
Can payments be used to manage South African watersheds sustainably and fairly? A legal review



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Developing markets for watershed protection services and improved livelihoods

Based on evidence from a range of field sites, the IIED project 'Developing markets for watershed services and improved livelihoods' is generating debate on the potential role of markets for watershed services. Under this subset of markets for environmental services, downstream users of water compensate upstream land managers for activities that influence the quantity and quality of downstream water. The project purpose is to increase understanding of the potential role of market mechanisms in promoting the provision of watershed services for improving livelihoods in developing countries.

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Acronyms and abbreviations

AWIRU	African Water Issues Research Unit
CMAs	Catchment Management Agencies
CSIR	Council for Scientific and Industrial Research
DFID	Department for International Development (UK)
DWAF	Department of Water Affairs and Forestry
EIA	Environmental Impact Assessment
IIED	International Institute for Environment and Development
NEMA	The National Environmental Management Act (South Africa)
NWA	National Water Act (South Africa)
RDM	Resource Directed Measures
WMI	Water management institution

Executive summary

Payments for environmental services are defined as ‘Mechanisms used to facilitate reward by a demander of a particular service to a provider for supplying the service’ (King and Bond 2005). For example, carbon trading between countries allows industrialised and net carbon producing countries to pay others to maintain carbon sinks – hence slowing global warming.

Payments for catchment environmental services typically include payments made by people and/or agencies gaining commercial advantage from using water to communities or individuals further upstream to protect water quality and/or maintain river flows. These payments could take two forms: payments levied by organs of State to provide these services, or voluntary payments made between a willing buyer and a willing seller, and which are not mediated by the State. This paper focuses on the latter, and highlights the opportunities and constraints offered by South African legislation to developing markets to effect these payments.

Overarching policies for environmental and water resource management in South Africa support redress and poverty alleviation within a broader framework for sustainable development. Payments for catchment environmental services, particularly where these address needs of previously disadvantaged South Africans, are consistent with these policies. Moreover, macro-economic policies support free market systems, and will not constrain buyers from paying for services, or sellers from freely engaging the economy in this manner.

However, government’s focus on redress, and programmes that give effect to redress, could constrain the development of markets for these services, as many potential buyers may perceive these payments as an additional burden, over and above legislated redress mechanisms. Moreover, catchment environmental services that do not allow the poor to freely engage in the broader economy in their own right, and which perpetuate inequities, are unlikely to find favour within government.

Nevertheless, payments for catchment and environmental services could be encouraged and motivated as being in the best interests of all South Africans. This approach recognises that the burden of environmental management, at least in the short term, will need to be borne by the economically active sector of society. Within these overarching policies, specific pieces of legislation provide opportunities for, or constraints to, developing markets for catchment environmental services.

The *National Water Act* (NWA), which will primarily influence the establishment of these mechanisms, does not preclude these payments provided that the “service” offered does not constitute a water use in terms of Section 21 of the NWA (Republic of South Africa 1998a). However, some 11 water uses are defined in Section 21, covering all potential impacts on both water quantity and quality.

This broad definition of water use means that many catchment environmental services could require authorisation under the NWA. Furthermore, the NWA allows water management institutions to enforce, control, and receive water use charges for all these water uses. But it is unlikely that these agencies will have the capacity to manage all potential impacts on the water resource. This provides the opportunity for ‘willing buyer, willing seller’ payment mechanisms to complement the activities of water management institutions.

Similarly, it is unlikely that any other environmental legislation would directly prohibit ‘willing buyer, willing seller’ arrangements, provided that the service offered does not require authorisation in its own right. More specifically, the *National Environmental Management Act*

(NEMA) (Republic of South Africa 1998b) may require environmental impact assessments and/or screening and scoping studies for certain activities. The full list of these activities is outlined in regulations published from time to time under NEMA, and these must be examined before arrangements for catchment environmental services are finalised. Other pieces of legislation, for example the mining outreach programmes, offer opportunities for developing these mechanisms by requiring private enterprises benefiting from the use of the country's natural resources to undertake community upliftment programmes.

Land reform legislation also provides both opportunities for, and constraints to, developing markets for catchment environmental services. In order for a service to be established, the occupants of land where the service will be provided must have lawful access to the land, and must be entitled to change land use accordingly. Ongoing insecure land tenure for many of the rural poor may therefore constrain the implementation of catchment environmental services in some areas, particularly where they may need permission from the owner of the land to change land use.

Land reform in South Africa is given effect by a raft of legislation, all of which could potentially influence tenure or ownership for potential sellers of catchment services. These Acts allow government to take steps to improve the security of tenure for poor South Africans, while protecting existing ownership and landlord's rights. The ownership or security of tenure of any particular piece of land is, however, often not clear-cut, and rests largely on the history of the occupation of the land since 19 June 1913.

The circumstances of ownership or tenure of the sellers of catchment services would therefore have to be individually established. Nevertheless, land reform legislation is likely to provide some security of tenure where the sellers have occupied the land for some time. In these cases, the occupants would be able to implement the land use changes required to effect catchment environmental services, provided that this is not detrimental to the owner of the land.

Policy and legislation in South Africa therefore support the principles of 'willing buyer, willing seller' arrangements for catchment environmental services. In some cases, legislation specifically requires potential buyers of these services to undertake similar social upliftment programmes of a similar cost. However, the broad scope of much of the legislation allows the State to control or manage any activity that could impact on the environment and/or water resources. As such, rigorous application of legislation may constrain the implementation of these payments. Payments for environmental services should, therefore, be motivated as complementing the activities of the State. Similarly, security of tenure or ownership of land may constrain implementation of catchment environmental services, but in most cases where the land has been occupied for many years, land reform legislation is likely to provide some protection for the occupants.

1. Introduction

1.1 Background

The 'Developing Markets for Watershed Protection Services and Improved Livelihoods' project is funded by the UK's Department for International Development (DFID), and is coordinated by the International Institute for Environment and Development (IIED). The project is being undertaken in three phases. The first phase reviewed the potential for such markets in five countries, including South Africa (CSIR 2003).

