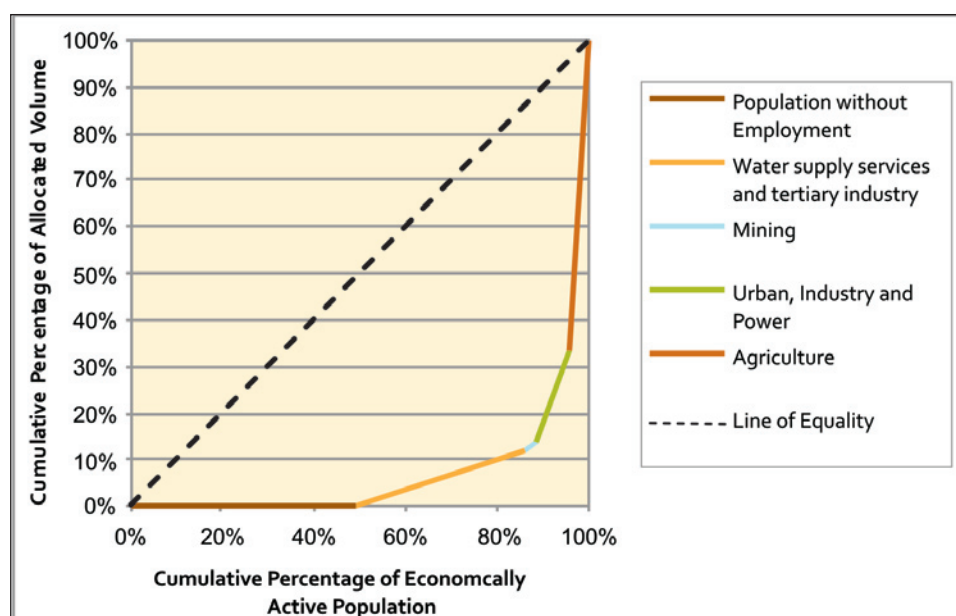
The left-hand curve assesses the sharing of benefits from water use by registered water users, measured in terms of employment creation. Volumes of water use in a sector are matched with employment created for that sector (as in Table 1). In the absence of more detailed data, two assumptions are made. First, the benefits of water in a sector are equally shared (e.g. between sweeper and manager); and, second, the value of employment created is the same across sectors (e.g. employment in platinum mining has the same benefits as in agriculture). Given these rather unrealistic assumptions, the real curve depicting the sharing of benefits would lie between these two curves.

**Table 1: Number of people employed in each broad economic sector for every million cubic metre of registered water use in that sector**

Province	Large-scale agriculture	Mining	Urban, industry and power	Water supply services and tertiary industry
Eastern Cape	39	5 375	18 358	1 345
Free State	46	263	176	867
Gauteng	219	676	285	46 868
KwaZulu-Natal	103	1 177	1 774	1 552
Limpopo	88	1 016	2 069	5 323
Mpumalanga	49	2 616	106	1 865
Northern Cape	26	282	221	2 206
North-West	73	5 941	357	6 810
Western Cape	75	5 106	460	14 306
South Africa	65	1 336	373	3 214

Source: Cullis & Van Koppen, 2008

The left-hand curve is elaborated on in Figure 6. The lesser slope of water supply services and tertiary industry indicates that more employment is created per volume of water used in these sectors. The steep slope of agriculture shows the opposite (with “agriculture” referring to commercial agriculture), where the limited job creation is related to the high levels of mechanisation. Job figures for more labour-intensive, small-scale agriculture would show that a very different picture could emerge under different circumstances, but such data does not exist.



**Figure 6: Contribution from water use sectors to the distribution of indirect benefits of registered water use through employment in South Africa**

Source: Cullis & Van Koppen, 2008

In both cases, half of the economically active population – the unemployed – does not benefit indirectly from registered water uses. For this group, the question is whether to ensure more trickledown benefits from registered uses (such as welfare payments funded by tax revenues), or to improve their access to water directly. Most unemployment is found in rural and peri-urban areas, where improved access to water for agriculture and small-scale enterprise could increase productivity and improve diversified livelihoods. This is an important entry point for agrarian reform.

