Households' preferences and willingness to pay for multiple use water services in rural areas of South Africa: An analysis based on choice modelling#

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Abstract

Financing of multiple use (i.e. domestic and productive) water services was identified as an important ingredient to ensure improved water access for rural poor and broaden livelihood options in South Africa. Following the principles of integrated water resource management (IWRM), efficient, equitable and sustainable investments in improved water services should be based on a thorough understanding of actual demand by consumers. Comprehensive studies looking at multiple use water services are not common in South African rural areas, where most of the economic analyses focus on either domestic or irrigation water demand. This study aims at filling this gap by assessing the household demand for multiple use water services in Sekororo-Letsoalo area in the Limpopo Province. Choice modelling is the approach used to identify the attributes determining demand for water services and quantify their relative importance. Results show that households in rural areas are willing to pay for improvements in water services. Due to the current poor level of water services in the area, users are primarily concerned with basic domestic uses and, consequently, demand for productive uses is low. Only households already relatively well served are interested in engaging in multiple water uses.

Keywords: choice modelling, multiple water uses, domestic water demand, water services, willingness to pay

Introduction

Water scarcity is considered to be a major constraint to socio-economic development in South Africa (SA) (DWAF, 2004). In most parts of the country water resources are already fully utilised or overdrawn. The agricultural sector is the highest consumer of water, accounting for about 62% of the total water used, while domestic and industry water uses represent 32% (5% in rural areas) and 6% respectively (AQUASTAT, 2005).

Following the principles of integrated water resource management (IWRM), the efficient and equitable allocation of water resources involves important trade-offs between different potential users. At the projected population growth and economic development rates, it is unlikely that the national demand for water resources will be met in the near future. Conversely, increased competition among water users for the scarce resource can be expected. High pollution levels of surface and groundwater resources due to industrial effluents, domestic and commercial sewage and agricultural runoff, contribute to worsen this situation (DWAF, 2003).

Domestic water uses in SA are characterised by significant inequities in terms of access to the resource and quality of services inherited from the apartheid era policies of 'separate development'. To redress this situation, several institutional and policy reforms were undertaken after the end of apartheid. The Water Services Act of 1997 and the National Water Act of 1998 provided the legislative framework for water services and water resource management respectively (Republic of South Africa, 1997a; b; and 1998). Under the Water Services Act, provision of free basic water (25 ℓ/cap·d) and sanitation services for all end users was considered a priority (DWAF, 2004).

In addition to the provision of free basic water, financing of multiple use water services was identified as an important ingredient to ensure improved access to water for rural households and at the same time allow productive uses and broaden livelihood options for the poor in SA (Lefebvre et al., 2005; Hope et al., 2003; Van Koppen et al., 2006). Recent evidence has indicated the potential contribution that productive use of domestic water might make to food security and poverty reduction in rural areas of SA (Hope et al., 2003; Hope and Garrod, 2004; Smits et al., 2006).

However, free provision of water above the basic level is not without risk, as, if not carefully controlled and managed, it could place unsustainable demand on a resource already under pressure. Furthermore, the necessary public investments to provide additional water would represent a financial burden for the local and central governments. An option to make financially viable the increased and improved water services in rural areas could come from the (partial) coverage of the investment and operating costs determined by these services through the introduction of water user fees. To this purpose, some authors indicate that the raising of revenue from consumers is central to cost recovery of current investments and future up-scaling of water services (Goldblatt, 1999).

Efficient, equitable and sustainable investment in improved water services should be based on a thorough understanding of effective consumers' demand for multiple use (both domestic

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Revised version. Originally presented at the International Conference on Integrated Water Resource Management (IWRM) entitled: *Lessons from Implementation in Developing Countries* which took place from 10 to 12 March 2008 in Cape Town, South Africa, at the Cape Town International Convention Centre.

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