The output of the first phase, 'The Diagnostic', provided a review of the opportunities and initiatives in South Africa for developing payments for catchment environmental services (CSIR 2003). Phase 2 of the study undertook feasibility assessments of six sites and, using selection criteria outlined in 'The Diagnostic', selected the Olifants and Sabie-Sand catchments for further investigation under phase three (King and Bond 2005).

This working paper forms part of Phase 3 of the study, and describes the results of a legal review for the South African portion of the study. The paper identifies the opportunities for, and potential constraints to, developing and implementing markets for catchment environmental services in South Africa. The review primarily focuses on the *National Water Act* (NWA) (Act No. 36 of 1998) (Republic of South Africa 1998a), which provides the overarching framework for the protection, use, conservation, and management of the nation's water resources. It also explores the opportunities and constraints offered by the *National Environmental Management Act* (NEMA) (Act No. 107 of 1998) (Republic of South Africa 1998b).

The complexities of security of tenure, as well as the authorisation that may be required from land owners to implement watershed protection services, are also explored in the context of the land reform legislation. Other legislation that may influence payments for these services, or that offers opportunities to encourage payments, is also briefly explored.

1.2 What are payments for catchment environmental services?

Payments for environmental services are defined in the Phase 3 workplan for this project as: 'Mechanisms used to facilitate reward by a demander of a particular service to a provider for supplying the service' (King and Bond 2005). The most well-known of these environmental services are those payments made with respect to carbon trading between countries.

'Watershed environmental services' refer to environmental services established to protect water quality and/or quantity. In South Africa, watershed environmental services are more commonly (and correctly) referred to as 'catchment environmental services', since the word 'watershed' refers only to the physical border of a catchment that, literally, sheds water into the catchment. The term 'catchment environmental services' is consequently used in this working paper.

Payments for catchment environmental services typically include payments made by people gaining some commercial advantage from the water resource (the buyers) to other persons or communities (the sellers) who may act to protect water quality, the riparian vegetation, and/or river flows (the service). In its broadest sense, these payments could take two forms:

- Firstly, payments that are required by legislation. For example charges levied by organs of State to provide the funds to manage environmental and water resources on behalf of its citizens; and
- Secondly, voluntary payments made between a willing buyer of a service, and a willing seller of that service, and which are not mediated by the State.

Although this project focuses on establishing markets to support the second of these mechanisms, the above distinction is important in the South African context where legislation allows government to take proactive measures for redress; to manage the country's natural resources to effect this redress; and to collect charges to provide the resources to do this. As such, a number of legislative provisions require payments for environmental services, or require enterprises to undertake social upliftment programmes. Examples include the water use and waste discharge levies (see Section 3.2), or the economic development programmes required from mines (see Section 4.3). Many potential "buyers" of catchment environmental services are consequently already required to pay catchment or environment protection charges.

This means that, in order for the 'willing buyer, willing' seller mechanism to be effective, the buyer must perceive the economic value of the service to be greater than any existing charge, or must recognise the value of guaranteeing the service by linking it directly to any payment made. Opportunities for developing catchment markets in South Africa also occur in the context of a rapidly transforming society, where the costs of redress and environmental protection are increasingly falling on the more affluent members of society. In many cases, this group already feels that they are bearing too much of this burden and many potential buyers may therefore be unwilling to engage in voluntary catchment markets.

Nevertheless, South Africa's framework of environmental legislation, (which is based on the principles of sustainable development, as well as government's responsibilities for social upliftment), provides opportunities for effecting and supporting voluntary payments for catchment environmental services. These opportunities mostly lie in linking legislated payments, and/or the requirements of redress and social upliftment programmes, to win-win solutions for both sellers and buyers of catchment environmental services.

Additionally, land reform legislation in South Africa aims at providing security of tenure for most of the rural poor. This provides, in many cases, a secure basis for the changes in land use that would constitute these catchment environmental services.

This paper examines water, environmental, and land reform legislation in South Africa; identifies opportunities and constraints to developing catchment environmental services; and determines how win-win solutions may be defined within this legislative framework.

1.3 The purpose of this working paper

The development of markets for catchment environmental services in South Africa cannot promote actions that may be unlawful. More importantly, attempts to establish these markets must recognise the constraints and opportunities offered by legislation, in order to develop win-win solutions for both buyers and sellers of these services. These efforts should also complement government's sustainable development initiatives.

This working paper outlines the circumstances where payments for environmental or catchment services may require authorisation by any responsible authority, or the landowner, before they may be implemented, and identifies where legislation and/or policy provide suitable opportunities to encourage payments for environmental services.

2. The overarching policy and legislative environment

2.1 The Constitution

As the supreme law of the land, the Constitution (Act No. 108 of 1996) (Republic of South Africa 1996b) governs the content of all legislation in the country. Law or conduct that is inconsistent with the Constitution is invalid and the obligations imposed by the Constitution must be fulfilled (Republic of South Africa 1996b – [S2]).

South Africa is perceived to have one of the most progressive Constitutions in the world, which balances the rights of every South African with the need to take proactive steps to redress the impacts of apartheid (Stein 2002). The key to this lies in the Bill of Rights [Section 9 (2)], which allows government to take legislative and other measures to protect or advance persons who have been disadvantaged by unfair discrimination in the past. This provides a basis for policy and legislation that imposes charges for services, or for requiring persons or agencies advantaged by previous legislation – and who are gaining benefit from the use of the country’s natural resources or State-owned assets – to undertake social upliftment programmes.

The Bill of Rights also guarantees every person (including previously advantaged South Africans) the right to an environment that is not harmful to their health or wellbeing [S24 (a)], and importantly, the right to have the environment protected through reasonable legislative and other measures [S24 (b)]. The Constitution also promotes ecologically sustainable development and use of natural resources, while promoting justifiable economic and social development [S24 (b) (iii)]. The Constitution therefore requires government to introduce legislative provisions that will protect the environment, but within a framework that allows for proactive actions for redress (Stein 2002). This provides the legislative basis for payments for catchment environmental services that can benefit the poor.

