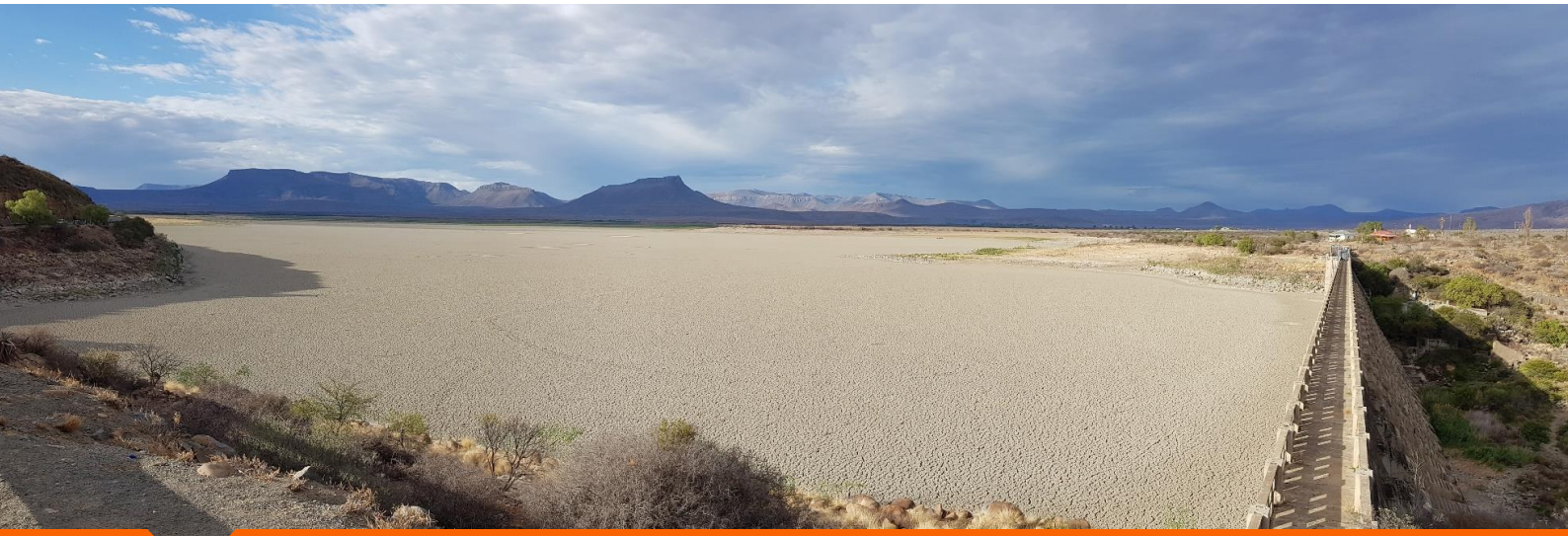
National Water Reuse Programme:

Programme Design and Preparation of a Full Funding Proposal to the Green Climate Fund



WRP CLIMATE SCREENING PROCEDURE

Annexure 23

09 June 2023

DBSA
DEVELOPMENT BANK OF SOUTHERN AFRICA
Building Africa's Prosperity

This deliverable has been prepared by the Development Bank of Southern Africa with the support of Pegasys (Pty) Ltd in association with:

- JG Afrika (Pty) Ltd;
- Amber Public Sector Consulting (Pty) Ltd;
- Clarity Global Strategic Communications; and
- Yubifin (Pty) Ltd.

All referred to as the 'Service Provider' in the Service Level Agreement executed between Pegasys and the DBSA on 10 January 2021.

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ACRONYMS & ABBREVIATIONS

CIP	Climate Information Portal
CRVA	Climate risk and vulnerability assessment
CSAG	Climate Systems Analysis Group
DBSA	Development Bank of Southern Africa
DCOG	Department: Cooperative Governance and Traditional Affairs
DFFE	Department: Forestry, Fisheries and the Environment
DWS	Department: Water and Sanitation
GCF	Green Climate Fund
GCM	Global Circulation Models
GHG	Green House Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ISA	Infrastructure South Africa
NIP	National Infrastructure Plan
NWPP	National Water Partnerships Programme
OC	Oversight Committee
PICC	Presidential Infrastructure Coordination Commission
RCP	Representative Concentration Pathway
SALGA	South African Local Government Association
SMHI	Swedish Meteorological and Hydrological Institute
SSP	Sustainable socio-economic pathway
WCRP	World Climate Research Programme
WMO	World Meteorological Organisation
WPO	Water Partnerships Office
WRP	Water Reuse Programme
WRU	Water Reuse Unit
WSA	Water services authority
WWF	World-wide Fund for Nature
WWTW	Waste-water treatment works

1. Introduction

1.1 Purpose

This report outlines the procedures to be utilised by the Water Reuse Programme (WRP) when screening potential sub-projects for support by the programme. Noting that the WRP can only support those sub-projects where water scarcity is induced by the impacts of climate change, this primary screening procedure is focused purely on the climate change basis. Thereafter, and with a potential sub-project passing this primary climate screening stage, the sub-project will undergo further scrutiny utilising a range of technical and financial criteria that have been presented in the Funding Proposal and the Annexure focused on eligibility criteria.

1.2 Structure

The report is developed to give guidance as to how the Water Reuse Programme will undertake the Primary Climate Change Screening process to ensure that only sub-projects that have water security challenges as a result of climate change impacts, are supported by the programme. The report is structured as follows:

- **Section 2**: provides a procedural overview so that there is clarity as to various sub-project selection criteria and how the use of the Primary Climate Change Screening is imperative prior to the use of the subsequent screening criteria.
- **Section 3**: outlines in detail the structural arrangements to support and undertake sub-project climate change screening and its linkages to the subsequent screening stage gates, provides a detailed description of the scorecard and then outlines the use of various tools to support the screening process.
- **Section 4**: provides a brief conclusion emphasising the importance of the screening process and governance rigour that needs to be applied.
- **Annexure A**: outlines the use of three cases studies to test the screening scorecard and the associated decisions.