### **4.3 Continuity and change post-1994**

#### **4.3.1 Bulk water for the urban economy or expanded supply for small enterprises**

As in agriculture, post-1994 developments in WRM show both continuity and change, with important lessons for ways in which to contribute to rural redress (Van Koppen, 2008).

The agenda of the 1970s was continued, as water services for the urbanising economy and energy and mining sectors were further developed and expanded. In its developmental role, the DWAF, funded by Treasury and, to some extent, by commercial bankers, undertook major expansions of large-scale bulk supplies to Gauteng and adjacent coal-fired power plants. The Lesotho Highlands project and various major pipeline projects were taken forward, while water supplies were extended to other expanding metropolises and mining activities elsewhere.

Transfer of these water services to the National Water Resource Infrastructure Agency (NWRIA), a parastatal, is underway. The expansion of bulk supplies, with the concomitant demand for engineering expertise, is accompanied by a gradual exodus of government engineers and other government staff to consultancy firms.

While payment of the full cost of water services is appropriate for those who can afford it, the increasingly higher costs of water development, compared with the past, imply a need for “social components” to be grafted into expensive water developments to benefit low income households.

The role of the new catchment management agencies (CMAs) in this regard has remained unclear, also their developmental role in bulk water supply and rural water services. In some processes to establish CMAs, innovative small-scale projects for the peri-urban and rural poor were undertaken, in particular by non-governmental organisations (NGOs) or donor projects, such as the integrated water resources management (IWRM) project funded by the Danish International Development Agency (Danida). As only the Inkomati CMA is functioning and few others are being started, any potential role of CMAs in agrarian reform remains unclear as well.

An important social component of the DWAF’s developmental role is the provision of domestic water to all. (The responsibility for domestic water provision was formally handed over to local government in 2006.) Bulk supplies to the urbanising areas and their surrounding townships include domestic

water supplies, of which 25 litres per capita daily (lpcd) are free of charge. In rural areas, there are also major efforts to provide water to all, largely through bulk water supplies of potable water. However, in remote areas with lesser population densities, local, smaller-scale alternatives that are better suited to people's current practices are rarely considered.

Moreover, in centralised water provision, all water should be of potable quality – a standard that is difficult to achieve everywhere. Alternatives for safeguarding the quality of 5 lpcd for drinking purposes include roof water harvesting and point-of-use treatment of water through filtration or chemicals. These approaches are gaining wide acceptance elsewhere in the developing world, but have received little attention as yet in South Africa.

Debates on improving the service levels of domestic water supplies are ongoing. It is increasingly realised that people with diversified and at least partially agriculture-based livelihoods will use any water source available for productive purposes as well, whether legal or illegal. This presents an emerging opportunity for recognising and including productive water uses in domestic services.

The Water Research Commission (WRC) conducted a study among poor households across the country's urban and rural areas earning less than R800 a month. It found that people used an average of 62 lpcd from piped water supplies. Half of them used water for productive activities, such as watering livestock, gardening, growing maize and trees, and pursuing small-scale enterprise. The income derived from these uses was, on average, a quarter of their monthly income (Main & Naidoo, 2008). In 2006, the DWAF compiled guidelines for such "multiple-use water services" (DWAF, 2006a).

A methodology for including needs assessment and the prioritisation of providing water for multiple uses from multiple sources in the Integrated Development Plan (IDP) was pilot-tested in Bushbuckridge with the NGO, the Association for Water and Rural Development (AWARD). The recommendation is that, instead of branding de facto productive uses as illegal, the livelihood benefits that are already being realised should be recognised and planned for in future systems.

To conclude on the DWAF's developmental role in bulk infrastructure development and management, the expanding and less race-segregated middle class in South Africa is benefiting from the bulk supplies to the urban economies. Historically disadvantaged individuals (HDIs) in peri-urban areas and the poor in formal or informal urban economies are searching for trickledown jobs via these registered users and direct water services. In both urban and rural areas, however, water service levels are currently confined to 25 lpcd. Planning for higher service levels of 50-100 lpcd would allow small-scale productive uses to a far greater extent.

