

SOUTH AFRICAN PUBLIC PARTICIPATION IN MANAGEMENT OF REMAINING CONVENTIONAL WATER RESOURCES

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Abstract

Since 1994 the development and management of conventional water resources (i.e. surface and groundwater) have undergone in South Africa a significant transition process which emanated from the fundamental changes in water legislation. The new water laws are based on the principles of universal franchise and equity in access to water services provision (i.e. water supply and sanitation) and providing also for the reserve allocation representing the basic human water needs and ecological requirements.

The signals being received from implementation process of new water legislation, highlighted a seriousness of water scarcity in South Africa. The limitation in availability of conventional water resources are related to the region's natural aridity and relatively poor geohydrological conditions. Although numerous arbitrary choices were already made in an approach to water resources management in recent years (e.g. water use licensing, free water up to 6 m³ per month per household, a legislation of 19 Water Management Areas and Catchment Management Agencies, etc.) the most critical choice will have to be made by the South African public in approving the National Water Resources Strategy (NWRS) proposed by the country's government. The public consultation meetings are being facilitated by the private sector agency on behalf of the government in all nineteen Water Management Areas to provide public with appropriate forums and information systems. The objective is to enable the public in educated choices how to manage the remaining water resources and to comment toward the NWRS. The key principles of the NWRS are sustainability, equity and efficiency. The complementary strategies are capacity building, public participation, education and awareness, and research in water resources.

The extent and present capacity of the primary water services infrastructure can cope with the demands imposed upon it. The sluggish performance of national economy (average growth rate of 2,5% at about 40% of potential labor force unemployed) kept seemingly the demand for water from conventional sources at low levels in recent years. These and the whole host of other symptoms should be the warning signs for future choices in management of remaining conventional water resources in South Africa, if the ambitions and aspirations of the region's population are to be satisfied on sustainable basis. Both, public and private sectors have equally critical roles to play in choices to be made and speedily implemented to safeguard the remaining resources and research in alternative new resources expensive to develop at present.

1 INTRODUCTION

The signals of water scarcity in South Africa have over the time manifested most visibly by the frequent usually localized and prolonged drought periods throughout the country's five highly diversified rainfall regions. The limitations in availability of conventional water resources (i.e. surface and groundwater) are related to the region's natural aridity and relatively poor geohydrological conditions. Both, the yield of surface and groundwater sources are comparably limited due to high evaporation and slow recharge rates respectively. The limited potential for groundwater abstractions occurs primarily in the fractured and weathered shallow secondary

aquifers over the watertight underlying strata. Such conditions can be generally applied for most areas in South Africa.

The proliferation of inter-basin water transfer schemes in South Africa indicates that the measures taken in the past dealt with looming scarcity of water in the regional context. Although the development of large water transfer schemes has been rather arbitrary solution under the supply-driven approach (or so called supply reliability approach) in managing the national water resources, South Africa is now in position of reasonably well developed primary water supply infrastructure (e.g. dams, trunk pipelines, pumping capacity, etc.). However, the conventional water resources are limited and finite and already developed up to sixty percent of exploitable potential.

Table 1: The diminishing rate in use of water as finite resource in South Africa

Year	Total national water demand (million m ³ p.a.)	Total exploitable runoff and groundwater (million m ³ p.a.)	Relative exploitation (%)	Diminishing rate of finite resource (m ³ /capita/annum)
1965	8 300	36 600	23	1 930
1970	12 480	36 600	34	1 600
1975	13 970	36 600	38	1 400
1980	16 290	36 600	45	1 250
1985	14 690 (drought)	36 600	40 (drought)	1 100
1990	18 300	36 600	50	960
1995	20 700	36 600	57	880
2000	22 000	36 600	60	850

Sources: DWAF, WR 90 and Statistics SA (Census records)

The political and socio-economic problems inherent to South Africa since the colonial times were particularly suppressed during the era of separate development doctrine between 1948 and 1994. The back-log generated in needs for mainly residential water supply and sanitation services provision in both urban and rural South Africa appeared almost immeasurable in 1994 when the new political order have taken place. Since the new political and socio-economic relations among all diversified groups and communities are now maturing, new trends are emerging in all spheres of life in South Africa. The water services provision sector has been in the forefront of the national transition process in providing more equitable way in access and provision of water services. Both, urban and rural communities benefited considerably from this intense socio-economic transition process. New trends, however, generated needs in redefining established standards and many obsolete practices related to water services provision planning and development had to be taken off the established procedures and replaced with more innovative and appropriate methodologies.

