



TERMS OF REFERENCE FOR A SOLICITED PROJECT

KEY STRATEGIC AREA 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 communities

TITLE: A demonstration of school-based vegetable gardens in enhancing school's feeding scheme, a contribution to food security in five Provinces

Overall aim:

Malnutrition, either over- or under-nutrition, is becoming a significant problem in South Africa, especially among school-aged children. This often leads to poor school attendance and high rates of dropout. Previous WRC funded research indicated a correlation between measures of food security and household food security indicators. School-based participatory vegetable gardens were found to be an effective long-term strategy that complements supplementation and food fortification programs to address hidden hunger and food insecurity. Based on these findings, the WRC seeks to upscale this work through the establishment of food gardens in demonstration sites employing associated innovations at sixteen (16) primary schools in four Provinces to supplement feeding schemes and assist learners to reach daily dietary intake requirements.

The overall objective of the project is to address food security and malnutrition in school going children through the participation of communities that reside around the schools in order to improve vegetable accessibility to the school feeding programme.

Specific aims

- To establish vegetable gardens in sixteen primary Schools that provide vegetables to supplement nutrition for children and adults in the community.
- To determine the impact of established food gardens on the nutritional status of the beneficiaries.

- To contribute to human capacity development through co-creation and co-learning, school engagement and on-site training to transfer skills to the communities.
- To measure and optimize water use of selected vegetable crops in school gardens for improved nutritional water productivity and water use efficiency.
- To implement and test simple irrigation and nutrient management tools/technologies in school gardens for enhanced irrigation management of selected vegetable crops.
- To raise awareness about the importance of school-based gardens to complement / supplement government feeding school.

Rationale

Insufficient vegetable and fruit consumption causes 2.7 million deaths annually worldwide and belongs to the top ten risk factors contributing to mortality (Ruel et al., 2005). The International Food Policy Research Institute (IFPRI) predicts an 18% rise in the number of malnourished children in sub-Saharan Africa from 2001 to 2020 (IFPRI, 2001). According to the World Health Organization (WHO, 2020), vitamin A and micronutrient deficiency remain a widespread problem. In the rural parts of South Africa, vitamin A deficiency is a severe health problem, particularly in women and children. A recent survey indicated that 63.8% of pre-school children were vitamin A deficient, one in three children under six years of age is afflicted with vitamin A deficiency, and one out of two children (1-9 years old) had less than 50% of the required intake of energy, vitamins A and C, as well as iron (Fe) and zinc (Zn) (Mchiza et al. 2020; Bain et al., 2013; Smuts et al., 2005). Nutritional deficiencies are similarly a significant health problem in South Africa.

The success of school gardens is dependent on policies that support and provide an enabling environment for the development and implementation of garden activities in schools. Addressing constraints such as supplies, technical support, infrastructure, tools and the involvement of parents and other community members is critical for the success of school gardens.

Deliverables:

Rainwater harvesting strategies show potential in mitigating the effects of climate change for increased crop water productivity. The adoption of a climate-smart production practices will be a critical component to ensure maximum crop water productivity and reduced risk of crop failure. The deliverables should address all the stated objectives and may also include; the introduction of underutilised indigenous crops, green technology, on-site climate-smart research, household gardens, support the schools with infrastructure such as the provision of boreholes and water storage tanks. It is also important to explore the impact of vegetable gardens towards meeting dietary requirements of school children and pre-processing at the school level to introduce nutritious products such as soup and veggie drinks while including high-value crops in the gardens for income generation.

As it is most unlikely that a single organization will have all the expertise required, it is strongly recommended that a consortium of experts and organizations with full appreciation of the food security challenges, nutritional deficiencies in children and climate-smart agricultural innovations is formed in order to provide the highly specialised knowledge required.

Impact Area:

Empowerment of Communities and other related Knowledge tree impact areas

The estimated budget over a 48 -month long study period is available from KSA 4.

Time Frame	: 4 years
Budget for 1st year	: R 2 000 000.00
Retention payable on approval of final deliverable	: R 1 600 000.00
Total Funds Available	: R 8 000 000.00

Budget breakdown:

AVAILABLE BUDGET OVER THE PROJECT PERIOD OF FOUR YEARS: **R 8 000 000.00**

2021/2022:	R 2 000 000.00
2022/2023:	R 2 000 000.00
2023/2024:	R 1 600 000.00
2024/2025:	R 2 400 000.00
Total	R 8 000 000.00