2. Procedural Overview

2.1 Introduction

The Water Reuse Programme (WRP) is a sub-programme of the overarching National Water Partnerships Programme (NWPP). The establishment of the National Water Partnerships Programme is approved in principle by the Council of the Presidential Infrastructure Co-ordinating Commission (PICC) on 10 April 2021[1]. The PICC Council is established in terms of the Infrastructure Development Act [2] which includes as its main objective to "provide for the facilitation and co-ordination of public infrastructure which is of significant economic or social importance" to South Africa. The NWPP is further discussed in the draft National Infrastructure Plan 2050 (NIP 2050)[3] developed by Infrastructure South Africa (ISA)[4] in the office of the Presidency and issued by the Minister of Public Works and Infrastructure in terms of the Infrastructure Development Act in August 2021. Although still in draft form, the NIP 2050 reflects key national policy direction and decision making of the PICC, with a focus on implementation and action. The draft NIP 2050 refers to the establishment of an inter-ministerial committee to improve co-ordination on water and sanitation. In addition to the WRP, the NIP anticipates the National Water Partnerships Programme also addressing issues including non-revenue water and support to Water Services Authority (WSA).

The Development Bank of Southern Africa (DBSA) is an Infrastructure Development Finance Institution that supports financing of infrastructure in the water sector in Sub-Saharan Africa. The DBSA's mission is to advance development impact in the region by expanding access to development finance and effectively integrating and implementing sustainable development solutions. The DBSA supports investments which demonstrate responsible environmental and social practices. Environmental and social considerations are integrated into all DBSA investment decision making processes. Policy documents, guidelines and tools which aim to mainstream environmental and social considerations into DBSA operations to promote sustainable development. [5]

2.2 Water Reuse Programme (WRP)

While the DBSA undertakes rigorous investment appraisal for all programmes and projects which it considers for financing, the WRP with the support of the Green Climate Fund (GCF), will in addition to the normal range criteria that projects are assessed against, also need to ensure that all sub-projects supported by the programme have a sound climate change basis that underpins the need for the project.

[1] National Infrastructure Plan 2050 ("NIP 2050") for comments, published in Government Gazette 44951 Notice No. 711 dated 10 August 2021.

[2] Infrastructure South Africa currently established as an office in the Infrastructure and Investment Office of the Presidency.

[3] Page 31 of the National Infrastructure Plan 2050 (NIP 2050) For Comments published in Government Gazette No. 44951 Notice No. 711.

[4] Infrastructure South Africa was established in 2019 and is an office in the Infrastructure and Investment Office of the Presidency.

[5] DBSA. 2020. Environmental and social safeguards

All sub-projects support by the WRP will have water scarcity and security challenges as a result of climate change induced hazards.

Should sub-projects demonstrate a clear climate change basis, then additional criteria will thereafter be applied to ensure technical, environmental and financial rigour. To ensure this, and that sub-projects meet the various technical and financial requirements, a suite of project eligibility criteria have been designed to be applied subsequent to the climate change basis being ensured (Table 1). It is important to note the primary and secondary screening stages are both exclusionary while the tertiary criteria are used a means to prioritize interventions.

Table 1: WRP Sub-project screening stages and eligibility criteria

Criteria	Value	Requirement
Primary Screening (Exclusionary)		
Water insecurity demonstrably driven by current or climate change vulnerability, within the bounds of uncertainty	Scorecard includes climate change and risk vulnerability, drought exposure, resilience benefits and adaptation optimization	Clear climate vulnerability
Secondary Screening (Exclusionary)		
WWTW Design Capacity	Greater that 20 Ml/d	Yes, greater than 20-Ml/d
Regulatory Compliance (Chemical)	Greater than 50% regulatory compliance	Yes, greater than 50% compliance
WWTW Technology Type	Only activated sludge plants will be supported to ensure the consistency of effluent quality required.	Yes, incorporates and activated sludge plant.
Environmental Safeguards	All sub-projects shall comply with both GCF and DBSA Environmental and Social Safeguards Standards, with only Category B and C levels of impact being acceptable.	Yes, meets the safeguard requirements of GCF and DBSA and risk is at levels B and C.
Tertiary Criteria (Prioritisation)		
Beneficiation	Priority will be provided to sub-projects that provide for mitigation including biogas, solar power, sludge management and sludge beneficiation.	
Linkage to strategic projects	Priority will be provided to water reuse sub-projects in supporting of strategic projects.	
Offtake agreements	Priority will be afforded to sub-projects where the existence of a confirmed offtake agreements	
Financial Viability (Exclusionary)		
The Project feasibility study will need to demonstrate affordability which will include the need to have certainty around Project off-take arrangements. Projects will be assessed using the financial model developed for the WRP, against a target minimum senior debt service cover ratio (DSCR) which provides an indication of a project being 'at risk' for bankability and requiring WRP concessional funding to be viable and deemed bankable. The DSCR will be fixed during the financial assessment stage of project preparation and shall be fixed prior to the sub-project being taken to implementation.		

All sub-projects that move beyond project preparation into implementation must be **financially viable**, as will be required to be demonstrated in the project-specific feasibility studies / project information memorandums to be undertaken prior to programme funding commitment. The project feasibility study will need to demonstrate affordability which will include the need to have certainty around project off-take arrangements. Procedurally it will be important to provide project preparation support to newer/ start-up sub-projects prior determining their financial viability. Once this has been provided, and only if sub-projects pass through the three-screening stage-gates, will the financial viability be assessed by the DBSA Investment Committee.