#### 4.3.2 Redress in commercial irrigation

There is both continuity and change in regard to large-scale, commercial irrigation. The call in the 1970s to end all subsidies is increasingly being heeded. Subsidisation of, or state guarantees for commercial loans to, white-based irrigation is rare and only given on condition that HDIs be included

in the benefits. For example, the state guarantee for a commercial loan by the Blyde River irrigators in 1998 was given on condition that the new pipe would transport water sufficient for 800ha of land for HDIs. Until now, the DWAF's guarantee for, and payment of, that part of the pipe has benefited white farmers only. However, an unexpected land claim led to land being reallocated and the beneficiaries are now starting to claim part of the water reserved (Hollingworth, 2008).

The DWAF continued with some envisaged extensions of existing irrigation schemes for white farmers, and confirmed that water would be available for this purpose. In the Mhlatuse catchment, for instance, an extension was planned for 2 000 ha of sugarcane. In the Orange Water Management Area (WMA), water has been set aside for 12 000 ha since the mid-1990s. However, as the best sites have already been taken, these extensions are complex and relatively expensive. Also, most existing technologies are designed for economies of scale at large farms.

The expectation that scheme financiers, developers and farmers would swiftly come forward to undertake such expansions appeared too optimistic. A major problem is the fragmentation of support by the various agencies. Several schemes of a few hundred hectares have gradually been put into use until now (Hollingworth, 2008).

As a regulator, the National Water Act (NWA) (DWAF, 1998) prescribes the transformation of white irrigation boards into water user associations (WUAs). The DWAF attempted to steer this slight organisational transformation to ensure greater inclusion of HDIs as well. Such efforts to render the transformation more inclusive were relatively successful where smallholders were upstream or had to pay fees. Elsewhere, new boards ignored the call and nowhere did the new WUAs address HDIs' needs for infrastructure development or rehabilitation (Faysse, 2004).<sup>9</sup>

An innovation in 2004 was the creation of a special subsidy fund for supporting infrastructure development for resource-poor farmers. This financed the rollout of rainwater harvesting tanks in four provinces. Shortly thereafter, however, the fund was temporarily closed down in view of seeking better regulatory procedures.

Lastly, as mentioned, collaboration with the DoA through the CCSIS was dissolved. The DWAF's formal role in integrating black farmers into former white-based irrigation schemes is limited to "setting water aside", although regional individual initiatives continue. Collaboration with the DLA on land reform is only starting.

To conclude on infrastructure development for irrigation and other small-scale water uses in ex-Bantustans and former white rural areas, the net result of post-1994 developments is more likely to be a loss of productive water uses by HDIs. The causes are twofold: first, problems with smallholder irrigation schemes and their revitalisation in the ex-Bantustans and, second, the very slow pace with

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<sup>9</sup> An exception is probably the Hereford case, where the DWAF approved a subsidy of approximately R2.2 million for small-scale farmers' contribution to lining the remaining 17 km of the 44 km-long canal. White farmers in the Hereford Irrigation Board applied for a government-guaranteed bank loan (Tapela, 2005).



which new opportunities elsewhere are being created or taken up. A major reason for the latter is fragmented service delivery in which the DWAF's role risks becoming more passive and regulatory than proactively developmental.

Even so, opportunities exist, and are expanding, for redistributed and restituted irrigated farms, which are considerable in areas such as the Inkomati. Unlocking this potential for collective irrigation requires a more appropriate approach to scheme design than the large-scale, centralised technologies that seldom achieve their potential economies of scale. This is because of the entirely different dynamics of smaller-scale units. In this environment new opportunities for individual technologies, in particular tanks for harvesting rainwater, have also opened up.

Furthermore, evidence suggests the existence of considerably more individual and collective innovations that agencies hardly know about. Major innovation in a holistic perspective of agrarian reform is warranted. At this stage, however, there is hardly a "home" in the DWAF as a developmental agency anymore from which a contribution to agrarian reform could be envisaged. This can only change if policy makers at the highest levels take the initiative.

With the loss of water use by HDIs, the overall impact on water resource quantities has also been negative, except in areas of land reform. The DWAF, in its regulatory role, unfortunately not only risks missing simple ways to set much more water resources aside for agrarian reform, but inequities are even exacerbated, as described in the next section.

