



water & forestry

Department:
Water Affairs and Forestry
REPUBLIC OF SOUTH AFRICA

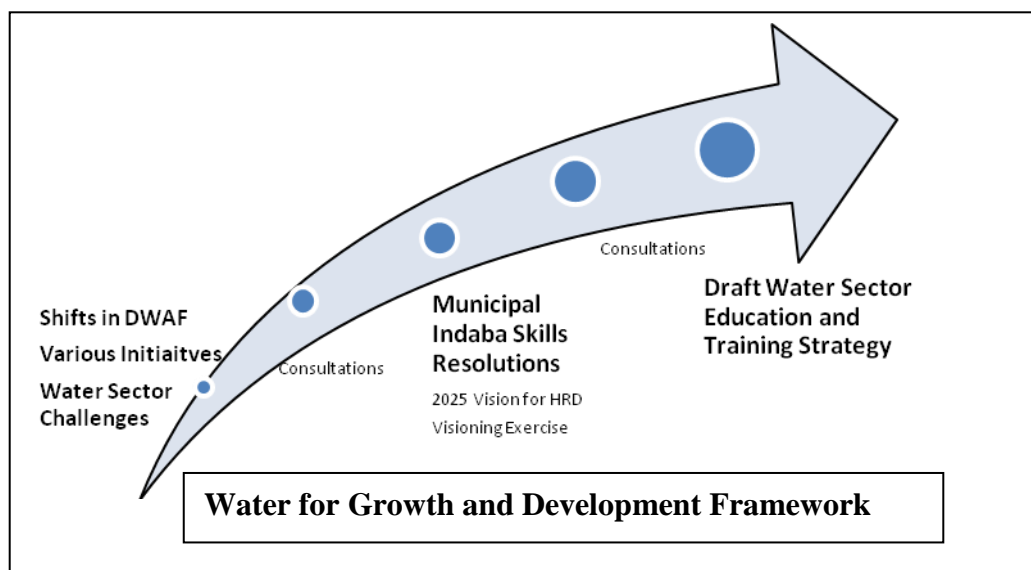
A Draft Education and Training Strategy

***A response to Water for Growth and
Development***

1. Executive Summary

1) Introduction

The Director Strategic Support in the DDG Regions office began a process of strategic review of the 2020 Vision for Water and Sanitation Education Programme in November 2008 with the aim of developing a strategic plan for the programme. The strategic review carefully considered the strategic shifts within DWAF, the Water for Growth and Development Framework, which required a comprehensive education pillar to underpin it, the Municipal Indaba Skills Resolutions and the various education, training, human resource, skills development and public awareness initiatives within DWAF.



The consultative process up to April 2009 included but is not limited to engagements with all the role-players involved in 2020 education programmes, internal DWAF stakeholders, other government departments and agencies, external roleplayers, and regional and international interests groups.

2) Guiding Principles

The review is guided by following principles:

- a) “The shortage of skills in the water sector and the continuing loss of skilled personnel remains one of the highest risk in relation to the provision of effective water services and water resources management” (Report to ASGISA IMC, June 2008) and as such would require a radical strategic intervention.
- b) The relevance and efficacy of the programme needs to be assessed against the broad changes and shifts within DWAF which in turn are informed by the Growth and Development Framework.

- c) The programme assessment and review needs to be informed by the various education, training, public awareness and skills development initiatives within the department and the municipal indaba skills resolutions. Responding to the skills shortages within the water sector should be one of the central tenets of the new strategy.
- d) South Africa faces a plethora of challenges in the water sector which is closely tied to our ability to provide for human security. Water is central to human security, development and sustainable livelihoods.
- e) The link between water sector skills development, education, training and public awareness should be mutually reinforcing, conceptually logical, coherent and practicable.
- f) The expression of water related challenges in South Africa today has a direct link with the present education, training and public awareness strategies of DWAF. That is, the present education, training and public awareness strategies might be contributing to the water related challenges.
- g) “Deep”, pedagogically sound education, training and awareness are of utmost importance and are crucial investments into water literacy, human security and growth and development.
- h) Streamlining, alignment, reconfiguration and strengthening of disparate educational and skills development interventions are desirable to improve the efficiency and effective of the strategy and to enhance the effective, efficient and economical use of resources.