These provisions, however, also allow legislation to prescribe proactive corrective actions that require the economically active sector of society to support the upliftment of the poor. South Africa has consequently enacted a wide range of legislation aimed at redress including land reform legislation, labour laws, and minimum rural wages, much of which has increased the financial burden on potential buyers of catchment environmental services. Many potential buyers have, therefore, already been targeted in some way to support redress, and may be unwilling to engage in voluntary additional payments. Nevertheless, the principles for redress enshrined in the Constitution appear to be accepted by the majority of South Africans, particularly where these are couched in the context of actions that serve the best interests of the nation as a whole.

2.2 The policy environment

Government policies follow the lead provided by the Constitution, by supporting proactive actions for redress within a framework for sustainable development. However, policies do not allow the State to impinge on the rights of the advantaged South Africans to willingly engage in buying or selling services, or on the ability of the economy to grow. In the words of Ms. Buyelwa Sonjica, Minister of Water Affairs & Forestry: “We need to make water available in a way that will sustain and grow the first economy while allowing the second economy users to develop into the first economy”¹. Support for these free market principles is also inherent in the government’s macro-economic policies, and is consistent with sustainable development principles for decision-making.

¹ Extracted from the Minister’s speech at the launch of the Water Allocation Reform Programme, Pretoria 12 April 2005.

These policies provide for fair and reasonable actions for redress, which consider the broader implications for economic growth, environmental protection, and the rights of the individual. Policies consequently often take an economically conservative line, providing the opportunity for market-driven initiatives once proactive actions for redress have levelled the playing field.

Water quality management as outlined in South Africa's *National Water Policy* is also consequently based on the 'polluter pays' principle (DWAF 1997). In many cases, upstream impacts on water resources that may be targeted as catchment environmental services could be, and given the broad definition of water use (see Section 3.3) often will be, defined as pollution sources. In this sense, catchment services aimed at reducing pollution and improving downstream water resource quality may run contrary to the 'polluter pays' principle.

2.3 Opportunities and constraints offered by the policy environment

Both the Constitution and policies for environmental and water resource management support the establishment of markets for catchment environmental services, particularly where these promote redress and upliftment of previously disadvantaged South Africans. Similarly, policies will not constrain buyers from paying for services, or sellers from freely engaging the economy in this manner. Moreover, policies for water and environmental management in South Africa recognise that addressing the crippling poverty still affecting the lives of most South Africans is critical to the nation as a whole.

However, government's focus on redress could constrain the development of market mechanisms for catchment environmental services, primarily because many potential buyers may perceive these an additional financial burden of redress. Many may also believe that this burden, particularly with respect to environmental protection, should be borne by the State. In some cases, this may be supported by the perception that the service should be addressed as part of the 'polluter pays' principle.

In this sense, it is important that payments for catchment and environmental services be encouraged and motivated within a broader context of redress in the best interests of the nation as a whole. This approach must recognise that the burden of environmental management, at least in the short-term, must primarily be borne by the commercially active sector of society. Moreover, the process of developing these catchment market mechanisms must recognise that by encouraging the rural poor to develop and engage in the economy in a sustainable way, the long-term burden on the economically active sector of society will be reduced.

More importantly, however, government policies will not support payments or market mechanisms that perpetuate inequities by paying the poor a stipend not to engage in economic activities in their own right. This means that payments for catchment services should be seen only as a stepping-stone to enable the poor to engage in economic activities and eventually to enable them to take responsibility and accountability for their own impacts on downstream users and the environment.

3. The National Water Act

3.1 Background

The *National Water Act* (Act No. 36 of 1998) is widely hailed as one of the most progressive examples of water resources legislation in the world (Stein 2002). The purpose of the Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed, and controlled in order to, *inter alia*:

- Provide for water needs now and into the future;
- Promote redress and equitable access;
- Promote efficient, sustainable and beneficial use of water;
- Protect aquatic and associated ecosystems; and
- Reduce and prevent pollution.

(Republic of South Africa 1998a - Section 2 – paraphrased here)

The NWA therefore provides the basis and motivation for developing markets for catchment environmental services. Firstly, the precept of sustainable use of water provides the foundation for services aimed at maintaining key ecological goods and services that are necessary to ensure sustainable use of the resource (Masundire and MacKay 2002). Secondly, the NWA specifically provides for redress, which would underlie market mechanisms aimed at poverty relief.

However, the complexity and integrated nature of the NWA, and the onus that this places on water management institutions (WMIs), provides particular challenges to implementing payments for catchment services on a 'willing buyer, willing seller' basis. These challenges are explored in more detail in the following sections.

3.2 Resource Directed Measures

The Resource Directed Measures (RDM) are a series of legislative provisions outlined in Chapter 3 of the NWA. These provide for the protection of water resources by outlining an appropriate balance for the protection, development, and utilisation of different water resources (DWA 1997). The RDM are made up of the following:

- **The Reserve** [S16]: This represents the water quantity and quality required to meet basic human needs and to maintain aquatic ecosystem functioning. The Reserve is a non-competing water use and receives a priority allocation. The Reserve is set according to the Class of the resource.
- **The Resource Class, and Classification system** [S12]: These outline the appropriate balance between the utilisation and protection of all water resources. The Classification system will also attempt to define an appropriate national balance for the protection and use of the nation's water resources.
- **The Resource Quality Objectives** [S13]: These are a set of narrative and numerical management objectives, defined for any particular resource, and are associated with the Resource Class allocated to that resource.

(Republic of South Africa 1998a)

These provisions not only aim to manage water quantity and quality, but also the instream and riparian habitat, the aquatic biota, land-based activities which may affect the resource, or (more tellingly) 'any other characteristic' of the water resource [Section 13 (3)]. Moreover, Sections 15 and 18 of the NWA require water management institutions to give effect to the Resource Directed Measures (Republic of South Africa 1998a). Water use may not, therefore, be authorised if it impinges on the RDM requirements.

The broadly-defined scope for the RDM means that the benefits of catchment environmental services would, or could in most cases, be defined as Resource Quality Objectives. It is also likely that these benefits would be included in the description of the Class or Reserve for the resource. The requirement in the NWA to give effect to these measures then places an obligation on water management institutions to realise these goals. This does not, however, preclude these institutions from promoting the principles of 'willing buyer, willing seller' markets for catchment environmental services to help them realise these objectives.