#### 4.4 Water allocation reform

When water allocation reform was initiated in the mid-2000s, one of the goals was to implement distributive water reform. Similar to the political commitment of land reform, water would be taken from the "haves" to the "have-nots", wherever needed. However, the reallocation of water is not only tied to redistributed and restituted land, but can profit all rural and urban areas, where HDIs in particular can benefit from improved access to water for multiple uses.

The DWAF's water allocation reform encompasses all legal water allocation and its enforcement. The licensing of expanding bulk supplies, which concerns by far the greatest quantities of new water uptake, is part of any development project. After several years of experience, it is increasingly being realised that the allocation reform in its present form risks exacerbating inequities in water entitlements. It has the potential to become a bottleneck in agrarian reform, instead of a support, for the reasons discussed below.

##### 4.4.1 The ecological reserve

In keeping with the 1970 Commission's recommendations, "the environment", or ecological reserve, received the top priority in water rights. (The human basic needs reserve is for domestic water uses only, and is a negligible portion of a few per cent.) The definition of the environment extended to

all surface water resources. Based on major staff and consultancy inputs, the DWAF estimated that the ecological reserve would require up to a quarter of the nation's water resources in some basins. This legally required estimation kept other water allocations on hold for several years and its actual implementation is now more daunting than ever.

The priority given to the ecological reserve has put new water allocations for agrarian reform, even for the smallest quantities, on the back burner. This is an issue of growing debate, which is unlikely to be resolved by the professional environmental lobby unless senior policy makers reconsider the prioritisation.

#### **4.4.2 Legal complexities**

Water allocation is legally complex and licensing alone risks disadvantaging small-scale users. Although the government as the trustee of the nation's water resources has strong powers to allocate water as it sees appropriate, the new proposed legal system for licensing is biased towards administration-proficient citizens and institutions in South Africa and elsewhere.

In Latin America, for example, colonial permit systems were introduced half a millennium ago to dispossess prior water users from their claims. Major protests by water users whose water use and management are governed by other legal systems, in particular customary and local rights, emerge each time a state or the international community make a new effort to implement permit systems further. In sub-Saharan Africa, where 90% of land and related resources are governed by customary law, permit systems have also been promoted, but their implementation appears impossible and not even needed for regulation.

This situation is compounded by the complexities of changing legal systems. As for land reform, the redistributive potential of water allocation reform risks fading away amid these legal complexities and to the detriment of small-scale uses.

#### **4.4.3 Licensing**

The NWA replaced the pre-1994 legal mix, which consisted of riparian rights, permits in scheduled areas and government water control areas (e.g. forestry), and customary water law, although the latter is usually not even considered. These uses are recognised as "existing lawful uses". In the Act, any new water use requires a licence. Water trade among existing lawful uses is possible and the new use right becomes a licence.

By 2006, the DWAF started forbidding spontaneous initiatives by individual users to convert their existing lawful use into a licence in the expectation of obtaining a more secure and tradable entitlement. In several cases, this created conflict with fellow-riparian rights holders with the notion of water as a shared resource, as opposed to the notion that one can carve out an exclusive individual

right from a shared resource. Also, it added to the administrative burden of the DWAF without serving any regulatory goal, as fee payment or pollution control is implemented on any existing uses.

The conversion of existing lawful uses of water into licences is arranged in a fully regulated, localised way through the so-called compulsory licensing. Under such licensing, water curtailment that does not lead to the bankruptcy of the enterprise does not need to be compensated for if it is for the ecological reserve or for redressing inequities from the past. Until the present, action and thinking about distributive water reallocation have been confined to projects of compulsory licensing, and not in other stressed basins.

The verification of, and validation for, compulsory licensing were pilot-tested in four sub-basins, but not completed. This, together with the experience of licence applications for new water uses, has highlighted how licensing as an entitlement intrinsically discriminates against small-scale users unless specific measures are taken.

Although the transaction costs for licence application procedures are more or less comparable to those for large and small-scale uses, the benefits derived from the water differ hugely. Large-scale users may need more in-depth assessments and often hire consultants for this purpose. The cost for small-scale users remains high because they are usually more remote and less mobile, and have to pay higher transport costs and relatively higher registration fees. In addition, they are less informed or less proficient in administration. The complexities of verification and validation in licence applications can lead to multiple efforts and much confusion among small-scale users (Movik, 2008).