3) The Main Findings

The main findings of the review:

- a) Water sector skills shortages and low water literacy levels are a result of a number of factors which collectively point to the lack of a coordinated, comprehensive and coherent education, training and public awareness strategy inclusive of all the related activities within DWAF.
- b) The public awareness and education activities within the sector are not coordinated or aligned with DWAF’s strategic objectives. Stated differently, there is a weak link between the mandate of DWAF and its education, training, and public awareness modeling. Disparate education, training and awareness interventions are not rooted within stated, anticipated, DWAF related outcomes
- c) Though progress has been made over the past 10 years, the education, training and awareness activities of DWAF do not match the complexity and extent of the challenges it is trying to address.

- d) Part of the skills shortage and low water literacy challenges can be attributed to a fragmented approach to education, training and public awareness within DWAF.
- i. The HRD/ Skills development visioning exercise confirmed this fragmented approach and raises the questions of sector leadership, the location of responsibility, etc.
 - ii. The 5 municipal indaba skills resolutions require a coordinated education, training and public awareness programme.
 - iii. The Skills Action Plan which flow from the Municipal Actions Implementation and Monitoring Framework needs to be located in an all-inclusive strategy that is guided by the WfGD Framework.
 - iv. The municipal indaba skills resolutions are substantive steps forward. However, the resolutions focus on human resource processes such as workplace skills plans, retention strategies, etc as disjointed from a broader education and training strategy. Thus, it is geared more towards “managing” skills shortages and less geared towards having a “sustained response” to it.
- e) There is not a clear strategic link between water literacy, skills development, education and training.
- i. The cyclical and reinforcing link between skills, education, training and public awareness should be better articulated and more efficiently implemented.
 - ii. Resolution 4 of the municipal indaba acknowledges the need to conduct robust campaigns and to have a strong focus on schools.
 - iii. There is a lack of consciously designed alignment between public awareness, water education, water literacy, skills development and behavioural change.
- f) The positioning of education, training, and public awareness within DWAF does not do justice to the immense tasks that need to be performed. The 2025 Vision for HRD for example is practically unknown to top management and is reflected by lack of ownership in the department. At the time of drafting this strategy there were no human resources in the department working on the 2025 Vision for HRD
- g) Impact assessment and sector intelligence is inadequate resulting in a questionable knowledge base for which skills development and education strategies are developed.
- h) The skills shortage and low water literacy levels have regressive impacts on research and sector innovation and creativity.
- i) The employment of the curriculum in the formal education system from a DWAF perspective could be done better. The lack of a comprehensive, national curriculum engagement strategy is probably contributing to this weakness.

4) Main Recommendations

The findings of the review point to the need for an integrated and innovative, water education, training and public awareness strategy. In addition, the challenge of skills shortages suggest that an appropriate and adequate water-sector-skills development regime must of necessity be preceded and/or accompanied by an aligned and well-designed education and public awareness programme that advances water literacy.

It is through increased water literacy levels that the pool from which to draw candidate professionals will be enlarged. Higher levels of water literacy will also provide for an internal mechanism by which the relevance of educational and curriculum practices will be measured; contributing to values disruption, behavioural change and a new water management ethic; and presenting skills acquisition within the sector as a worthwhile professional choice. A new outcomes-driven model and strategy, radical in its simplicity, conceptually sophisticated and pragmatically achievable is proposed.