3.3 Water use definitions

The definition of water use in the NWA takes its cue from the *National Water Policy* (DWA 1997), which recognises the unity of the water cycle, and the integrated nature of water resources management. Water use in the NWA is consequently broadly and non-exhaustively defined and could potentially include anything that may impact on the water resource. Section 21 of the NWA outlines 11 water uses:

1. Taking water from the resource;
2. Storing water;
3. Impeding or diverting the flow;
4. Engaging in Streamflow Reduction Activities (potentially any land based activity that could reduce flows [see Republic of South Africa 1998a - [S36]]);
5. Engaging in a Controlled Activity (potentially any land based activity that could reduce water quality [see Republic of South Africa 1998a - [S37 (1) and 38 (1)]]);
6. Discharging waste into the water resource;
7. Disposing of waste in a manner that could affect the water resource;
8. Disposing of heated water;
9. Altering the bed, banks, course or characteristics of a watercourse;
10. Removing or discharging of underground water; and
11. Using water for recreational purposes.

(Republic of South Africa 1998a)

Consequently, in addition to consumptive water uses, any land-based activity that reduces the quantity or quality of water for downstream users could potentially be declared as a 'water use', either as a controlled activity or a stream flow reduction activity. These controlled or stream flow reduction activities can also be defined for a specific geographic area [S36 and S38]. In most cases, therefore, activities which impact on the water resource (and which may be targeted for catchment environmental services) could be defined as water uses in their own right. However, it is unlikely that water management institutions would wish to (or could practically afford to) extend these definitions to address all the potential services that may be offered by the rural poor.

All water uses defined in Section 21, and those declared as controlled activities or as stream flow reduction activities, are subject to authorisation in terms of the NWA (Republic of South Africa 1998a - [S22]), as either:

- Schedule 1 Use — small volumes of water or wastewater used at a household level with little potential for negative impacts on the water resource, for which no application for authorisation needs to be made.
- General Authorisations — larger volumes of water or waste with some potential for negative impacts on the water resource, which may be generally authorised for a specific water resource, specific group of users, or type of water use anywhere in the country.
- Existing Lawful Use — which is a water use that lawfully took place in the period two years before the commencement of the NWA, and
- Licensed Water Use — larger volumes of water or waste or other water use authorised in terms of a licence issued under the NWA, and upon approval of an application by a responsible authority.

Any catchment environmental service aimed at limiting an activity declared as a water use is therefore potentially subject to authorisation and control by the responsible authority, and could attract water use charges as discussed below. Moreover, when these water uses are allocated or authorised under the NWA, priority must be given to international requirements, or to nationally strategic water use (for example power generation).

3.4 Water use charges

Chapter 5 of the NWA includes provisions for establishing a pricing strategy for water use charges, and for the application of this strategy. This pricing strategy has been promulgated in the Government Gazette of 12 November 1999 (DWAF 1999). This strategy indicates that any water use, as outlined in the previous section, is potentially subject to charges. However, the pricing strategy also makes provision for the gradual phasing in of charges for different water uses. The pricing strategy (Republic of South Africa 1998a - [S56 (1)]) is also established with the concurrence of the Ministry of Finance.

These charges do not, however, constitute a general tax, levy, or duty payable to the central fiscus (See Section 57(5) of Republic of South Africa 1998a). This means that the charges must be 'ring fenced' for water resource protection. As such, these charges are, in effect, payments for catchment services, and must be used for water resources management, including the development, protection and allocation of water resources (Republic of South Africa 1998a - [S56 (2)]). These charges may differ according to the geographic area, RDM requirements, water uses, and water users, and also take into account the socio-economic, demographic and physical characteristics of each area (Republic of South Africa 1998a - [S56 (3&4)]).

Water use charges levied in a specific area are payable to the relevant water management institution, whilst charges made on a national or regional basis are payable to the State (Republic of South Africa 1998a - [S57 (2&30)]).

To date, water use charges have been established for abstraction, storage, and stream flow reduction activities, and may soon be established for recreational use of water on State-owned water bodies. Waste discharge charges are under development (DWAF 1999). Importantly, however, the DWAF has promoted the water use charges as 'your water

insurance policy that gives the right to protected water resources' in a series of advertorials placed in a variety of journals (see for example, Van Zyl 2003). This has sent a clear message: 'If you pay your water use charges, your quality and quantity of water will be protected'. In spite of this, the implementation of these charges has met with considerable resistance.

Many potential buyers who are paying water resource management charges may, therefore, argue that they are already paying for catchment environmental services, and that the water management institution has the responsibility to ensure that these services are effected and/or delivered.

3.5 Compulsory licensing

Compulsory licensing (Republic of South Africa 1998a, Sections 43-48) is a mechanism to reconsider all the water use authorisations in an area, to:

- Achieve a fair allocation of water from a resource that is under stress or to achieve equity in allocations;
- Promote beneficial use of water in the public interest;
- Facilitate efficient management of the water resource; or
- Protect water resource quality.

Any water use as outlined in section 3.3 above can potentially be subject to compulsory licensing. This means the compulsory licensing process will impact on the establishment of catchment environmental services, and in many cases may target similar mechanisms to realise the above objectives. However, the DWAF's Position Paper on Water Allocation Reform indicates that only abstraction, storage, and stream flow reduction activities would be initially be targeted (DWAF 2005). The Position Paper also indicates that the primary intention of this process would be to achieve race and gender equity with respect to water use.

Compulsory licensing will consequently address poverty by promoting the establishment of viable water-using enterprises, particularly by the rural poor. In some cases this may require the re-allocation of water from existing commercial users. Whilst the intention of this process is to avoid economic impacts on the existing lawful water users (DWAF 2005), some impacts are likely. As such, potential buyers of catchment protection services may be reluctant to engage these mechanisms in the face of compulsory licensing². More importantly, compulsory licensing may negate any gains made by catchment environmental services aimed at increasing water availability (and hence increased supply to the buyers).

Nevertheless, the purpose the water allocation reform process is to achieve greater equity in the benefits that accrue from water use, and not necessarily in the use of the water *per se* (DWAF 2005). In many cases, catchment environmental services aimed at securing flows for established downstream users may represent an effective means of distributing the benefits of water use, at least in the short term.