The much-amended 1956 Water Act was replaced by two new laws: the 1997 Water Services Act (WSA) and the 1998 National Water Act (NWA). Rowlston et al (1998) suggested that the introduction of new water legislation presented considerable technical and institutional challenges to South African water managers in devising new ways how to approach and ultimately to solve unaddressed and previously underrated water services provision and water resources management issues.

2 PUBLIC PARTICIPATION IN WATER MANAGEMENT IN SOUTH AFRICA

2.1 Public Review of the Water Supply and Sanitation Policies

To reflect the changes generated from the transformation process of local government and municipal financial arrangements implemented since 1994, the Minister of Water Affairs and Forestry invited the South African public to participate in discussion on review of the water supply and sanitation policies. The document titled the Draft Water Services White Paper was prepared by the DWAF and made available for public consultation workshops, meetings and individual comments since April 2002. The public participation process on review of water supply and sanitation policies was run entirely by the DWAF. This approach was different to the public participation campaign on the National Water Resource Strategy (NWRS) which was introduced to the South African public by the DWAF in partnership with the private sector. However, both processes were conducted in parallel to each other.

The consultation process on water supply and sanitation policies had to accommodate the three-tier water services provision sector which is well established in South Africa. The water services sector's keys stakeholders and their sizes are listed in table below:

Table 2: Three-tier water services provision sector in South Africa

Item	DWAF	Water boards	Municipalities	Total for SA
Assets (R billion)	40	12	50	102
Investments (R billion p.a.)	1,2	1,0	2,8	5
Turnover (R billion p.a.)	1,7	3,5	6,8	12
Staff (approximate)	22 000	8 000	40 000	70 000

The South African water boards are either government-owned or privately owned companies providing primarily the potable water supply service provision most commonly in terms of contract with the government departments or municipalities (i.e. according to the public-private partnership models e.g. BOTT or a concession). Most of municipalities in South Africa provide full water services cycle including of water supply, distribution of potable water and collection as well as treatment of wastewater generated by the residential and industrial water users. The storm water collection and disposal services are also provided by the most municipalities. However, the storm water services provision is not yet covered by the contemporary water legislation.

The first-round of public consultation process has taken seven months through the bilateral meetings between DWAF and the key public sector stakeholders (e.g. National Treasury, Department of Housing, etc.), workshops at the regional, provincial and municipal levels, and by presentations to the civil society groupings (e.g. unions, water committees, etc.). The public participation process subscribed to the national motto as follows: "Water is Life, Sanitation is Dignity". The SA Government entered the campaign by setting priorities in reduction of the backlog in services by 2008 in the provision of water supply and 2010 in the provision of sanitation.

The policy on water services provision promulgated in 1997 Water Services Act referred to the rights and obligations of the water services user and providers as perceived prior and during the first few years of new political dispensation in South Africa. The major changes identified as different to the 1994 White Paper are as follows:

- the proposed white paper is a comprehensive policy paper for the water services sector as a whole,

- local government is now the key focus for delivery,
- The functions given to water boards in the 1994 White Paper and the Water Services Act are reviewed,
- DWAF will become a sector leader, supporter and regulator (rather than an operator),
- the role of the private sector in water services provision is clarified,
- the financial policy framework reflects the consolidation of national government funding to local government through the equitable share and the municipal infrastructure grant,
- municipal capacity building initiatives, assets management and adequate financial planning are promoted, and
- more emphasis is placed on sustainability and the ongoing provision of efficient and reliable services.

However, the capacity of the government to go alone without the support from the private sector in provision of water services would be certain failure. The sustainable water service provision due to lack in capacity is the key constraint with regard to the past experience particularly in the rural South Africa. Since 1994 numerous community-based organizations developed and run small water schemes in rural areas to varying degrees of success. Many of them abandoned their systems due to particularly a lack of capacity and expertise in efficient and profitable operation of such systems.