For administration-proficient, larger-scale users, new water uptake has become an easy matter that simply requires submitting an application. The DWAF appears to have very limited capacity to evaluate and judge each application on its own merits, let alone checking on-site. Ensuring enforcements is even more difficult. Administrative pressure, and the proven threat that vested applicants can report any delays to the Water Tribunal, pushes officials towards allocating whatever is being asked for.

Licensing thus legally consolidates a highly inequitable water uptake. Of the 1 212 licences for new water use that had been allocated by 2006, 98% were for non-HDIs. Other users go ahead with their investments in water services without approval and assume that the investments made will constitute a reason for official approval at a later stage. Many do not apply for a licence at all. Illegal water use upstream of the Vaal system has grown immensely. The same problems that the DWAF experienced in factually checking registered uses emerged in the pilot projects for compulsory licensing.

#### 4.4.4 General authorisations

Largely because of the administrative burden on the DWAF, a new option of issuing general authorisations for small-scale uses emerged, especially in pilot projects for compulsory licensing (DWAF, 2006b). This option avoids imposing costly licence applications on precisely those users meant

to be the main beneficiaries of redressing inequities in water. General authorisations would be equally valid in other stressed basins and would be a clear signal that any own initiative towards improving one's agrarian livelihood beyond the negligible Schedule 1 uses is encouraged and officially legal. In non-stressed basins, where water is still available for use, there are already general authorisations for areas up to 15ha, but this has not been communicated formally.

The legal status of general authorisations, however, is less clear than in the case of licences – if not *de jure*, then *de facto*. In any water conflict, therefore, small-scale users would lose out legally without clear formal prioritisation. For years, alternative legal options for encouraging especially small-scale users to take up new water uses at the shortest term, with or without compulsory licensing, have been tossed around. These include reducing assurance of supply, or attaching broad-based black economic empowerment (BBBEE) conditions to new licences. However, none of these options has been taken forward as yet.

#### **4.4.5 Prioritisation**

A further bottleneck in pro-poor water allocation is the tendency to make reference to a “nationwide” economy and a blanket need to regulate everyone alike. There is little recognition that water allocation itself should differentiate, so that the legal tool itself contributes to redress. Compared with the redistributive target of 30% of the asset in the case of land reform, debates on water reallocation ensure the transfer of water related to redistributed and restituted irrigation land, but no targets are set for water use elsewhere. Instead, small-scale water uses are tolerated, as long as any new water uptake remains insignificant and does not affect the resource base. The reasoning may be that “as long as the marginalised remain marginalised, there is no problem”.

In land reform, where the productivity of the resource is widely acknowledged to be at risk, the cause itself is not questioned or the project cancelled. Instead, more resources are mobilised to ensure higher productivity. By contrast, water allocation reform hardly mentions the need for infrastructure development as a precondition for taking up water, but instead imposes burdensome licence applications on those who are supposed to benefit from agrarian reform. The DWAF, as custodian of the nation's water resources, has promulgated general authorisations for all water uses that contribute to agrarian reform, and allocates top priority to those uses.

These efforts should be underpinned by further quantification and assessment of the administrative burden of regulating even 5% of the South African population. An analysis of the registered water users of the WARMS system shows that, even among registered users only, regulating the largest 10% of users in each province would regulate the use of between 77% (Limpopo) and 93% (Gauteng) of the total registered volume of water. The differences by province for these registered uses are shown in Figure 7.