However, caution must be exercised when establishing markets for catchment environmental services in areas prioritised for compulsory licensing. Both the Sabie and Olifants catchments, which were identified in 'The Diagnostic', have been prioritised for

² The DWAF has recently announced the rollout of the water allocation reform process. The compulsory licensing process forms the backbone of this process, and as such public awareness of the process will grow in the next few years.

compulsory licensing, and the process of establishing the existing lawful use in these catchments has already started.

3.6 Institutional arrangements

One of pillars of South Africa's *National Water Policy* (DWAF 1997) is that water resources management will be delegated to the lowest appropriate level. Chapter 7 of the NWA therefore makes provision for the establishment of Catchment Management Agencies (CMAs) that would manage the water resources in South Africa's 19 Water Management Areas. These agencies are established by submitting a 'Proposal to Establish' to the Minister, who would then grant approval subject to specific conditions being met (Republic of South Africa 1998a - [S77]). This proposal must, among other things, indicate how the Agency will be funded (Republic of South Africa 1998a - [S77 (1d)]), and indicate the feasibility of the Agency in terms of technical, financial, and administrative matters [S77 (1e)]. Examples of these proposals may be found at <http://www.dwaf.gov.za/documents>.

CMAs will be funded out of the charges levied on water use (Republic of South Africa 1998a - [S84 (2b)]) (see the previous section). To date however, proposals to establish CMAs indicate that most are only marginally financially viable when funded with water use and waste discharge levies. Nevertheless, Section 84 (1) indicates that these agencies may also raise any other funds required for managing the water resources within their water management area, and may be supported by money appropriated by Parliament or money appropriated from any other lawful source (Republic of South Africa 1998a - [S84 (2a&c)]).

The initial functions of a CMA are also outlined in the NWA (Republic of South Africa 1998a - [S80]). In this respect the CMA must advise interested persons on the protection, use, development, management and control of water resources in its water management area [S80 (a)]. The agency must also develop a Catchment Management Strategy [S80 (b)], which must take into account the RDM requirements (see section 3.2) [S9 (a)], as well as set out plans for the management of the water resources of the Water Management Area [S9 (c)]. Most importantly, however, a CMA must promote community participation in the protection, use, development, conservation, management and control of water resources in the Water Management Area (Republic of South Africa 1998a - [S80 (e)]).

The establishment of CMAs consequently creates opportunities to establish markets for catchment environmental services by requiring community participation. Efforts to establish these markets must involve the CMA where these markets have been established. Moreover, given the need for financially viable CMAs, payments for catchment services should not compromise the ability of the CMA to impose and collect any water charges it deems necessary for the effective management of the water resources in its Water Management Area. Many potential payment mechanisms may therefore need to be given effect by formal water use charges via the CMA rather than on a 'willing buyer, willing seller' basis. Some opportunities may, however, exist where the buyers want to guarantee the catchment environmental service is delivered in the period before the CMA is fully functional.

The establishment of the CMAs in the various water management areas has progressed at different speeds, and only some agencies are likely to be established in the next few years. However, the CMA board for the Nkomati WMA – which includes the Sabie-Sand system – is likely to be established by mid 2005 (DWAF 2004a). This may impact on the establishment of market mechanisms for catchment environmental services as envisaged by this project.

3.7 Water trading

Section 25 of the *National Water Act* allows for the transfer of water use authorisations (Republic of South Africa 1998a). The Department of Water Affairs has established a policy regulating the trading of water use entitlements (DWA 2004b). This policy indicates that the responsible authority (i.e., DWA or the CMA) will have no say in the price agreed by both parties in such a trade (DWA 2004b). This signals a clear intention not to interfere with the normal market mechanisms underlying water use. These transfers or trades of water use entitlements could therefore potentially be a mechanism for implementing catchment environmental services, for example where sellers could institute actions to maintain flows to buyers, and would not seek a water use licence for this water.

However, in order for a permanent trade to be effected, the seller must surrender the entitlement (Republic of South Africa 1998a - [S25 (2)]), and the buyer must apply for a licence. There is no guarantee that the licence would be issued, or that the conditions of the water use licence would remain the same. Therefore, trading in water use is unlikely to offer significant opportunities for 'willing buyer, willing seller' markets for catchment protection services given the constraints already highlighted in the previous sections.

3.8 The Working for Water campaign

The Working for Water campaign was established as a job creation exercise under the patronage of former President Nelson Mandela. The campaign, which focuses on the removal of alien vegetation to improve river flows, provides temporary employment for indigent communities. Whilst the campaign has largely been hailed as a success, the jobs created are not always sustainable and the campaign may not be financially self-sustainable in its present form.

The Working for Water campaign is nevertheless being extended to encompass Working for Wetlands, which encourages sustainable utilisation and protection of wetlands. This is supported both by government agencies and by private enterprise. Protection of wetlands realises water quality and flood protection benefits for downstream users, and is a good example of a catchment environmental service. However, like the Working for Water campaign, it may not be viable without funding from private enterprise and/or the State.

Both the Working for Water and Working for Wetlands campaigns, therefore, represent functioning markets for catchment environmental services, albeit not entirely on a 'willing buyer, willing seller' basis. However, these campaigns are unlikely to become self-sustaining until the value of the downstream benefits is fully realised.

3.9 Constraints and opportunities offered by the National Water Act

The NWA (Republic of South Africa 1998a) does not preclude any private arrangements between willing buyers and willing sellers for catchment environmental services, except where the activity that constitutes the service may be declared as a water use in its own right. Moreover, the intention of catchment environmental services as embodied in 'The Diagnostic' (CSIR 2003) is certainly consistent with the purpose and spirit of the NWA.

However, the broad scope of the NWA, and the fact that it has been drafted as framework legislation, means that many catchment environmental services could be defined as water uses. Similarly, the benefits of any service could potentially be incorporated into the Resource Quality Objectives or Reserve, placing an obligation on the water management institution to achieve such benefits. Rigorous application of the provisions of the Act could, therefore, hamper efforts to establish voluntary payments for catchment environmental

services. Moreover, potential buyers may argue that the service should be covered by their water use charges, and that they are entitled to this service, particularly if the benefits form part of the Reserve requirements.

