



TERMS OF REFERENCE FOR A SOLICITED WRC PROJECT

KEY STRATEGIC AREA:	9 (Business Development and Innovation)
THRUST	3 (Business Development)
PROGRAMME	2 (Impact Expansion)
TITLE	Market Analysis: Determining the extent and potential of a Water-Smart Agriculture market in South Africa

Rationale

The Agricultural sector in South Africa contributes approximately 3% to South Africa's Gross Domestic Product (GDP) and plays a significant role for employment and job creation. The sector is dependent on approximately 63% of the country's water allocation. Variable rainfall patterns not only affect dam and surface water but also groundwater recharge. Rising temperatures, climate change and droughts have serious long-term consequences for South Africa's food security. When coupled with the growing impacts on the quality of our water sources due to e.g. pollution from agricultural run-off, South Africa requires a focused approach to shifting the sector to more sustainable practices.

In a water stressed South Africa, conventional agricultural practices such as irrigation, mitigation of production losses and yield improvement continue to exacerbate detrimental environmental effects and water constraints in South Africa. Studies have shown that there is an increasing interest in agricultural innovation by investors in response to the state of water in South Africa. Reducing pollution and soil degradation, improved information systems, models and rolling out of water efficiency technologies for irrigation are emerging as key opportunities for sustainable farming. As much as fruit and wine farmers are embedding sustainable and water efficient practices and technologies into their operations, the potential size and focus of a Water Smart Agriculture (WSA) market in South Africa requires crucial consideration.

Purpose of the study

The overall objective of this study is to strengthen insights, unpack potential pathways to fast track WSA innovations to market and highlight key pockets of potential investment. The expected output of this study will inform and support strategies and implementation projects linked to the WRC's Water-Energy-Food Security Lighthouse, policy and partner-led initiatives. It is also aimed at strengthening local community, SMME, local authority and industry knowledge on enabling roles, processes and resources to be considered to ensure effective Water Conservation and Demand Management (WCDM) for the Agricultural sector.

A number of innovations - processes and technologies have been developed that could lead to the emergence of a WSA market. However, a consolidated view on the type and readiness of innovations for market are still unclear. This study aims to segment and categorise market opportunities, produce a comprehensive list of WSA innovations (technology and process) that demonstrate a prospective South African market and opportunities for industrial and socio-economic development, and aid in prioritising WSA interventions.

Insights into pathways also require attention and a market analysis on enablers, drivers, barriers and constraints across policy, economic, social, legal/regulatory and environmental (PESTLE) contexts within South Africa will be valuable to determining new areas of Research, Innovation and Impact. Industry structure and peripheral player roles and influence require due consideration through the study. Insights and recommendations should advise diffusion and adoption on WSA innovations.

Objectives of the study:

General: Improved understanding of the WSA market for agricultural sub-sectors and gaining insights on the national context and potential pathways for transitioning WSA innovations to market;

- A proposed market research methodology to assess and determine the size and potential of a South African WSA market, incl technology and innovation export potential;
- A detailed market analysis (quantitative and qualitative) of current and future trends, forecasts, growth drivers, constraints and risks;
- Defining and providing a consolidated view of WSA market role players and decision-makers (incl start-ups/SMMEs);
- Defining and providing a consolidated view of WSA innovations and their readiness for application within the SA market;
- Mapping of drivers, enablers, barriers and constraints for transitioning WSA innovations to market;
- Outline key developments required to improve market structure and investment (supplier, buyer, penetration, affordability, regulatory environment, etc);
- A breakdown of opportunities for WSA innovation uptake and roll-out across commercial, small-holder, domestic, emerging black farmers and other agricultural markets (segmentation); and
- Providing recommendations for increasing the adoption and diffusion of WSA innovations.

The following deliverables are suggested as outputs and may be adjusted depending on the proposed methodological approach:

1. A proposed methodology to assess and determine the size and potential of a WSA market;
2. Scoping session to clarify decision context, information needs, research trade-offs and uncertainties, resource and time allocation, and roles and responsibilities
3. Inception report that provides a view of the WSA market, role players and decision-making context;
4. List of WSA innovations and readiness (new irrigation methods, new drought resistant crops., ICT data, services, water treatment, etc);

5. Market segmentation and demand analysis;
6. Market opportunity map in relation to drivers, enablers, barriers, risks and constraints;
7. At least one stakeholder workshop;
8. Market analysis report outlining:
 - a. Economic analysis on prioritised WSA interventions;
 - b. socio-economic, regulatory and political considerations;
 - c. export potential;
 - d. strategies, research, policy, and practice recommendations; and
9. Draft paper for submission to a relevant academic journal; and
10. A mainstream article.

Time Frame:

18 months

Total Funds Available

R650 000

National Transformation and Development Agenda

The WRC supports the socio-economic agenda of South Africa and encourages proposers to consider transformation, gender, youth and trans-disciplinary priorities in response to the research terms of reference