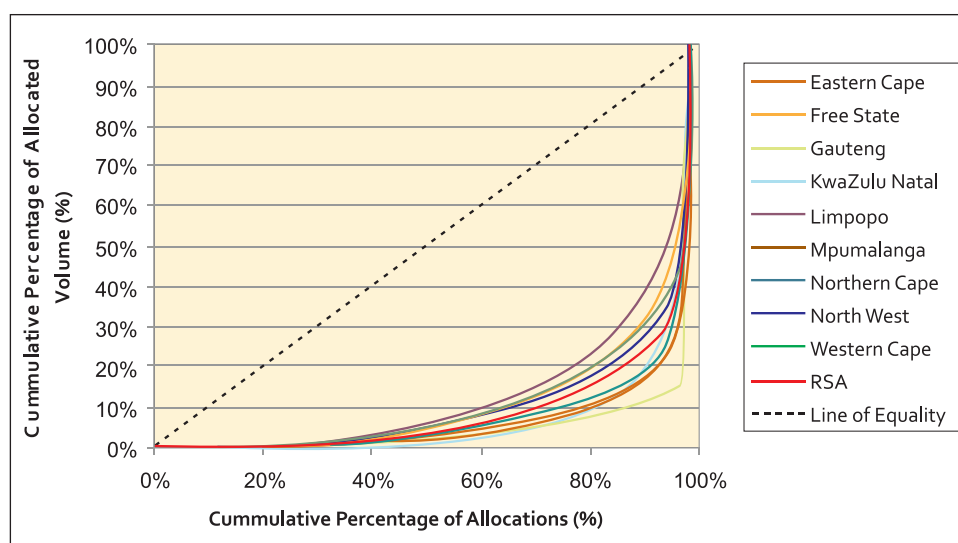


Figure 7: Distribution of registered water use by province

Such a realisation is instrumental in targeting regulatory measures and encouraging those who should be encouraged to take up water through a well-communicated prioritisation. Obviously, regulating overuse by the few and regulating pollution are preconditions for ensuring water availability to all.

Similar calculations in the Olifants basin regarding the potential impact of doubling or tripling water quantities used by virtually all micro-scale users yielded interesting results. Schedule 1 use for everybody is estimated at 116 lpcd. More than doubling this allocation to 277 lpcd (for 50 lpcd domestic water and 0.1ha irrigation per household) would require the few large-scale users to share only 6% of the volumes used (Cullis & Van Koppen, 2007). No hydrological model captures such small quantities. An important precondition is that infrastructure development should be encouraged to access the allocations.

To conclude, the current interpretation of water allocation reform seems to ignore the need for infrastructure development to unleash the potential of small-scale uses, certainly when seen against the major support provided for the development of bulk water supplies to the urban economy. Moreover, at the time of drafting the NWA, there might have been too much optimism about the benefits of licences and of converting from one legal system to another. At the time, it was hardly realised how licences intrinsically discriminate against small-scale users and distract the regulator's attention away from the relatively few large-scale users that need to be regulated most, and can be regulated realistically.

The growing interests in providing water to urban economies and the environment are clashing with rural interests even more than in the 1970s. The wider vision of an agenda for transformative agrarian reform was not only a "seed not sown" in land reform (Wildschut & Hulbert, 1997, cited in Cousins, 2008), but even more so in WRM and reform. Yet, in its regulatory role, the DWAF has all the necessary

powers to “set aside” much more water to stimulate uptake by HDIs for agrarian reform. This is possible wherever infrastructure allows HDIs to take up new water uses, whether in revitalised smallholder schemes, integration in commercial irrigation, redistributed irrigated lands, or new communal and individual storage and water harvesting.

Further quantification of these scenarios would highlight what would be possible without even seriously affecting water uses by the vested users. One option to consider is the allocation of just one quarter of the ecological reserve to HDIs for agrarian reform, while reallocating a fraction of the investments in bulk water infrastructure to ensure access by black rural and peri-urban micro, small, medium and large-scale farmers (e.g. through an infrastructure development fund).

## **5. Conclusions and recommendations**

### **5.1 A vision of agrarian reform**

There is a pertinent need to envision transformative rural redress as a holistic process in which all components, such as land, water for multiple uses, finance, extension, health, education, social grants and local planning, are included. This concerns greater equity in all assets for all dimensions of livelihoods. It addresses the whole spectrum – the water-dependent subsistence strategies of the majority of the poor, genuine inclusion in large-scale enterprises, and all in between – as well as the whole range of technical options. Ample experience in smallholder agriculture and multiple uses elsewhere in Africa, Asia and Latin America can be drawn upon in this regard.

This paper has demonstrated that such an approach would require a strong focus on water development, similar to the proactive role played by the government since the 1930s to promote white-based irrigation. In a regulatory sense, the paper has shown that water can be made available for such a process, and also that the required regulatory instruments are already in place.