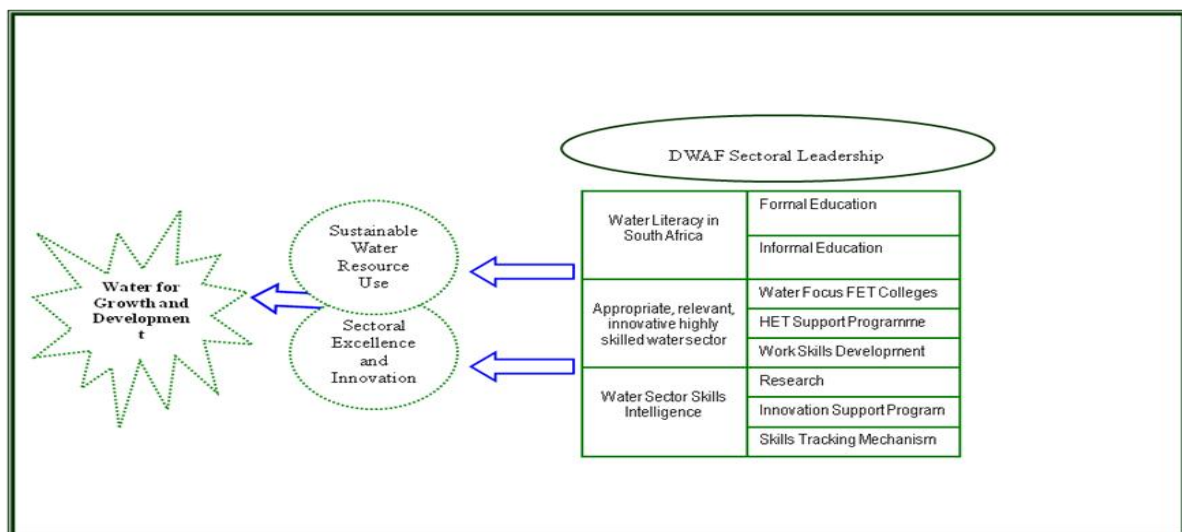
5) The New Strategy

The essence of the new strategy is summarized in the diagram and the table below, and has two main strategic objectives for DWAF:

- To achieve water literacy in the country through a comprehensive formal and informal public education programme, to affect positive attitudinal and behavioural change by all South Africans to water value and water use.
- To develop a sufficient, appropriately skilled water sector skills base that is able to meet current and future needs for the sector to achieve water for growth and development, through establishing Water FET Academies, an HET institutional support programme; Aligned Workplace Skills Development Programmes; and establishing a skills intelligence capacity within DWAF. Within this, to ensure that all occupational processes (even outside the water sector), include a strong water education component to meet the key objective of the WfGD framework, that water is central to all planning in South Africa

Strategic Level	Key Objective	Means	Scope
One	Achieve Water Literacy in South Africa to affect positive attitudinal and behavioural change to water value and water use	A comprehensive water education programme at schools (formal education) – comprising curriculum infusion, teacher development and resource material development	All Education Institutions in the country (FET, GET & HET bands)
		A comprehensive public awareness programme (informal education) – comprising directed campaigns and edutainment	South African Public

		/ e-learning & community based education programme	
Two	Sufficient, appropriately skilled water sector professionals able to meet current and future needs for the sector to achieve water for growth and development	Designated water focused FET Academies	Selected water focus schools
		HET institutional and learner support programme	HET Institutions Learners requiring financial support
		In-workplace skills development and retention strategies	Water Sector Unemployed and 'unprepared' graduates in water field
		Sectoral Skills Intelligence, Tracking, Research and Innovation	Water Sector



Given the high cost involved in public awareness strategies, DWAF should purposefully move towards a favourable input-output-impact ratio which in turn presupposes a radical rethink of public awareness and education as proposed in this strategy.

- The Public Education and Awareness Campaigns will take into account the communications objectives of DWAF's Communications division.
- The Campaigns will use the leverage of the communications objectives of the Department to strengthen links between public education and awareness (through systematic multimedia educational programmes interventions), as well as the public relations (through various channels of direct communications – i.e. events-driven media statements, etc.).

- The public education and awareness campaigns will be driven through multimedia platforms.
- Public education and awareness programmes will be based on life-long public educational objectives aimed at behaviour and attitude change.
- The message design and packaging processes will be informed by an educational goal and outcome, and the multimedia programmes will be aligned to the learning objectives driven through the national curriculum in the formal education system.
- The Public Education and Awareness campaigns will be designed mindful of other DWAF activities – in the communications division and/or any other divisions that coordinate special events. It is inherent in the campaigns that the multimedia products are aligned to special events and activities like Water Week, Sanitation Week, Weed-buster Week, Arbor Week. This also includes competitions and awards that are targeted at schools like BLM, *Aqu Enduro*, Forestry award, etc.