Nonetheless, while the NWA allows water management institutions to enforce, control, and receive payments for catchment environmental services, it is unlikely that these agencies will have the capacity to manage all potential impacts in the areas with their limited resources. The way in which the potential service is motivated to the WMI, and to potential buyers and sellers, is therefore critical. This is illustrated in the following example.

Example Case Study from the upper Selati River

Local communities are farming in, and next to, the Legalemeetse Nature Reserve. As a result of poor irrigation practices, they are using all the base-flow of this river for most of the year, and a great deal of this water would be conserved if this situation could be improved. An increased yield to downstream communities will benefit the environment as well as downstream communities, irrigation farmers, game farmers, the Phalaborwa Mining Complex, and the Kruger National Park. It has been proposed that these downstream users could provide support to improve farming practices.

Firstly, it is likely that the base-flow of the river is specified as part of the Reserve requirement. As such, the water management institution will not be able to authorize any use by the local communities which impinges on this base flow. However, given the reform imperatives embodied in the Act, it is unlikely that the WMI would not authorize this use. Moreover, the WMI – recognizing that these communities are just establishing their commercial use – is likely to authorize the full volumes required at a high assurance of supply.

In this case, the requirements for the Reserve would have to be met by curtailing downstream and upstream use by the “haves”. Therefore the motivation for the payments for the catchment service in this case should not be based on ‘helping the communities realize the requirements of the Reserve’, but should rather indicate to nearby large commercial irrigators that they are less likely to suffer curtailments in order to meet the requirements of the Reserve.

Similarly, the broad scope of the compulsory licensing process may negate any gains made by catchment environmental services, particularly where these are aimed at improving water availability for the “buyers”. Compulsory licensing will have a significant impact on the Selati River. Nevertheless, there are opportunities to promote these services as effective means to more equitably distribute the benefits of water use, in parallel with the compulsory licensing process.

The greatest opportunities for developing markets for catchment environmental services therefore appear to occur:

- When the buyer is not defined as a water user (and is not paying a charge), for example where there is amenity value associated with resource protection;
- When the buyer perceives the value of the service to be more than the water use charge, or is prepared to pay additional charges to guarantee the service;
- When the seller’s impacts on the water resource do not constitute a water use;

- Where the service occurs locally between a single buyer and a single seller and is unlikely to be regulated by the water management institution; and
- Where other incentives for payment can be motivated to buyers to reduce the potential impacts they may suffer as a result of curtailments required to realise equity.

4. Other legislation

4.1 The National Environmental Management Act (NEMA)

The *National Environmental Management Act* (NEMA) (Act No. 107 of 1998) was enacted to provide for cooperative and environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote cooperative governance, and procedures for coordinating environmental functions exercised by the organs of State (Republic of South Africa 1998b). In addition, NEMA also provides for the prohibition, restriction, or control of land-based activities that are likely to have a detrimental effect on the environment.

Chapter 1, Section 2 sets out the principles underpinning the Act. These serve as guidelines and a point of reference for any organ of State taking any decision in terms of the Act (Republic of South Africa 1998b - [S2 (1)]). These principles clearly support the protection, promotion and fulfilment of the rights expressed in the Bill of Rights, particularly with respect to meeting the basic needs of persons disadvantaged by previous unfair discrimination (Republic of South Africa 1998b - [S2 (1)]). Moreover, these principles indicate that environmental management must place people and their needs at the forefront of its concern.

This places actions under NEMA within the same social context highlighted in section 2.3 of this paper, recognising that redress is critical to the country's development, and hence the country's ability to manage the environment. Within this framework, Section 2 (4) of NEMA indicates that sustainable development requires the consideration of all factors, including:

- The disturbance of ecosystems and the loss of biodiversity are avoided [S2 (4ai)];
- Pollution and degradation of the environment should preferably be avoided or minimised and remedied [S2 (4aii)];
- Disturbance of national heritage landscapes and sites should preferably be avoided or minimised and remedied [S2 (4aiii)];
- Waste is avoided or where it can't be avoided altogether, it should preferably be minimised, reused or recycled [S2 (4aiv)]; and
- A risk-averse and cautious approach is applied [S2 (4avii)].

NEMA therefore promotes a balance between the benefits of development to people, especially previously disadvantaged communities, and the impacts of development on the environment. NEMA also recognises that some environments, by virtue of their national or international importance, require additional protection.

Chapter 5 of NEMA – 'Integrated Environmental Management' – promotes the application of appropriate environmental management tools to realise the intentions of the principles contained in Section 2 (Republic of South Africa 1998b - [S23 (1)]). Under the provisions of this section, the Director-General of the Department of Environment Affairs and Tourism must coordinate the activities of all organs of State to achieve the principles outlined in Section 2.

Within this chapter, Section 24 of NEMA provides that the Minister: Environment Affairs and Tourism may, with the concurrence of the relevant Provincial Minister:

- Identify activities that require pre-commissioning authorisation;
- Identify geographical areas where certain activities may not be commenced without prior authorisation; and
- Make regulations in respect of such authorisations.

The effect of the above is that an Environmental Impact Assessment (EIA) process must be undertaken in order to obtain authorisation for any of the activities so identified. Presently, EIAs are regulated under the *Environment Conservation Act* (Act No. 73 of 1989) (Republic of South Africa 1989) and regulations promulgated pursuant to the *Environment Conservation Act* (Government Notices R1182, R1183, R1184 published in Government Gazette No 18261 on 5 September 1997, as amended - Republic of South Africa 1997b, c, d).

Section 21 of the *Environment Conservation Act* indicates that written authorisation is required for any activity that may have a substantial detrimental effect on the environment (Republic of South Africa 1998b). Certain activities identified under the *Environment Conservation Act* may limit or prevent the establishment of markets for catchment environmental services where such authorisation is required, and the existing list of identified activities should be consulted prior to finalising any agreements for payments for catchment environmental services.