2.3 Sub-Project Entry Routes

It is important to note that the WRP is structured to assist the sub-projects that may be at varying stages of their project development lifecycle, and as such have varying levels of information available to support the primary climate change screening process that is required. Sub-projects may be requiring that the WRP provide project preparation support while others may have undertaken initial pre-feasibility or feasibility level studies and therefore be wanting the programme's support to take the sub-project to financial closure and implementation.

Nevertheless, whatever the stage of development, all sub-projects will be assessed using the primary climate change screening tool.

The more progressed the sub-project may be along the development lifecycle, the more detail can be expected in terms of understand the climate change basis for the sub-project, and as such the rigour that can be applied in undertaking the primary climate change screening. This is aligned to the level of risk associated with each stage of the project developmental cycle.

As such, a number of cases can be foreseen:

- Sufficient climate change information is provided and there is a weak or insufficient climate change basis to justify the support of the WRP, and as such don't require screening.
- There is insufficient climate change information provided to determine the relative role of climate change on water insecurity and these sub-projects will be screened using desktop information.
- Sufficient climate change information is provided and there is an apparent justification for the support of the programme, and will be screened using the detailed information provided as well as supported by the desktop tools and information available.

Principally, then sub-projects will be stage-gated to ensure that funding is terminated early where it is clear there is no climate change basis for support. Sub-projects that meet thresholds will then be taken for further due diligence towards the provision of funding support.

3. Primary Climate Change Screening Process

To give effect to the WRP, under the banner of the NWPP, a governance structure has been developed that provides for the necessary strategic guidance, operational oversight as well as programmatic monitoring and evaluation. These governance structures will provide the due diligence needed to comply with GCF programme requirements as well as national and institutional level legal, regulatory and fiduciary requirements.

It is important to understand how sub-projects potentially enter the programme, and the roles that the various governance structures play in screening, approving and supporting possible sub-projects. There is a suite of actions that are required as part of the sub-project screening process, of which the Climate Change Screening is the foremost.

3.1 WRP Climate Change Screening Structures and Process

To give effect to the NWPP, which is broader than just the water re-use sub-programme, the following governance structures have been outlined (Figure 1).

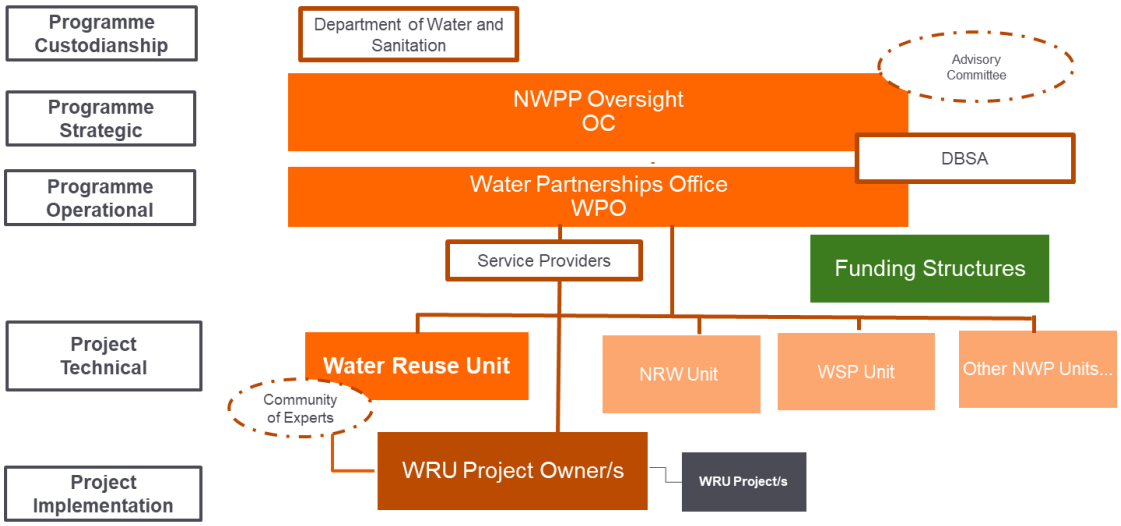


Figure 1 NWPP governance structure

For the process of climate change screening of sub-projects, it is important to understand the roles of the following key structures:

- **Water Reuse Unit (WRU)** is part of the Water Partnerships Office. The WRU will house the technical support for the identification, preparation and implementation oversight of water reuse sub-projects. The WRU will prepare all the submission requirements and templates. This will outline the critical data and information that will support the Climate Change Screening Committee in assessing the climate change basis for potential sub-projects. After the WRU has issued a call for proposals they will liaise with Project Owners to ensure that sub-project submissions have the information required to undertake the climate screening. The WRU will provide guidance in this regard and will revert back to Project Owners should more information

be needed. The WRU will package the information for submission to the Climate Change Screening Committee, thereby facilitating the Screening process. The WRU will also communicate with Project Owners regarding the outcomes from sub-project evaluations and should sub-projects be successful, the Unit will the facilitate the provision support to the sub-project. It may be that the screening process recommends the undertaking of a detailed Climate Vulnerability Assessment, which the WRU will facilitate with the Project Owner.