According to Khambule (2003) the process of reviewing 1994 White Paper and Water Services Act (Act 108 of 1997) is not yet fully finalized and it is at this stage under the final scrutiny of the DWAF for submission to the SA parliament.

2.2 National Water Resources Strategy

The South African National Water Resources Strategy (NWRS) originated from the Water Law Principles (approved by SA Cabinet in November 1996), the SA Constitution and Agenda 21 guided the National Water Policy for South Africa (adopted as Government policy in April 1997) and the National Water Act (signed into law in August 1998). Both the WSA and NWA, however, provided the principles and legal framework for development of the NWRS.

The promulgation of new water legislation and revision of municipal laws brought up a number of important implications for the development and management of remaining water resources in South Africa. Among many changes, the groundwater is no longer private water and it is now recognized as a public resource. The water users of all use

categories (with exception of domestic water use) have to be licensed and must apply for a license to enable the optimal allocation of water resources at regional and local resource availability. The legislation also recognizes basic human water needs of present and future generations as well as the legitimate right of the environment to an adequate supply of water. A volume of water thus has to be set aside before the remaining water is reallocated for other uses. This allocation is referred in the NWA (1998) as a Reserve. The Reserve is defined as the quantity and quality of water required ensuring the following:

- the basic human water needs by securing a basic water supply, as prescribed under the 1997 Water Service Act, and

- the aquatic ecosystems ecological requirements will be provided and maintained to secure sustainable development and use of water resources, as prescribed under the 1998 National Water Act

Based on these two new concepts the NWRS quantifies a strategic framework for water resources management within the Water Management Areas (WMAs) that are becoming to be managed and guided by the significant public participation influence through the Catchment Management Agencies (CMAs). Constitutionally, the prime responsibility for managing of South Africa's surface and groundwater resources rests with the national government represented by the Minister of Water Affairs and Forestry. The provision of water services (i.e. water supply and sanitation) is shared between the Department of Water Affairs and Forestry (DWAF) and other Water Services Institutions (e.g. water boards, municipalities, various consortia of consultants and developers, NGOs, etc.). In principle the provision of water services to the end water user is developed and managed along the three-tier water services hierarchy (i.e. State, Water Boards and Local Government).

The advent of new legislation and subsequent law implications generated the urgent need in mobilizing support in all sectors of South African society for implementing the NWRS and challenges associated management of remaining water resources. The Summary of Proposed National Water Resource Strategy was published in eleven official languages for comments by the general public in the Government Gazette in August 2002. The general public was invited to comment on the key objectives of the NWRS as follows:

- the country as whole has not much water to spare, our water resources (i.e. surface and groundwater) face growing demands and serious scarcity in the future if not looked after,
- the SA Constitution guarantees to everyone of us equal access to water of sufficient quantity and acceptable quality,
- it is everyone's obligation that water is not wasted and that it is used efficiently,
- the remaining resources must be managed to ensure that there is enough water for basic human needs and natural environment, now and in the future,
- both, public and private sectors must work together to ensure that there is enough water for a healthy economy and prosperous society, now and in the future,
- even as the water is recognized in South Africa as a social and cultural good and not merely as an economic commodity, everyone should pay their share for the cost of water they use,
- both, public and private sectors must make sure that the potential use of non-conventional water resources (e.g. re-use of wastewater, rain harvesting, desalination, etc.) is researched for the benefits of future generations, and
- the country must honor our international obligations to our neighbors, namely Botswana, Lesotho, Mozambique, Namibia, Swaziland and Zimbabwe.

2.3 Collaborative involvement between decision-makers and general public

To enable the collaborative involvement of the decision-makers, stakeholders and the general public in implementing of the NWRS, the process of introducing the Strategy to the SA public has been outsourced through a private sector consultancy experienced in facilitating the public

participation projects. The project was budgeted at Rand 5,4 million (or US\$ 0,7 million in 2003) to be implemented between November 2001 and March 2004.

The agent in charge of implementation process had to organize own programme in facilitating the NWRS to all levels of general public within nineteen WMAs during year 2002. The programme included presentations at public participation meetings, workshops and penetration of urban and rural public by the radio, TV and printed copies of the NWRS.