In addition to this, draft regulations (to be promulgated under Chapter 5 of NEMA) were published for comment on 14 January 2005 (Republic of South Africa 2005). The draft contains an extensive list of activities, divided into two categories. Category I activities require the submission of an application to the responsible authority and a 'screening level' assessment of potential environmental impact. Category II activities require the submission of an application and a full Environmental Impact Assessment (EIA)³. The costs of the EIA process are likely to hamper efforts to establish markets for catchment environmental services that may fall into this category.

The scope of this paper precludes a detailed assessment of all of the activities listed as Category I or II. However, it seems unlikely that many catchment services would fall into the list of Category II activities, and many may not require authorisation even under Category I. (The draft regulations are available from <http://www.deat.gov.za>.) The draft regulations also highlight that extra care needs to be taken in sensitive environments or in environments with a particular environmental and/or heritage significance. These types of sites are listed in the regulations.

It therefore seems unlikely that NEMA regulations, once promulgated, would prevent payments for catchment environmental services, but in some cases the need for authorisation may slow the process. It is therefore recommended that the NEMA regulations are consulted before finalising any agreements for payments for catchment services.

4.2 Land reform

In most cases, catchment environmental services will require a change in land use practices by the sellers of the service. Successful establishment of these services therefore requires that the sellers have lawful access to the land and, if they are not owners, that they have the

³ Details of screening, scoping and other EIA process requirements are spelled out in the regulations.

landowners consent to change the land use appropriately. Unfortunately, the dominant characteristic of the apartheid system was racially-based access to land and land ownership. It has been estimated that about 17 000 statutory measures were put in place to regulate access to land on a racial basis (Badenhorst et al. 2002). The legacy of these measures still remains. The successful establishment of catchment protection services is consequently closely linked with government's land reform initiatives.

The 1991 *White Paper on Land Reform in South Africa* is founded on the following principles: access to land is a basic human need, and free enterprise and private ownership is the appropriate system to fulfil this need (DLA 1991). Within these overarching principles, the purpose of land reform is seen to be fourfold;

1. To redress the injustices of apartheid;
2. To foster national reconciliation and stability;
3. To underpin economic growth, and
4. To improve household welfare and alleviate poverty.

(DLA 1991)

Land reform processes therefore follow the lead provided by the Constitution and broader government policies by promoting proactive actions for redress, while protecting the rights of the existing landowners. This does not support the unlawful occupation of land, or changes in land uses that would prejudice the landowner.

The land reform programme includes three components:

- Land redistribution, where land is found to establish poor communities.
- Land tenure, where communities living on the land for decades are given formal tenure; and
- Land restitution, where land is restored to communities who were deprived of their land due to previous legislation;

These components are effected within an interlocking framework of legislation described in the following sub-sections, and are all underpinned by the need to establish viable communities. Land reform processes are therefore supported by subsidies and grants to the community to promote productive use of the land. This may result in impacts on the water resource as the newly-established communities may struggle to establish productive use. The following sub-sections investigate the legislation behind these components of the land reform process in greater detail.

4.2.1 Land redistribution

The purpose of the land redistribution programme is to provide the landless poor with land. It is aimed at the urban and rural poor, labour tenants, and emerging farmers (Badenhorst et al. 2002). The programme is underpinned by:

- The *Land Reform (Labour Tenants) Act* (Act No. 3 of 1996 - Republic of South Africa 1996a);
- The *Transformation of Certain Rural Areas Act* (Act No. 94 of 1998 - Republic of South Africa 1998c); and
- The *Provision of Land Assistance Act* (Act No. 126 of 1993 - Republic of South Africa 1993).

The *Land Reform (Labour Tenants) Act* provides security of tenure to labour tenants who have occupied land and who provide labour to the owner or lessee of the farm. Under Section 3(1) of this Act, these persons have the right to occupy the land with his or her family. In return for occupation rights, the labour tenant must provide labour and cannot initiate land use practices that may endanger or cause substantial damage to the landowner (Section 15). However, it is unlikely that changes in land use practices required as part of catchment environmental services would fall into this category.

The *Transformation of Certain Rural Areas Act* (Act No. 94 of 1998 - Republic of South Africa 1998c) deals with the dismantling of the rural tenure scheme provided for in the House of Representatives under the apartheid system. The Act therefore effects the redistribution of land formally allocated for 'coloured occupation'. This Act provides security of tenure for these communities, who may then be able to engage markets for catchment environmental services.

The *Provision of Land Assistance Act* promotes the designation of land controlled by the Department of Land Affairs (State land), as well as privately-owned land once it has been purchased for the purposes of the Act, for occupation by established communities. The Act also provides financial assistance for the acquisition, development, and improvement of the land. This Act therefore provides the security of tenure required by potential sellers of catchment environmental services (where the land has been designated by the Department of Land Affairs), and may also support the capital investments required to establish the changed land use practices. In these cases the catchment environmental services may support the operating costs.

4.2.2 Land tenure reform

Land tenure reform for rural communities is governed *inter alia* by two pieces of legislation which support a move away from permits to a rights-based approach, recognising *de facto* tenure rights. These are:

- The *Extension of Security of Tenure Act*, 1997 (Act No. 62 of 1997 - Republic of South Africa 1997a); and
- The *Interim Protection of Informal Rights Act* (Act No. 31 of 1996 - Republic of South Africa, 1996c)

The *Extension of Security of Tenure Act* aims to achieve long-term security of tenure for occupiers of land. The Act focuses on land designated for agricultural purposes, and aims to assist people with an income of less than R 5000 per month [Section 1(1)]. It applies to people living on land belonging to another person, and who had consent to do so on 4 February 1997 under another right in law. These occupiers are, nevertheless, held to certain rights and duties under Section 6 of the Act. Specifically, these occupiers may not cause damage to the property, or assist unauthorised persons to establish new dwellings on the land. Once again, it is unlikely that changes in land use by sellers of catchment protection services would fall foul of these provisions. However, people occupying land on this basis may be evicted if they are in contravention of the provisions of the Act [see Sections 10, 11 & 15].