- The **WRP Climate Change Screening Committee** will utilize criteria and the primary screening tool to appraise and evaluate applications based on climate change information from authoritative sources alongside the best available information for water availability and demand trends within the proposed area. The committee will include DBSA staff as well as appointed climate experts. Terms of Reference for the climate experts will be agreed with the GCF Secretariat. This screening committee will also support the WRP with the subsequent technical screening criteria and may co-opt additional experts to the committee if deemed necessary to support the technical screening and prioritization.
- The **DBSA Investment Committee** will take decisions regarding sub-project related investments aligned to the policies of the DBSA and GCF, as amended from time to time. This committee takes responsibility for overall investment decisions and the management of risk. Sub-projects that reach this committee will have passed the other stage of screening and as such the decisions made by this committee will be purely financial, bearing in mind any associated risk.
- Decisions regarding investments will be shared with the **NWPP Oversight Committee** that has the responsibility to give strategic direction, oversee operational management of the programme, will maintain the programmes institutional linkages and undertake necessary processes to monitor and evaluate the programmes progress. As such the Oversight Committee will track the support provided to sub-projects as facilitated by the WRU.

The overall WRP sub-project evaluation process is outlined in **Error! Reference source not found.**.

The Climate Change Screening Committee will be comprised of the following staff.

- **Chairperson**: The Committee will be chaired by the Executive Manager of the WPO. This will be a person with 15 years of experience in the water infrastructure sector and will have a post-graduate qualification in engineering or financial management.
- **Deputy-Chairperson**: The deputy chairperson of the committee will be the WPO's lead Technical Manager, and will chair the committee meetings should the Chairperson not be available. This Technical Manager will have 15 years of experience in wastewater treatment and water reuse and will be a professionally registered engineer.
- **Climate Change Experts**: The committee will include two independent climate change experts who have in excess of 10 years of experience and have a Masters degree (or higher) in climate science. At least one of the experts will be from an academic background either from a University or an associated research institute.

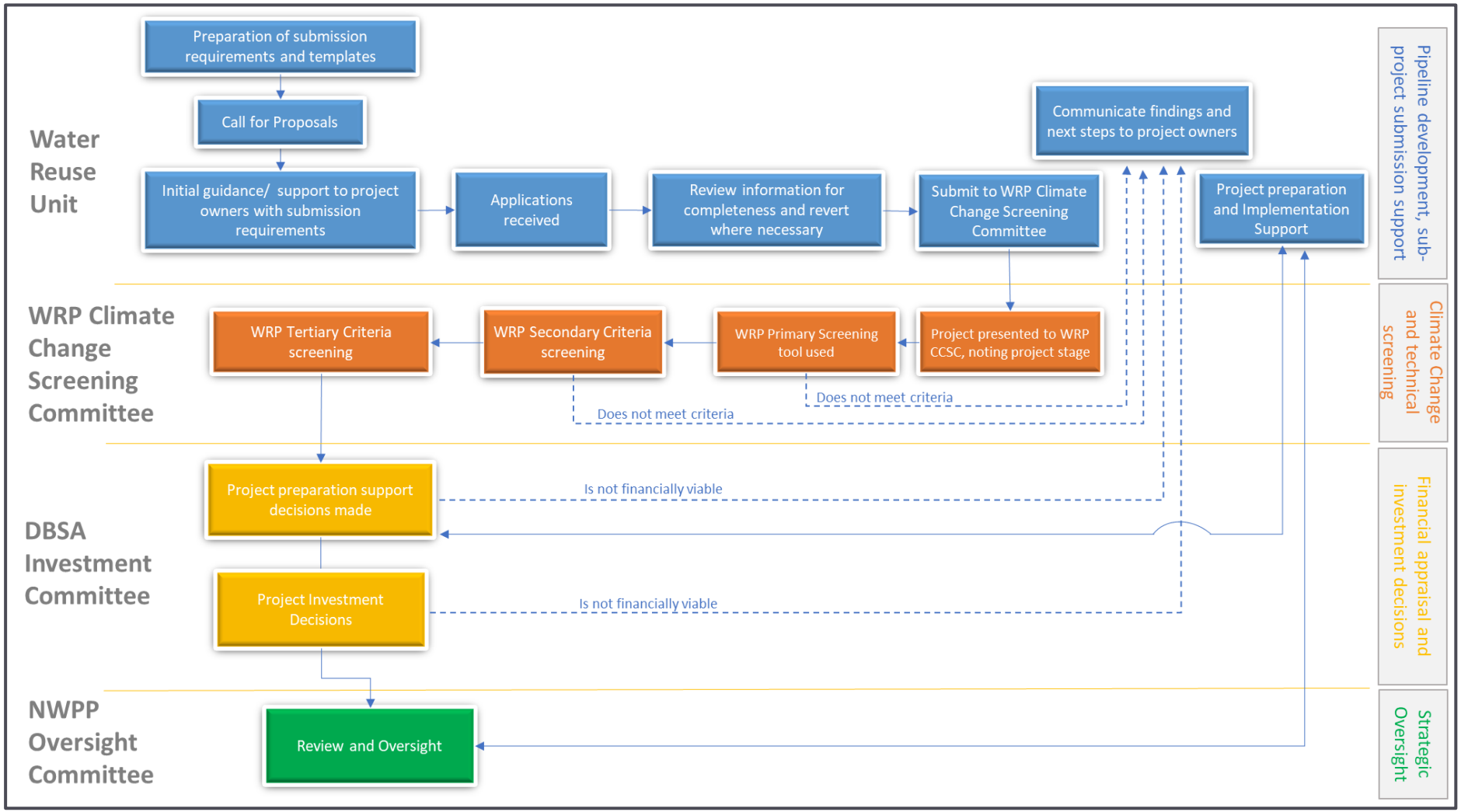


Figure 2: WRP sub-project evaluation process

- **National Government Representative**: The committee will include a representative from national government either from the Department of Water and Sanitation, Department of Forestry, Fisheries and the Environment, Department of Cooperative Government, or National Treasury. The expert representative will have a postgraduate qualification in water, environmental or developmental studies and have 15 years sector experience, with a sound understanding of the climate change impacts and vulnerabilities at local levels.
- **SALGA representative**: The committee will also include representation from the South African Local Government Association, and as such the representative is expected to bring to the committee an understanding of vulnerability at local levels. The person would be likely drawn from SALGA's technical Municipal Infrastructure Services unit and will be required to have 10 years' experience in water management, environmental aspects as well as climate change. The person will be required to have a post-graduate qualification in one of these aspects.
- **DBSA Climate Expert**: The Committee will include a representative from the DBSA that has at least 10 years of experience in climate science and associated resilience building projects. The climate expert should have a post-graduate degree in climate science, environmental sciences, water sector management and development science or engineering, or financial management. The expert should have experience of working with GCF, GEF, Adaptation Fund and other similar sources of climate related finance.

