TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

THEME: Water Use

TITLE: Scoping and feasibility study for Douglas Weir in the Northern Cape Province

Aim: The study aims to identify the viability, risks, and key issues requiring research, including evaluating technical, market, financial, and operational factors within the local context of the area served by Douglas Weir.

Purpose:

The study aims to assess the potential of the Douglas weir in meeting and addressing local needs, identify possible social and environmental impacts, and determine if the development can be profitably and sustainably implemented with available resources.

The study is timely, given the recent designation of the Douglas Weir as a World Heritage Irrigation Structure (WHIS). While circumstances around the weir have changed significantly since its construction, the weir continues to play a vital role in supporting agriculture, water supply, and rural livelihoods. This recognition presents an opportunity to re-evaluate its legacy and future potential.

Specific objectives:

1. To identify research gaps (grey literature, journal publications, reports, popular articles, etc.) not addressed by past research around the Douglas Weir area
2. To recommend appropriate policy actions and research direction to address the impacts and opportunities identified in the study.
3. To assess the evolving benefits that the Douglas Weir has provided to the local community and how these can be further harnessed for socio-economic development.
4. To explore the implications of the WHIS designation, including potential for heritage tourism, investment attraction, and innovation in water and land management.
5. To develop a replicable framework for evaluating the benefits and potential of other WHIS-designated sites across South Africa and beyond.

Rationale:

"Heritage dams" refers to dams that are culturally significant due to their historical, technological, or social importance, or to dams that are considered part of the water or agricultural or industrial, or architectural cultural heritage of a certain area. These structures are recognized as important examples of engineering, construction, or agricultural development history as they often made a major contribution to the expansion and progress or development of the area. As water is vital for all livelihoods, the storage of water in dams has always brought revitalisation and growth to an area or region. Some heritage dams may not be currently being used for their original purpose of supplying water, but may have been preserved or repurposed for public enjoyment and educational uses.
The Douglas Weir situated on the Vaal River is the oldest weir in South Africa, having been constructed in 1890-91. It is now the first heritage water structure to be recognised by the ICID and awarded as a "World Heritage Irrigation Structures" as it met the requirement of being more than 100 years old. It was originally designed to irrigate about 364 ha, although it was destroyed soon after completion, and the new weir was built as a diversion water scheme - build of a masonry wall about 399 meters long and 3.6 meters thick, on a solid rock foundation. The weir then links the Atherton farm on the north bank with St. Clair on the south bank, roughly 8 kilometres upstream on the Vaal River from the village of Douglas.

Currently, the Orange-Vaal Water User Association (OVWUA) manages water distribution in the area, including several canals and the Douglas weir, to irrigate crops along both the Orange and Vaal Rivers. Agricultural activities in the OVWUA area include cultivating permanent crops such as pecans, citrus, and lucerne, as well as annual field crops such as potatoes, grains, cotton, and onions. The region is a major agricultural area focused on irrigated farming due to the availability of water from both the Vaal and Orange Rivers.

At the recent presentation of the Heritage Award to the Orange-Vaal Water User Association, the Minister of Water and Sanitation challenged the local and scientific community to use this historic and cultural structure innovatively. This could bring improvement to the livelihoods of the local people by improving the water and sanitation services in the surrounding areas and the development of agrotourism activities. It is to address this challenge that a proposal is made to engage with the surrounding communities and formulate a project driven from the grassroots to improve the livelihoods and develop an innovation hub with some agrotourism activities around this historic structure.
As the first stage in this process, a detailed scoping feasibility study of the physical, environmental, social, technical, and economic attributes of the area should be conducted. An evaluation of the potential of the area will enable a development plan to be formulated by the local communities and recommendations to be made for future development.

Deliverables:

The outputs of such a feasibility study will be a set of proposed developments that can be implemented in the near future to benefit the communities and bring attention to the Douglas Weir as a Heritage site. These recommendations will bear the endorsement of the local government and community leaders, as they will have been a vital part of the project. Developments in irrigated agriculture demonstrate its potential to increase food production

and improve the economic conditions of surrounding communities and farmers. Key deliverables will include:

1. Provide recommendations on products and services that will be part of an overall development plan for the municipality and include a marketing and awareness campaign, construction of agrotourism infrastructure, development of model agroecological farming and food processing activities, as well as a living lab for educational purposes
2. Popular articles in farmer magazines, conference papers, and scientific articles in published journals;
3. Annual progress and capacity building reports;
4. Final integrated research report

Impact Area:

1. Inform farming and policy decision-making;
2. Develop new products for economic development;
3. Drive sustainable development solutions;
4. Enhance human capital development;
5. Empower local communities;
6. Promote transformation and redress.

Time Frame: 12 months

START: 1 April 2026
END: 31 March 2027

Total Funds Available:

	WRC
2026/27	R800 000
Total	R 800 000