Public awareness deliverables for 2009

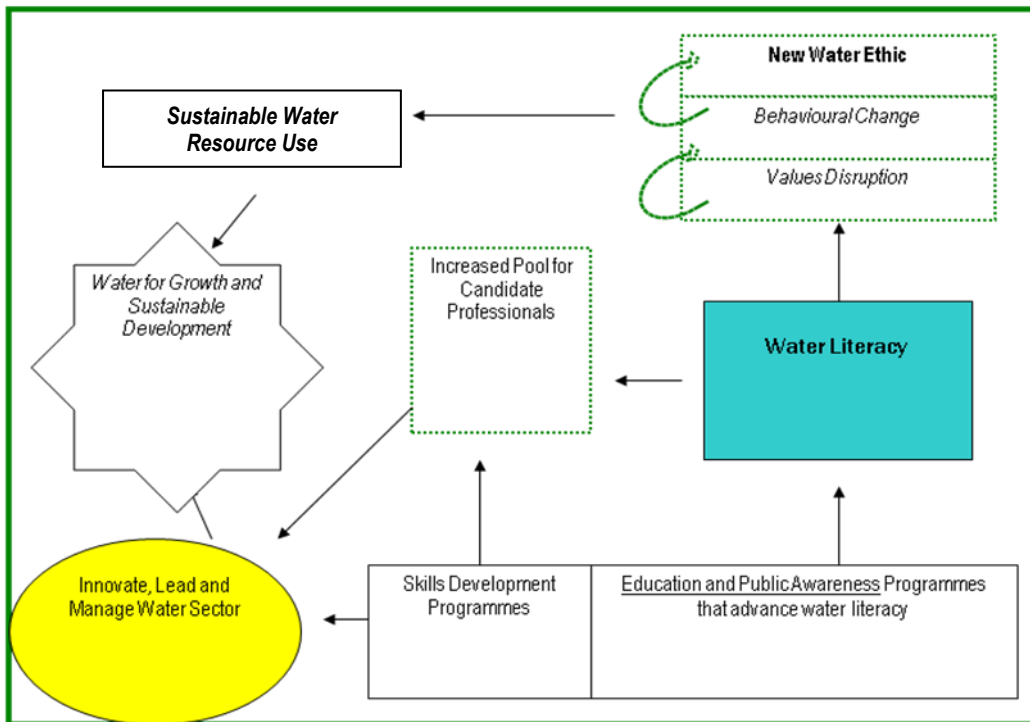
- A 32 part weekly 20-30 minutes *docu-soap* series and eighty 60 seconds PSAs on TV and radio (for 4 months) from October-December 2009. This includes special programmes (3-5 episodes) on Isidingo addressing issues of Acid Mine Drainage.
- 32 part Mobazines carrying similar messages with docu-soaps and PSAs from October-December 2009;
- 32 part 20-30 minutes radio magazine programmes from October-December 2009;
- Impact assessment report document for DWAF to use in reinforcing the multi-media strategy;
- Public hype about what the DWAF public education and awareness campaigns will be like in terms of look and feel. This will be done through the Minister's launch as few clips are showcased to the public during the launch;
- Multimedia production template to be used for national rollout of public education and awareness programmes;
- Web-based discussion forums for sharing or knowledge and exchanging best practices about water literacy and related messages

This approach will also help in ensuring a sustained and structured public education and awareness interventions for a life-long public education for influencing behaviour and attitudes.