The Committee will only meet when at least 5 of the 7 members are available, with the three climate experts being available.

The WRU will facilitate the meeting and will provide all information to the Committee at least three weeks prior to the meeting, thereby affording the Committee members time to review information and utilise the supporting systems, as well as revert back to the WRU for any further information. The findings of the committee will be documented by the WRU.

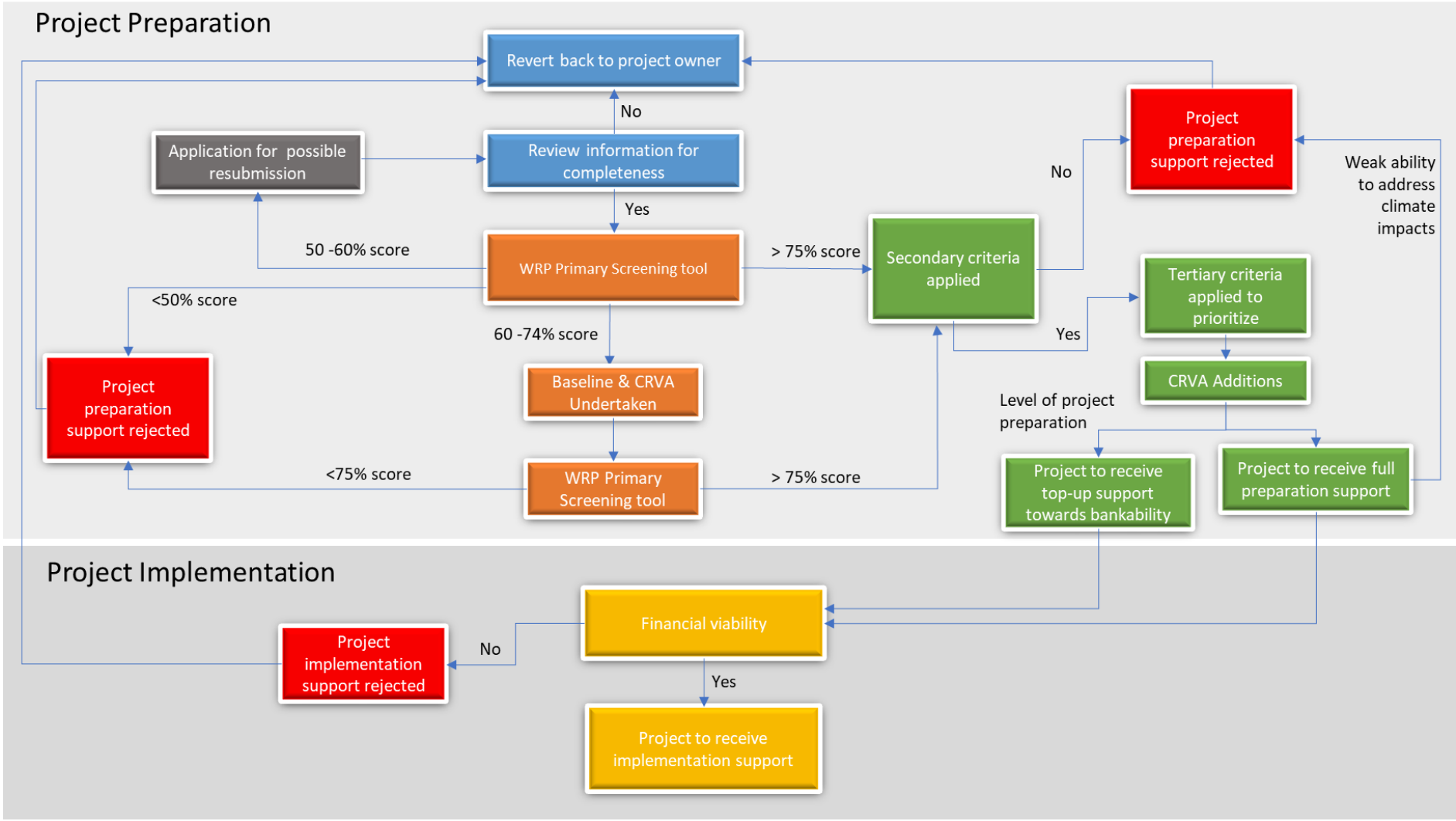
Depending on the timing of the call for proposals and the length of the window for which this call is open, the Committee will most likely meet twice per year. In summary the sub-project screening process will be as follows.

- **Step 1**: The WRU will issue a call for proposals, as well as approach municipalities/Project Owners directly. The WRU will provide the necessary information requirements, guidance materials and templates for such submissions. The WRU will assist Project Owners should there be informational issues and guidance required. These will be prepared and submitted as a batch to the WRP Climate Change Screening Committee.
- **Step 2**: The WRP Climate Change Screening Committee will utilize the primary screening tool with scores and comments for each proposal being consolidated by the WRU for the Committee. Using the scoring rubric, sub-projects may be recommended directly for project preparation support, may require a detailed Climate Risk and Vulnerability Assessment prior a subsequent decision (again using the Primary Screening Tool), may be returned to the Project

Owners for more work and a later re-submission with enhanced information to demonstrate the role of climate change, or may be rejected outright.

