TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

KEY STRATEGIC AREA	**Water Resource Management and Ecosystems**
THRUST	
PROGRAMME	
TITLE	**Cross-sectoral PhD tracing study**
TOR ID	**1009785**

General Objectives:

To trace the mobility, career paths and other attributes of a representative sample of PhD graduates from South African universities across a range of sectors and disciplines.

Specific Aims:

1. Investigate the demographic attributes, work experience, career paths and mobility of doctorate holders, including mobility between sectors (public, private and academia), into and out of the country (brain circulation) and into management roles. This will include distinguishing between short-term contract employment (such as postdocs) and long-term/permanent employment.
2. Working in tandem with other relevant initiatives, including the WRC Water RDI Roadmap skills mapping study (currently underway), provide an indication of supply vs. demand for doctorate holders.
3. Identify the dominant perceptions held by doctorate holders and selected employers of career opportunities in the public, private or academic sectors and the factors that lead them to choose careers in these sectors.
4. Benchmark the results of the WRC tracing study of water-related PhDs (currently underway) with those of this study and identify any water sector-specific factors that need to be taken into account in planning and decision-making for high-end skills in this sector.
5. Assess the progress of PhD graduates through the researcher pipeline (from being next generation researchers, to being emerging researchers and finally to being established researchers).

Rationale:

The training of doctoral students is a long and costly endeavour. The question of the return on investment on such long education and training endeavours is a policy concern from the public funders of education. Doctoral graduates are considered the best qualified for creating, implementing and disseminating new knowledge and innovation, and therefore information about the socioeconomic impact of their training is essential in knowledge-based and complex economies.

In 2010, South Africa produced 1 421 doctoral graduates (per annum) from its public university system, and by 2017 this figure had increased to slightly more than 3 000 graduates (per annum). The country's National Development Plan (NDP) instructs us to produce 5 000 PhDs per annum by 2030. Despite the encouraging and significant increases in the number of doctoral graduates per annum, it has been found that such increases are not concomitant with increases in the Research and Development (R&D) workforce as measured through different indicators in the annual National Research and Development Experimental Surveys. Similarly, there is a weak understanding of sectoral capacity to absorb these graduates into the workplace.

The WRC is in the process of finalising a tracer study of PhDs in the water sector. The emerging findings from the study have been shared with the Department of Science and Technology (DST), which is interested in establishing whether the findings from this tracer study are representative of trends across all scientific disciplines and sectors in South Africa. The undertaking of a wide multi-sectoral PhD tracer study will be of value to the DST pending the establishment and completion of a digital platform for tracking NRF-funded students which the NRF has been tasked to establish. This tracer study will help provide baseline trends for the digital platform.

In order to ensure compatibility between the results of the WRC water PhD study and this project, the approach to be followed by this project should sample PhD-holders who graduated in the period 2013-2018. The variables measured in the water study are encapsulated in the specific objectives for this project.

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Deliverables:

The following deliverables are indicative and may be tailored to suit the proposed research approach:

- Inception report, including proposed breadth and depth of study, research methodology and data collection tools
- Progress reports to the project reference group
- Draft final report for review by the reference group
- Final report and policy support documents, covering all aspects researched as per specific objectives

Expected Outputs

Lighthouse:

Knowledge Tree

Human Capital and Development in Water and Science Sectors

Informing Policy and Decision-Making

Transformation and Redress

Time Frame: 18 Months

Total Funds Available: (VAT Inclusive)

Year	2019/2020	R383 600,00
Year	2020/2021	R896 400,00
Year	2021/2022	R320 000,00