### **5.2 An institutional home**

The restructuring of the government has led to many fragmented efforts of top-down support, which under-capacitated local governments have been unable to deal with. The brunt is borne by the poor and their diversified agriculture-based livelihoods.

A strong collective endeavour under the Presidency with its own funding streams would be most appropriate to lead such agrarian reform. Decision making to integrate diverse support packages needs to be decentralised to the beneficiaries themselves. Processes should be steered bottom up through, for example, area-based planning. The democratically elected local government would play a role, but with stronger accountability downwards. Civil society should play a strong role in facilitating such processes.

### 5.3 Pilot implementation of promising approaches at scale

A possible practical approach would be to take on board the area-based planning process that the DLA has already initiated. These plans are devised per district municipality for the purpose of guiding land reform efforts at local level. They are at different stages of completion and only a few of them are entirely complete.

One possibility for a pilot exercise would be to select several of these plans and develop them further so as to take water resources fully into account. They could also be opened up to determine, holistically, the agrarian reform options available to different parts of the country. Ideally, one would select district municipalities in which irrigation features significantly and a variety of circumstances are present, not least ex-Bantustan areas and commercial farming areas.

Such pilot exercises could also address the issues of institutional, skills and capacity development and could lead to pilot-tests of area-based agrarian reform initiatives. Other entry points are irrigated areas, of any origin, where all technologies and all uses could lead to sustainable, inclusive water and land reform. A further entry point would be technological development covering larger areas, such as multiple-use water services of 50-100 lpcd, household-based water harvesting, groundwater irrigation, or point-of-use water treatment.

### 5.4 Regulation

The minimum role of WRM is that regulation should encourage and support rural initiatives. It should ensure that mechanisms exist for releasing sufficient water from vested players for new, accelerated programmes. More research on reallocation scenarios to inform the setting aside of water resources for agrarian reform is warranted.

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## List of tables and figures

- Table 1: Number of people employed in each broad economic sector for every million cubic metre of registered water use in that sector
- Figure 1: Trends in black households' involvement in agriculture, by numbers of members contributing to agricultural activities
- Figure 2: Trends in black households' involvement in agriculture, by main reason given
- Figure 3: Food expenditure share and food expenditure per adult equivalent, urban versus rural
- Figure 4: Gender of black smallholders, 2006
- Figure 5: Distribution of direct benefits through registered use and indirect benefits through employment created through registered water use across the economically active population of South Africa
- Figure 6: Contribution from water use sectors to the distribution of indirect benefits of registered water use through employment in South Africa
- Figure 7: Distribution of registered water use by province

## List of acronyms and abbreviations

ANC	African National Congress
AWARD	Association for Water and Rural Development
BEE	Black economic empowerment
BBBEE	Broad-based black economic empowerment
CASP	Comprehensive Agricultural Support Programme
CCAW	Coordinating Committee on Agricultural Water

CCSIS	Coordinating Committee on Small-scale Irrigation Support
CMA	Catchment management agency
DAFF	Department of Agriculture, Forestry and Fisheries
Danida	Danish International Development Agency
DBSA	Development Bank of Southern Africa
DLA	Department of Land Affairs
DoA	Department of Agriculture
DWA	Department of Water Affairs
DWAF	Department of Water Affairs and Forestry
ha	Hectare
HDI	Historically disadvantaged individual
HSRC	Human Sciences Research Council
IDP	Integrated Development Plan
IES	Income and Expenditure Survey
IWMI	International Water Management Institute
IWRM	Integrated water resources management
LARP	Land and Agrarian Reform Project
LFS	Labour Force Survey
lpcd	litres per capita daily
MAFISA	Micro-Agricultural Finance Initiative of South Africa
NGO	Non-governmental organisation
NWA	National Water Act
NWRIA	National Water Resource Infrastructure Agency
PLAAS	Institute for Poverty, Land and Agrarian Studies
RDP	Reconstruction and Development Programme
RESIS	Revitalisation of Smallholder Irrigation Schemes
SAIRR	South African Institute of Race Relations
TIPS	Trade and Industrial Policy Strategies
WARMS	Water Authorisation and Registration Management System
WfGD	Water for Growth and Development
WMA	Water management area
WRC	Water Research Commission
WRM	Water resources management
WUA	Water user association

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