- **Step 3**: The WRP Climate Change Screening Committee will utilize the secondary screening criteria which are also exclusionary and should the sub-project/s not meet these requirement they will be rejected. Those that meet these requirements will be supported for project preparation support, noting that the tertiary criteria will assist in determining priorities from a batch of submissions. It must be noted that some sub-projects may require comprehensive preparation support, while others may require only limited inputs to take them to bankability. All sub-projects at this stage will be reassessed and any additional work required to update and strengthen the climate argument will be recommended. Sub-projects can still be rejected after project preparation should the more detailed evidence show issues with the ability of the sub-project to address climate impacts or due to the bankability of the project.
- **Step 4:** Post the project preparation phase, all sub-projects are financially appraised by the DBSA Investment Committee utilizing DBSA investment criteria and rules. Sub-projects that do not meet these criteria will be rejected.
- **Step 5:** Once approved the DBSA will undertake the processes to structure the financial arrangements, undertake the necessary due diligence, undertake any necessary negotiations and attain approvals.

Figure 3: WRP Climate Change Screening Process



3.2 WRP Climate Change Screening Scorecard

The Climate Change Screening Scorecard will be provided to each member of the Climate Change Screening Committee and will be completed by all members of the committee, for all sub-projects under review. These completed scorecards will be submitted to the WRU prior to the Committee meeting so that the scores can all be consolidated, with an average scorecard result being compiled for each sub-project. The Committee will review these and will discuss any anomalies in the scoring between the various members. Through this discourse, a member may adjust scorings due to improved understanding of the climate change impacts, the level of vulnerability and risk, that has surfaced through the Committees discussion. This may be where a member feels that their scoring was fundamentally wrong. Once agreed on the findings of the Committee for each sub-project, the Chairperson will sign-off on this decision, which is final.

The scorecard is comprised of ten criteria aimed at providing an objective review of the impact of climate change on water scarcity / security in any given sub-project. These are rated with a score from one to five with one reflecting the weakest score for a climate change basis and five reflecting the strongest score in support of a sub-project's climate change basis. These scores are weighted and then summed to provide an overall score for each sub-project. These criteria are outlined in Table 2.

Table 2: Climate change basis screening scorecard criteria

No.	Criterion	Assessment	Weighting
1	Level of local baseline water scarcity	Level of current baseline water supply vulnerability through assessing the ratio of total water withdrawals to available renewable surface and groundwater supplies.	1
2	Level of local water scarcity/ stress induced by climate change under optimistic future climate scenarios	Level of water scarcity risk in a world with sustainable socio-economic development (SSP1) and moderate reduction of GHG emissions (RCP2.6 /RCP4.5), a pathway which will lead to an increase of global mean surface temperature of approximately 1.5°C by the end of the 21st century.	1
3	Level of local water scarcity induced by climate change under current/ business as usual climate scenarios	Level of water scarcity risk in a world similar to current socio-economic development trends (SSP2) and intermediate GHG emission levels (RCP4.5 /RCP6.0), a pathway which will lead to an increase of global mean surface temperature of approximately 2°C by the end of the 21st century.	1
4	Level of local water scarcity induced by climate change under pessimistic future climate scenarios	Level of water scarcity in a world with unequal and unstable socio-economic development (SSP3) and high GHG emission levels (RCP6.0 /RCP8.5), a pathway which will lead to an increase of global mean surface temperature of approximately 3.5°C by the end of the 21st century.	1
5	Climatic history (rainfall)	A review of historical rainfall datasets (using trend analysis) shows potentially no increase in the average rainfall, or increases (wetting) or decreases (drying), compared to known trends in water demand. All submissions will be required to submit a rainfall trend analysis.	2
6	Climatic history (drought tendencies)	Assessing the projected change in drought tendencies (i.e. the number of cases exceeding near-	2

		normal per decade) for the period 2035–2064 relative to the 1986–2005 baseline period, under the low mitigation scenario (RCP 8.5). A negative value is indicative of an increase in drought tendencies per 10 years.	
7	GCF-WMO Climate Information Tool ensemble assessment	Using the GCF-WMO climate information platform, using the emissions scenario 4.5 and the time period 2041-2070 are future projections of changes in temperature, rainfall, aridity and water discharge, when combined with knowledge of water demand, demonstrating that climate change is a significant factor in water scarcity. Assess through the future change top indicators as well as through the spread of the 18-model ensemble.	2
8	Vulnerability	The level to which the needs of the most vulnerable would be addressed considering the levels of service in the municipality, as a % of the unserved. All submissions will be required to provided referenced statistics in terms of populations living in poverty and those who do not receive safe and secure basic water supply.	2
9	Mitigation impact (tCO2e)	The level to which the sub-project contributes to the reduction of GHG emissions based on submitted information, and that will be required from all submissions.	1
10	Mitigation impact through beneficiation	The level to which the sub-project will contribute to the mitigation of impacts through sludge beneficiation, based on submitted information required from all submissions.	1

The scores indicate the programme's the recommendations for each sub-project as set out in Table 3.

Table 3: WRP decisions based on climate change screening scores

Score	Decision
Highly recommended (Score is typically between 75 - 100%)	Current CRVA be updated or detailed CRVA to be undertaken together with other studies as part of the sub-project preparation stage.
Worthy of consideration (Score is typically between 60 - 74%)	Detailed CRVA required prior to any further investment.
Not recommended (Score is 50% to 60%)	Further work is required to prepare the submission, after which re-submission will be allowed if shortfalls have been adequately addressed.
Recommend to not resubmit (Score is below 50%)	Rejected.