Three versions of the Strategy were prepared and distributed. The full version of 275 pages in English language, the Government Gazette version of 40 pages in English, and the Information Document of 16 standard pages in all 11 official language were distributed around the country either by means of hard copies, as emails, CDs and access to websites. Pietersen and Greyling (2003) estimated that the overall dispensation of the written documentation reached about 100 000 copies of the NWRS to all levels of South African public during 2002.

The focus of consultation process on the NWRS between SA public and organizers has been directed to the public meetings arranged and located in each of nineteen Water Management Areas (WMAs). Twenty four public meetings were conducted for the benefit of public consultation and involvement in the NWRS. Another twelve workshops were staged to enable the special interest groups (e.g. water and wastewater professionals, mining and industrial interests, agricultural specialists, etc.)in conveying their inputs . The illustration of participation numbers and the levels of representation from various sectors of economy within the specific WMAs is given in table below:

Table 3: Public participation in the NWRS meetings at various Water Management Areas

WMA public meeting	Public attendance (people)	<u>Public sector</u> (state departments, provincial & local government)	Para-state organizations & institutions	<u>Private sector</u> (industries, mines, consultants, NGOs, private individuals)
Crocodile/ West Marico	170	77	14	79
Incomati	110	28	6	76
Upper Vaal	112	43	16	53
Rest of WMAs	1177	564	139	474
All WMAs	1569	712	175	682

Sources: Public meetings participation records by Golder&Associates (2003)

The Crocodile/West Marico and Upper Vaal WMAs are the foremost water management areas in South Africa contributing economically to the overall GGP with 25 and 20 percent respectively. Incomati WMA contributes marginally by one percent to the overall GGP. The proportional distribution between the public and private sectors participation appears to be rather balanced indicating that the issues which have raised from the participation meetings represented more less equally both sectors.

The NWRS has been introduced to the general public in sixteen sections representing a framework in which all the different strategies that are needed to manage water resources can come together in a structured way.

Table 4: Ranking of interest and response to the NWRS during public meetings

Rank of interest	Aims, objectives and activities as proposed by the National Water Resource Strategy (NWRS)	Issues risen by the public at WMA venue	Number of non-participating WMAs	Thrust of response and involvement (%)
1	SA's water situation and strategies to balance supply and demand	130	All participated	100
2	<u>Strategies for resource management:</u> Water pricing & financial assistance	124	2	89
3	<u>Strategies for resource management:</u> Water use	98	1	95
4	<u>Strategies for resource management:</u> Protection of water resources	89	2	89
5	<u>Strategies for resource management:</u> Water management institutions	67	2	89
6	Public participation process	61	4	79
7	Water supply and sanitation	51	4	79
8	Complimentary strategies	47	6	68
9	National planning and cooperation in water management	46	5	74
10	<u>Strategies for resource management:</u> Water consrvtn & demand mngnt	28	4	79
11	Other issues to the NWRS	24	11	42
12	<u>Strategies for resource management:</u> Monitoring and information	22	8	58
13	Water policy law and resources Management	14	7	63
14	<u>Strategies for resource management:</u> Financial implications	10	13	32
15	<u>Strategies for resource management:</u> Public safety	8	12	37
16	<u>Strategies for resource management:</u> Programme of activities	7	13	32

Sources: Public meetings participation records by Golder & Associates (2003)

Next to some 900 issues and comments collected by the facilitating agent during the public participation meetings at the WMA venues, another 1000 written issues and comments were received by the DWAF from the general public up to the deadline in January 2003. The DWAF is now in stage of processing and evaluating all inputs to the

strategy various sections, aiming to accommodate most valuable inputs by March 2004. It is intended by the government to revise the NWRS at five years intervals.

3 PUBLIC PARTICIPATION IN PLANNING OF WATER SERVICES

3.1 Traditional versus advanced planning approach

There is currently a considerable spare capacity in primary water supply infrastructure in South Africa. This indicates that the decision-makers of the past relied on relatively crude methods and assumptions when they were determining future demands for water services. The past water demand projections were mainly based on the traditional planning approach and water management practices of the principle of supply reliability (or so-called supply driven approach). This meant that the projected demands for water services were mainly satisfied by

the development of new water resources further and further from the point of supply. Traditionally, demand projections were not allowed to be reviewed by all stakeholders on regular basis and thus, non-integrated water management practices prevailed.