The *Interim Protection of Informal Rights Act* provides temporary protection of certain rights for the duration of the land reform process. While this Act was originally intended as a temporary measure, it is now extended on an annual basis while the land reform process is being implemented. This Act provides secure tenure rights in the old national states, trust lands, and self-governing territories established under the apartheid system. This Act

provides similar protection for people in these areas as is provided for in the other Acts and includes use of, or access to, land under *inter alia*:

- Tribal, customary or indigenous law;
- Customs, usage and administrative practices in any area or community; and
- Beneficial occupation of land for a period of more than 5 years prior to 31 December 1997.

This will typically include much of the land that may be considered for catchment protection services, and would provide for secure tenure in most of the tribal areas.

4.2.3 Land restitution

The aim of the land restitution programme is to restore land to people who were forcibly dispossessed under the apartheid system, and it is governed by the *Restitution of Land Rights Act* (Act No.22 of 1994 Republic of South Africa 1994). This was the first Act dealing with land reform promulgated by the new government, and provides for the restitution of land to people who were forcibly removed after 19 June 1913. Communities and people wishing to lodge a claim with a Commission on Restitution of Land Rights had to do so within a prescribed period (1 May 1995 to 31 December 1998⁴). A total of 63 455 claims have been lodged of which 29 877 have been finalised (Badenhorst et al. 2002). The current extent of land under claim is therefore known, and efforts to the establish markets for catchment environmental services should first determine if the land in question is subject to a land claim.

Restitution of land under this legislation provides the security of tenure required to engage in possible catchment environmental services.

4.2.4 Opportunities and constraints offered by land reform

The legislation dealing with land reform in South Africa is complex, and is made even more so by the difficulties in determining exactly who is covered by the relevant legislation. Moreover, an increasing body of case law has highlighted that the tenure rights provided by the legislation may be compromised by individual circumstances. The ownership or security of tenure of any particular piece of land is therefore often not clear cut, and rests largely on the history of the occupation of the land since 19 June 1913. However, the overall intent of the legislation is to allow government to take proactive steps to improve the security of tenure for poor South Africans, while protecting existing ownership and landlord's rights.

The circumstances of ownership or tenure of the sellers of catchment services would therefore have to be individually investigated. Nevertheless, where people have occupied the land for several years, legislation is likely to provide some security of tenure. In these cases, the occupants are likely to be able to engage in changes in land use as part of establishing catchment environmental services, provided that these land use changes are not detrimental to the owner of the land.

Moreover, most land reform initiatives include financial support mechanisms, which when used together with markets for catchment environmental services, could offer improved livelihoods.

⁴ Recent media reports have suggested that the claims process may be re-opened.

4.3 Mining outreach programmes

The *Minerals and Petroleum Resources Development Act* (Act No. 28 of 2002) requires all mines to establish local economic development programmes (Republic of South Africa, 2002 - [S46 (c)]). These programmes must *inter alia* include infrastructure and poverty alleviation programmes supported by the mine, and aligned with the Integrated Development Plan of the area. While this does not necessarily focus on the provision of catchment environmental services, promoting these opportunities as part of the outreach programmes may hold win-win opportunities, particularly if the mine is a water user. The commissioning of any mining ventures would also inevitably require authorisation under both NEMA and the NWA.

Payment mechanisms for catchment environmental services could therefore target mines as potential buyers of these services as part of their mining outreach programmes. This may be particularly attractive if win-win solutions can be developed where the mine is a water user.

4.4 The Public Finance Management Act

The *Public Finance Management Act* (Act No. 1 of 1999) requires all organs of State, which includes all water management institutions, to obtain Treasury approval before establishing any charges under the relevant governing legislation (Republic of South Africa 1999). More importantly, once established, such charges may not be waived. The pricing strategy (DWAF 1999) therefore does not make provision for the waiving of charges.

It will therefore not be possible to agree to reduce or waive water use charges if the user is making a direct payment to a community as part of a catchment environmental service.

5. Conclusions

The South African situation appears to be well suited to payments for catchment services. The extent of poverty in rural areas is in most cases offset by a well-developed water-using economy, which provides opportunities to promote win-win market mechanisms to support poverty reduction as well as water resource protection. Moreover, government policies support proactive actions for redress, but in an environmentally responsible manner that does not affect the stability of the economy.

However, much of South Africa's relevant legislation is also relatively new, and has been developed based on the most recent thinking on environmental protection and water resources management. Because of this, many potential environmental or catchment services are already (or can be) subject to legislative controls and/or payments. Many potential buyers may therefore expect these services to be addressed as part of existing water resource management charges.

In addition, the sellers' activities, in some cases, may be subject to authorisation and control. These issues do not, however, preclude the promotion of markets for catchment environmental services as additional mechanisms where the economic advantages warrant it.

Within this context, many potential buyers for of these services may see themselves under threat. The State has already placed significant additional burdens on these users to help achieve equity and reform goals, and they may therefore be somewhat unreceptive to legislative requirements for the payment of additional services. Nevertheless, legislation is unlikely to prevent any private 'willing buyer, willing seller' arrangements for catchment protection, provided that the activities promoted by the payment mechanisms are not subject to authorisation by any responsible authority.

The wide-ranging legislation supporting the land reform process is also likely to offer the security of tenure required for communities to engage in catchment environmental services arrangements. This is perhaps particularly true for the tribal areas, where the project is likely to concentrate.

In summary, the greatest opportunities for establishing markets for catchment protection services lie in the following circumstances:

- Where the sellers' activities do not require authorisation, or where the responsible authority is unlikely to insist on regulating the activity;
- Where the responsible authority is unlikely to regulate the activities due to resource constraints;
- Where the buyer is willing to pay for the service in addition to any existing water resource management charges, and where the value of the benefits is significant to the buyer;
- Where the buyer is not a water user and as such is not subject to user charges, but where there are still economic advantages to engaging the service;
- Where the CMA is not yet established, or has no desire to formally regulate the activities and/or payments; or where the CMA can be persuaded that this supports the establishment of their initial functions without placing a significant administrative burden on newly-established agencies;

- Where the arrangement is seen as a temporary measure to help poor communities engage the economy in their own right, i.e., where the poor are not paid to stay poor; and
- Where there is already security of tenure, or where the land reform process is, or will be, taking actions to secure tenure.

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