As noted above, sub-projects will likely be submitted with varying levels of climate related information and assessment. The WRU will facilitate the submissions with Project Owners and will endeavour to get as much information as possible to support each submission. Noting that some municipalities have capacity constraints, and hence need the support of the WRP to undertake project preparation, some assessments will require the use of the scorecard in conjunction with the various online tools that are available. The submission of more

detailed climate vulnerability risk assessments will then not necessarily require the full use of these tools and platforms as the basis for the screening, however, the member of the Committee will use these to corroborate the evidence presented in these more detailed studies.

It is important to note that for each criteria a range of risk tools are recommended for use to provide a balanced assessment. The links to these are provided with the Scorecard to assist the evaluation by each member. These tools are outlined in Table 4.

Table 4: Key climate change and water risk assessment tools to be utilised by the Climate Change Screening Committee

Tool	Description	Link
The Green Book[6]	The Green Book is an online planning support tool that provides quantitative scientific evidence on the likely impacts that climate change and urbanisation will have on South Africa's cities and towns, as well as presenting a number of adaptation actions that can be implemented by local government to support climate resilient development.	http://www.greenbook.co.za/
Water Resources Institute: Aqueduct Water Risk Atlas[7]	Aqueduct's global water risk mapping tool helps companies, investors, governments, and other users understand where and how water risks and opportunities are emerging worldwide. The Atlas uses a robust, peer reviewed methodology and the best-available data to create high-resolution, customizable global maps of water risk.	https://www.wri.org/aqueduct
World-wide Fund for Nature (WWF) Water Risk Filter[8]	The WWF Water Risk Filter is designed to be used as a corporate and portfolio-level screening tool to identify water risks and prioritise corporate action on water.	https://riskfilter.org/
GCF-WMO Climate Information: Site-specific Report	The Climate Information Platform is developed by the Swedish Meteorological and Hydrological Institute (SMHI), on behalf of the World Meteorological Organization (WMO), World Climate Research Programme (WCRP) and the Green Climate Fund (GCF). This service provides: • Instant summary reports of climate change for any site on the globe. • Easy access to many pre-calculated climate indicators, based on state-of-the-art in climate science, of the past, present and future. • Climate information guidance.	https://ssr.climateinformation.org/
Climate Systems Analysis Group (CSAG) Climate Information Platform[9]	CIP is a web interface that integrates two important information sources into one easy to use interface. The first important source is a climate database that stores and manages queries to a large suite of observational climate data as well as projections of future climate. The second important source of information is an extensive collection of guidance documentation that facilitates the best use of the climate data, it's interpretation and, importantly, resultant actions.	https://cip.csag.uct.ac.za/webclient2/datasets/africa-merged-cmip5/

[6] CSIR. 2019. Green Book: Adapting South African settlements to climate change.
[7] World Resources Institute. 2019. https://wriorg.s3.amazonaws.com/s3fs-public/uploads/aqueduct-whats-new.pdf
[8] WWF Water Risk Filter (2021). https://riskfilter.org/water/explore/data-and-methods
[9] Climate Systems Analysis Group, University of Cape Town.

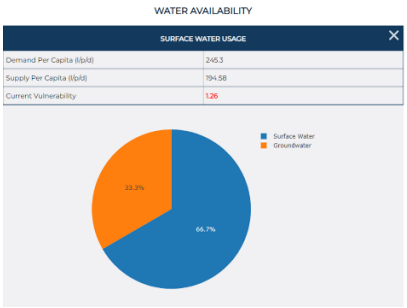
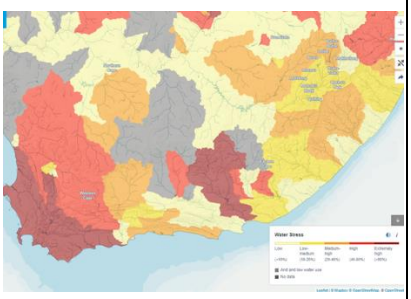
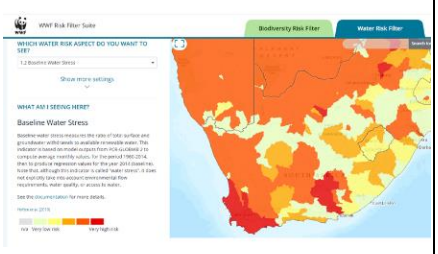
Let's Respond Toolkit	The purpose of this website is to provide stakeholders with information and tools to respond to climate change at a local level in South Africa. The website has been developed through the Local Government Climate Change Support Program, an initiative of the Department of Environmental Affairs and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. A number of tools have been developed through the programme to assist stakeholders to respond to climate change.	https://letsrespondtoolkit.org/

For criteria 2,3 and 4 the WWF Water Risk Filter will be a key tool, supported by the Green Book and the WRI Aqueduct tool. The Water Risk Filter's global dataset contains a total of 32 global basin indicators, which are based on best available peer-reviewed spatial datasets, in order to assess basin risk for all sites worldwide. As a screening and prioritization tool, the tool helps to identify sites exposed to highest basin risk to enable better prioritisation and focus of mitigation and adaptation efforts. It should be noted that the logic that underpins the basin risk assessment is to evaluate typical risk conditions at basin or country level based on historical trends and recent data as well as some level of projected future risk. The water scarcity risk category includes 7 indicators: aridity, water depletion, baseline water stress, blue water scarcity, available water remaining, drought frequency probability and projected change in drought occurrence.

The use of these tools and the approach for the scoring against each criterion is described below.

1. Level of local baseline water scarcity

To assess the baseline water scarcity three tools are to be reviewed.