The new NWRS is based on water conservation and demand management principles and it is believed that by adequate training in demand forecasting together with ongoing feedback from the NWRS implementation process, remaining water resources are to be developed responsibly.

The primary objective of a more advanced (or so-called demand responsive) approach to planning for sustainable development (or enhancement) of water services in South Africa is to provide for a full integration at all three key levels of water services provision (i.e. State, water boards and municipalities). Although the NWRS is to rectify further the legacy of the past supply reliability development approach, the strong emphasis must be given to the economics of water services development to ensure efficient and sustainable development of remaining water resources.

Application of the advanced approach to development and management of water services will need to accommodate a broader understanding and application of engineering economics, in particular the principles related to microeconomic theory.

3.2 Types and levels of public participation in management of water services

Gomez and Nakat (2002) addressed community participation issues on the background of international experiences of public participation in the water supply and sanitation field using case studies given by Cummins (1997), FAO (1997), Rietbergen-McCracken and Narayan (1998), and White (1981).

Three main types of public (or community) participation in development of water supply and sanitation are referred to in the literature available on this subject:

- extractive participation – this approach utilizes extraction of needed information from the community (or water users) by means of questionnaire surveys conducted from outside of the community,
- consultative participation – in using this type of public participation the external agent investigates sentiments about the relevant issues by the individuals or whole community, however, the external agent determine both problems and solutions, and
- interactive participation – in this process the joint analysis of relevant issues is taking place between the community, stakeholders and the decision-makers, the process should lead to a refined action plan, agreed by all interested parties

Essentially, the type of public participation determines the role which has to be assumed by each stakeholder and the level of participation will determine the depth of involvement assumed to be taken by each stakeholder involved in the process. There are numerous benefits to be obtained from implementing public participation approach in the development and management processes. Most relevant benefits can be summarized as follows:

- public participation facilitates the community empowerment and capacity building,
- public participation increases the level of commitment to the common goal,
- public participation creates relevant partnerships, and

- public participation increases self-esteem and brings forward the local knowledge and skills

However, there would be also numerous disadvantages, namely the experience in conducting public participation is needed, it would be more difficult to reach consensus, and whole process would be rather lengthy and might be also expensive.

4 CONCLUSION

There is no doubt that the South Africa's remaining water resources will be developed according to the advanced planning and development approach. The proposed NWRS has been well introduced and scrutinized by the general public. However, it is rather surprising that the preliminary evaluation of available information from the participatory process indicates that the general public is so little interested in the financial implications, public safety and overall programme of activities in the development of remaining water resources in South Africa. More detailed reasoning should be investigated by the DWAF in their final evaluation of all inputs and level of detail as well as quality of various issues and comments.

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REFERENCES

DWAF, (1997). **White Paper on a National Water Policy for South Africa**. Department of Water Affairs and Forestry. Pretoria. RSA.

DWAF, (2002). **Water is Life, Sanitation is Dignity**. Draft White Paper on Water Services. Department of Water Affairs and Forestry. Pretoria. RSA. October.

Golder & Associates (2003). **Personal communication**. Pretoria. RSA. June.

Gomez, D.J. and Nakat. C. A. (2002). **Community Participation in Water and Sanitation**. *Water International*, Vol.27, No.3, September. 343-353.

Khambule, T. (2003). **Personal Communication**. Department of Water Affairs and Forestry. Pretoria. RSA. March.

NWRS. (2002). **National Water Resources Strategy for South Africa**. Information Document. Pretoria. RSA. August.

Pietersen, T. and Greyling, T. (2003). **Access to information for a rainbow nation**. Presentation at the Conference of International Association for Public Participation, Ottawa, Canada. May.

Rowlston, B., Barta, B. and Mokonyane, J. (2000). **Implementing New Water Law: A South African Experience**. Proceedings of Xth World Water Congress, Melbourne, Australia. April.

The **National Water Act 36 of 1998**. Pretoria, RSA.

The **Water Services Act 108 of 1997**. Pretoria. RSA.