



TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

KEY STRATEGIC AREA (KSA) 4: Water Utilisation in Agriculture

THRUST 3: Water utilisation for poverty reduction and wealth creation in agriculture

PROGRAMME 1: Sustainable water – based agricultural activities in rural areas communities.

TITLE: Water – Energy – Food nexus narratives and resource securities

Objectives:

General:

- (a) The general aim is to conduct research that provides a synthesis of existing knowledge on Water – Energy – Food nexus from projects that have been primarily funded by the Water Research Commission and highlight how such research is in line with emerging global WEF nexus perspectives.
- (b) To identify the key drivers of the WEF nexus narratives and analyse how they can be applied in the context of southern Africa and other regions.
- (c) To conduct a state-of-the-art synthesis of such existing knowledge that is in grey literature, journals, reports, etc. and provide a one-stop shop for readers and end-users (multilateral institutions, government departments, water managers, researchers and policy makers).
- (d) To conduct a state-of-the-art literature review on past, present and ongoing work on the Water – Energy – Food nexus focusing on current status, potential, challenges and opportunities for intersectoral WEF Nexus planning. The review will pay attention to the adoption of the WEF nexus as a conceptual framework, discourse and analytical tool.
- (e) To guide a scientific discussion/programme/framework for linking the WEF Nexus to the Sustainable Development Goals (SDGs), paying particular emphasis on SDG 2, 6, 7 and 15.
- (f) To showcase the state of existing knowledge on Water – Energy – Food nexus and use it to answer current and future questions pertaining to trade -offs, synergy, intersectoral linkages, impacts etc.

Specific Objectives:

1. To identify the research (grey literature, journal publications, reports, popular articles, etc.) that have emanated from research funded by the Water Research Commission post-2012 as well as other initiatives in the region and elsewhere.
2. To convene a national stakeholder workshop including researchers who have been funded by the WRC during and before this period to identify key research questions that have been addressed and develop guidelines for writing a book that will provide a synthesis of the existing knowledge as a one stop knowledge shop.
3. To identify lead researchers who will contribute to the project and to coordinate the submissions from the different researchers and develop a draft report/knowledge synthesis addressing key areas related to Water – Energy – Food nexus issues.

Rationale:

In response to the global trend in adopting the WEF nexus approach, in 2012, the Water Research Commission (WRC) initiated its WEF Nexus Lighthouse with a goal to start championing water, energy and food planning and development for South Africa, in particular, and southern Africa in general, in an integrated and sustainable manner. Since then, the WRC through its Research & Development (R&D) branch, has organised various activities under the banner of this lighthouse. Since then, the WEF nexus has evolved into an important framework attracting global attention. The concept presents an opportunity to promote integrated planning in a sustainable manner. It also presents a framework for directly achieving some of the SDGs, such as Goals 2 (zero hunger), 6 (clean water and sanitation) 7 (affordable and clean energy), and 15 (life on land) with indirect potential to achieve SDGs 1 (no poverty), 8 (decent work and economic development) and 9 (industry, innovation and infrastructure) through innovations linked to WEF nexus resource utilisation, development and management. The WRC, for its part, will continue to drive research, development and innovation linked to knowledge generation on the WEF nexus. The translation of this knowledge into an actionable plan that can be adopted by policy makers remains the next frontier.

As a knowledge generation organisation the WRC has a responsibility to drive alignment of its thrusts and programmes or focus areas linked with national priorities such as the National Development Plan (NDP) and other policies. As a country, South Africa has a responsibility to champion the WEF nexus regionally and strives to be a global leader in research and development. The challenges that South Africa and the region are facing require innovative solutions to move forward, build resilience and attain the 2030 Global Agenda for Sustainable Development. One such approach is the WEF nexus approach, which is envisaged to provide decision support tools to deal with the following challenges, among others: These include, but are not exclusive to:

- (i) the poverty-unemployment-inequality nexus
- (ii) rapid population growth,
- (iii) rural to urban migration due to the poor performance of the agriculture sector and other push-factors,

- (iv) water scarcity, which is being exacerbated by climate variability and change,
- (v) increasing demand for food due to population growth and dietary transitions and increasing food insecurity among the rural poor,
- (vi) increasing energy demand to meet developmental targets, and
- (vii) the need to increase the irrigated as a driver of rural economic development and employment creation.

Deliverable Guidelines:

1. Report of inception workshop which will include current and previous researchers funded by the WRC's through WEF Nexus lighthouse.
2. Outline of the report including proposed table of contents, chapters and lead authors as well as details of the editorial team and reviewers.
3. Identification of a publishing house
4. Draft report/synthesis of knowledge on water utilisation in agriculture for South Africa.
5. Organisation and review of the report chapters.

Knowledge tree:

- (a) Inform policy and decision making
- (b) Develop new products for economic development
- (c) Empower local communities
- (d) Drive sustainable development solutions
- (e) Enhance human capital development

Time Frame: 18 months (01 July 2019 to 01 December 2020)

Budget: R700 000.00