

TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

KEY STRATEGIC AREA	KSA 22: Business Development and Innovations
THRUST	N/A
PROGRAMME	Water Research, Development and Innovation (RDI) Roadmap
TITLE	Water RDI Roadmap Skills Mapping Study
TOR	1009742

General context:

The Water Research, Development and Innovation (RDI) Roadmap is a high-level planning intervention that facilitates and guides refocusing of research, reprioritisation of funds, synergising of existing initiatives and ring-fencing of new resources to facilitate a more optimal water innovation system. The Roadmap is run as a partnership by the Department of Science and Technology (DST), Department of Water and Sanitation (DWS) and the Water Research Commission (WRC), with support from a range of sectoral partners.

The Roadmap focuses on seven thematic clusters:

1. Unlocking alternative sources of water
2. Governance, planning and management of supply
3. Improving adequacy and performance of infrastructure (built and ecological)
4. Financially sustainable “business” approaches for improving operational performance
5. Governance, planning and management of demand
6. Reducing losses and increasing efficiency of productive use
7. Improving monitoring and metering

Notably these clusters need to be interpreted in an integrated manner in order to understand the range of nexus issues that the water sector intersects with; relating to food, energy, human development and other issues .

One of the main pillars and focal areas of the Roadmap is to support high-end human capacity development for water research, development and innovation. The primary focus of this Roadmap’s skills development efforts is centered around post-graduate level skills (a mandate derived from the DST focus areas). Highly skilled individuals are key to enabling faster and more effective development and deployment of context-appropriate solutions to water sector challenges. Similarly, training (including short courses) is seen as a key aspect of driving the deployment of new knowledge and innovation into different implementation contexts.

The Roadmap, thus, has a range of targets around post-graduate student support over a 10-year period in the specific thematic clusters of the plan. These targets are based on an analysis and associated set of assumptions around the pipeline of capacity needed to drive mature research teams in the sector. A set of baseline numbers have been established from which the Roadmap Implementation Unit can track progress. The targets were not, however, sense-checked against a market demand study which assesses the ability of the sector to absorb or employ post-graduate students with water sector relevant skills. Given that these targets are an important focal point for the Roadmap Implementation Unit it is important to deepen this area of work.

The Water RDI Roadmap development process also undertook a national Water RDI capability mapping that provides insight into where different disciplinary skill sets, relevant to the water sector, lie around the country. This is an important map to keep updated as it lays the foundation for understanding where different competencies sit in South Africa, and allows more focused consideration on how best to support and structure RDI capability optimally.

The RDI Roadmap document can be found on the WRC website: www.wrc.org.za, Knowledge Hub/Research Report - search using keywords “National RDI Roadmap”, No. 2305/1/15.

Rationale:

The Water RDI Roadmap Implementation Unit has undertaken extensive sectoral engagements over the last two years. Universities, utilities, municipalities, government organisations, entities, and companies have been widely engaged. Through these engagements and conversations, a number of water-related human capacity development needs and opportunities have emerged.

Firstly, the national landscape has numerous water sector skills development initiatives (a market push). However, there seems to be limited understanding, beyond anecdotal evidence, of the market or sectoral demand for specific skills in the sector. This raises concerns about what students are being trained for, what the sectoral needs are, and what the employment opportunities will be for graduates once they leave their studies. A holistic water sector skills demand study is thus needed to inform approaches to training and upskilling across the sector. This work will need to be conducted with an orientation towards the future (and not just the current) skills needs. More specifically, the aspect of this study that focuses on research-related and postgraduate skills will be particularly important to inform WRC and Water RDI Roadmap strategy.

Secondly, interactions with universities have made it clear that there is a range of water sector relevant postgraduate training offerings available around the country. Some of these postgraduate courses have a specific water niche/focus whilst many have a more general disciplinary focus with an opportunity to specialise in water. Interactions to date suggest that this is a weakly coordinated space with limited awareness amongst universities about their overlaps, synergies and possible gaps in postgraduate training. This presents an opportunity to map out this space in a way that will promote more focused university coordination, collaboration and response to gaps for water sector postgraduate training.

Thirdly, it is clear that universities and a range of other institutions are driving short course training as part of their service offering and business model. From a Roadmap perspective, this presents a valuable opportunity to shift new knowledge and innovations into a space where practitioners and implementers are aware of the opportunities. Here again, there is weak coordination, awareness and synergising between the universities and other main players engaged in this space.

Finally, the importance of updating the existing Water RDI Roadmap capability maps has become clear, given the high levels of mobility and change amongst water experts in the sector. This is an important area of work to keep updated as it informs opportunities and thinking relating to research chairs, communities of practice, centres of excellence, water institutes and other models.

Objective:

To undertake a Water Sector Skills Mapping Study focused on understanding water sector skills demand, mapping and analysing the water sector postgraduate training landscape, mapping the RDI relevant short course training landscape and updating the Water RDI Capability map.

Specific Sub-objectives:

1. Develop a water sector skills demand report (informed by robust methodology), that takes an overarching sectoral view (technical, vocational, specialised skills, etc).
 - Note that this work will need to have a current and future skills focus; and the section research and innovation-related skills needs will need to cover the full innovation value chain (research to commercialisation).
2. Develop a detailed map and identify gaps for water sector postgraduate training (Honours, Masters, PhD).
 - Note that this component should focus on generalist degrees that, due to institutional expertise, tend to have a strong water sector offering as well as postgraduate programmes more specifically tailored to water. Also, programmes that are particularly unique in terms of their approach, expanded skills development opportunities and their links with industry should be highlighted.
3. Develop a higher-level overview of the RDI relevant short course training landscape in SA, with a particular focus on university and main role player strategies and focus areas.
4. Update the existing Water RDI Roadmap Capability Map and identify capability gaps
 - Note that the previous survey, results and methodology will be made available to the selected project team.

These objectives will need to be strongly underpinned by timeous, focused, systematically structured engagements with a range of stakeholders (including university management, students, and lecturers; water sector institutions; state owned entities; and industry in general).

Deliverables:

The following deliverables need to be provided, but may be further tailored to suit the proposed methodology:

Deliverable	Timeline
Deliverable 0: 20% advance on signature of contract	On signature
Deliverable 1: Inception report highlighting the approach to the project	End Feb 2018
Deliverable 2: Updated RDI Roadmap Capability Map and gap analysis, building on the approach taken in the Roadmap Document	3 months from signature
Deliverable 3: Detailed literature review of relevant skills initiatives informing this study	6 months from signature
Deliverable 4: Postgraduate training map, gap analysis and recommendations (map to be presented in a user-friendly format that is accessible in print format and on a website)	By end of year 1

Deliverable 5: Short course skills landscape strategy and focus overview, gap analysis and recommendations	By end of year 1
Deliverable 6: Overall water sector skills demand report, with detailed insight into postgraduate skills demand. This must include recommendations on how to address the skills gap and roles for key institutions.	By end of year 2

Requirements

- Deliverable 2 and 3 need to be presented in a format that will make it simple for universities, industry, prospective students to have an overview of the various training offerings available nationally, and what their differences are. It should also encourage engagement between universities.
- The selected team will be expected to work closely with the Water RDI Roadmap Manager in the development of the project and engagements with stakeholders.
- Students should be linked to this project.

Time frame

2 years from date of signature.

Total funds available

R 1 200 000 including VAT.

Closing date

The closing date for submission of proposal is **Monday, 17 December 2018**.

Proposal Template

Please apply on the standard WRC template, attached. Submit a MS-Word and PDF version to Sarah Ravhudzulo.

Contact

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