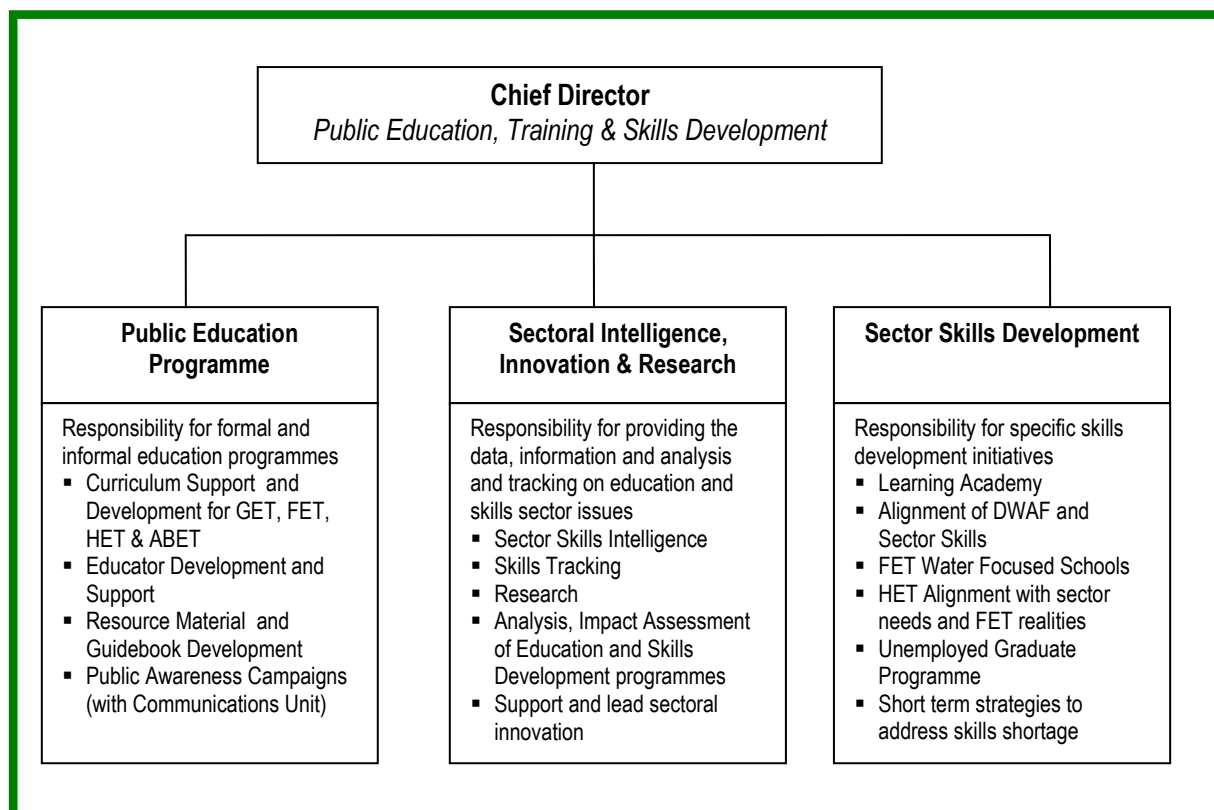
6) Key Requirements by DWAF:

- SECTOR LEADERSHIP: DWAF must embrace and act on its sector leadership role. There is already common agreement that DWAF must lead, as stated in the HRD/Skills Development visioning exercise. This strategy builds on this by illustrating the axiomatic and mutually reinforcing link between water sector skills, education, training and public awareness. The sector leadership role of DWAF must illustrate this link. It is proposed that DWAF convenes and chairs a sectoral reference group at national level that could constitute among other: the Department of Education; Department of Science and Technology; SETA's; HET's, and water sector stakeholders. DWAF could alternatively expand the role of the WSLG to incorporate all

the elements of this strategy and ensure that the DOE as its key institutional partner is catered for.



- PRIORITISATION AND ELEVATION WITHIN DWAF:** In order to play the sector leadership role illustrated above, DWAF must prioritise education and training. As proposed in the HRD/Skills Development visioning exercise of the department, this strategy supports the proposal to establish a dedicated capacity to drive this process at an appropriate level of authority. This strategy also supports the view in the visioning exercise that this should be at Chief Director Level with a full mandate and dedicated resources. This is more important and appropriate given the full scope of a programme that should integrate public awareness, education, training and skills development. The reality is that DWAF has not been committed to this programme – currently the HRD Vision 2025 has no capacity to drive the initiative. This situation needs to be turned around as a matter of urgency, as any education, training and skills initiatives focused in the sector alone, will not succeed unless there is both political and strategic leadership



PARTNERSHIPS

The formation, nurturing and development of sectoral other partnerships are critical to DWAF reaching the objectives of this programme. The following are the strategic partnerships that are critical to the success of this programme:

PARTNERSHIP PROPOSED	NATURE OF PARTNERSHIP
Department of Education	For implementation of the formal education programme in the GET, FET and HET bands
Department of Science and Technology	To assist with the selection of FET water aligned schools among the Dinaledi Schools To strategically align to innovation programmes of DST and to liaise on adequate capacitation of FET water focus schools
Department of Environment Affairs and Tourism	To investigate synergies between water education and environmental education where appropriate
DPLG and SALGA	Strategic partnership to ensure education and skills processes meet needs of sector
Sponsors and Donors	To support FET focus schools and financial assistance support learners in FET and HET Colleges
SAQA and NQF related structures	To get buy in and support for considering water for qualification and registration
Research institutions like WRC, CSIR	Research and innovation partners, supporting sectoral skills intelligence drive
Civil Society Organisations	Strategic support partners to compliment the education programme

HET Institutions and related bodies	Ensuring a curriculum and qualifications that supports the needs of the sector
SETAs	In-workplace skills development and support; qualifications

7) Short – Medium – Long Term Strategies

The following strategies are recommended (some already being undertaken in the department and in the sector) to mitigate the impacts of the skill crisis in the short and medium term

Short Term Strategies to Address the Skills Crisis (0-2 Years) 2009 - 2011

- **Targeted recruitment of engineers and technicians outside of South Africa.** These will be placed in the neediest Municipalities. This will relieve immediately the skills shortage in these municipalities, but also offer a base from which new entrants to the workplace can be mentored and facilitated into the workplace. This short term strategy is dependent on inter-country compatibility of water reticulation and wastewater treatment facilities, as well as water education/training codes and norms
- **Deploying full-time mentors to municipalities.** These mentors provide support to employees and managers in municipalities. These mentors will be drawn from engineers from other countries (as per programme above) and retired engineers in South Africa
- **Targeted recruitment of engineering learners in the final year of training** and in HET band in 2009 and 2010 to increase entry rate into the workplace in 2010 and 2011.
- **Extend retiring engineers tenure in the workplace** as a means of addressing directly the shortage expected as a result retirements due between 2009 and 2011
- **Unemployment Graduate Programme** to immediately increase capacity at municipal level. These will be on a programme of mentoring and retraining to meet the needs of the municipality and sector.
- **Learnerships** to support young engineers who have just obtained their qualifications and absorb them into the industry. Special learnership development programmes will be driven through multimedia programme

Medium Term Strategies to Address the Skills Crisis (3-5 years) 2011-2015

- Targeted recruitment of learners currently **in the Higher Education Training band** to secure their “tenure” in the water sector after their studies. This will be done through competitions and through the Multimedia public education and awareness campaigns. This would increase number of graduates entering the water sector between 2011 and 2013

- **Targeted recruitment of learners in Grade 12** with financial assistance scheme for the technical related fields of study in the water sector. This would increase number of graduates entering the water sector in 2014 and 2015
- A **workplace training programme** that will increase skills levels of those already in the sector to ensure alignment and appropriateness to sector's present and future needs
- Structured **mentorship programme**, building on the mentorship and learnership programmes implemented
- Specialised and sustained SABC Education (Radio and TV) programmes interventions for workplace training programmes promoting research and other professional skills programmes
- **Launch of a comprehensive Multimedia Public Education and Awareness Campaigns "2009 Season"**, in which water education and skills in the water sector will be focused on.

Long Term Strategies to Address the Skills Crisis 2016-2020 (and beyond)

- Targeted recruitment of learners in the FET band (grades10-12) into **Water Academies** will see increased uptake of learners in the HET band between 2012 and 2020. This will be done through the combination of competitions, the multimedia programme and the water education (curriculum) since 2009. The impact in the water sector: A strong increase in new entrants to the water sector field from the year 2017
- Rolling out of a **comprehensive water education and public awareness programme** in all schools, across all learning areas from the GET to HET band, will increase understanding of water issues, water sector and water related career fields and thereby increase the pool that will have an interest in and pursue water sector fields. The impact of this intervention will be felt from 2012, but the sustained, long term effects of this learning is likely to increase exponentially from 2012 and its full impact realised from 2020. This water education and awareness programme in all schools will be augmented by a comprehensive and sustained special public education and awareness programmes interventions on multimedia platforms, with core programmes on SABC Education (Radio and TV) and the community radio sector.
- A structured approach and interaction between DWEA as sector leader and institutions of learning in FET and HET band – to ensure that there is a **seamless transition for graduates** entering the workplace. DWEA to ensure that HET qualifications are aligned with the needs of the sector. The impact of this intervention will mean that from 2015, the phenomenon of unemployed or unemployable graduates in the water sector will decrease, therefore more new entrants into the water sector, but at a level that is in tune with needs of the sector.