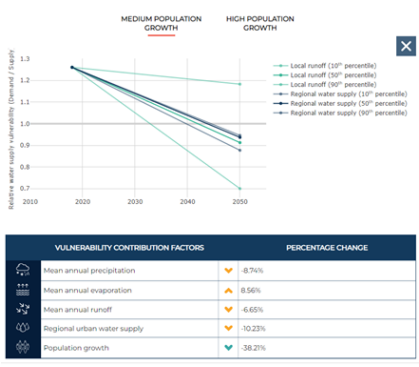
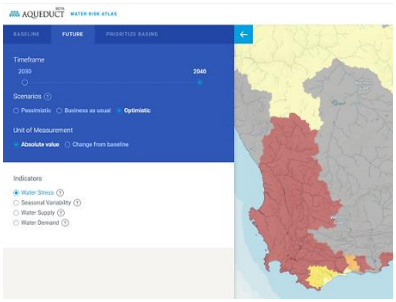
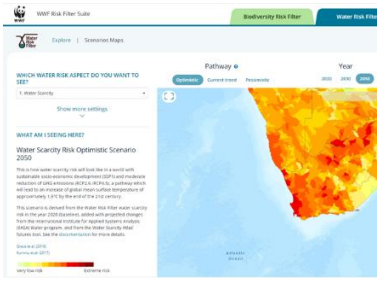
The Green Book	WRI Aqueduct	WWF Water Risk Filter
Under the Risk Tool, select the Municipality and under current conditions look at water supply under critical resources and impact assessments. The graphs depict the current water supply vulnerability (i.e. demand versus supply) for this local municipality based on the data compiled for the Department of Water and Sanitation (DWS) All Town's Study (Cole, 2017).	Access the baseline tab, physical risks and water stress. Baseline water stress measures the ratio of total water withdrawals to available renewable surface and groundwater supplies. Water withdrawals include domestic, industrial, irrigation, and livestock consumptive and non-consumptive uses.	Access water risk filter, maps, basin physical risk and then baseline water stress. Baseline water stress measures the ratio of total surface and groundwater withdrawals to available renewable water.
		

Provides a municipal scale indication of the abilities to meet water demands.	Provides catchment scale indication of the ability of renewable resources to support withdrawals	Provides catchment scale indication of the ability of renewable resources to support withdrawals

2. Level of local water scarcity/ stress induced by climate change under optimistic future

This criterion assesses the impacts of climate change on the level of water scarcity risk in a world with sustainable socio-economic development (SSP1) and moderate reduction of Green House Gas (GHG) emissions (RCP2.6 /RCP4.5), a pathway which will lead to an increase of global mean surface temperature of approximately 1.5°C by the end of the 21st century.

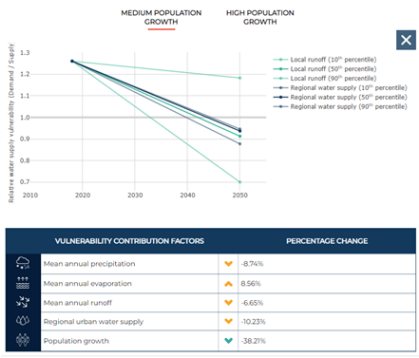
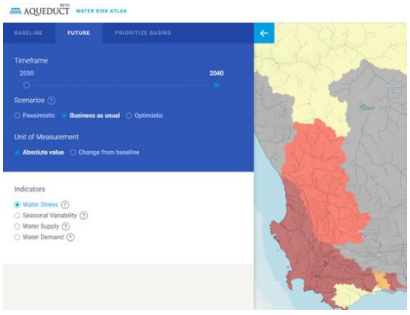
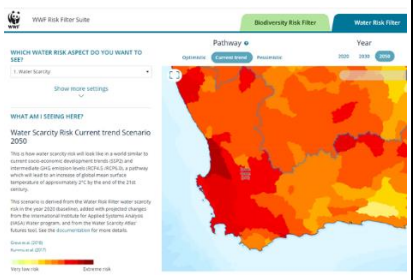
To assess this, three tools are to be used. Due to the fact that the Green Book uses an average climate scenario for looking at future water vulnerabilities at municipal scale, this tool is used here to cross check if there is directional agreement with the findings of the other two tools.

The Green Book	WRI Aqueduct	WWF Water Risk Filter
The Green Book does not provide for the three different scenarios to assess water vulnerability into the future and provides for an average of RCP 4.5 and RCP 8.5. As such, for the year 2050 and medium growth does the projected water supply vulnerability align with the findings in the other two tools?	Access the future tab, 2040 timeframe and the optimistic scenario. Use the water stress indicator.	Access water risk filter, using the scenario maps, then basin physical risk and water scarcity. Use the optimistic pathway for the year 2050 and the risk view.
		
Provides a municipal scale indication of future water supply vulnerabilities under an average scenario.	Provides catchment scale indication of future water stress under optimistic scenarios.	Provides catchment scale indication of the risks of water scarcity under optimistic scenarios.

3. Level of local water scarcity induced by climate change under current/ business as usual climate scenarios

This criterion assesses the impacts of climate change on the level of water scarcity in a world with unequal and unstable socio-economic development (SSP3) and high GHG emission levels (RCP6.0 /RCP8.5), a pathway which will lead to an increase of global mean surface temperature of approximately 3.5°C by the end of the 21st century.

To assess this, three tools are to be used. Due to the fact that the Green Book uses an average climate scenario for looking at future water vulnerabilities at municipal scale, this tool is used here to cross check if there is directional agreement with the findings of the other two tools.

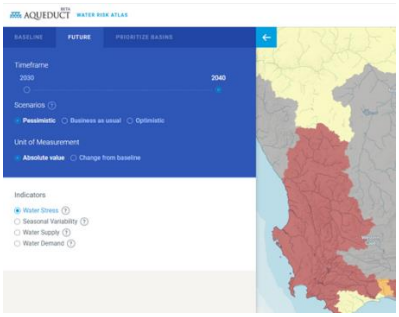
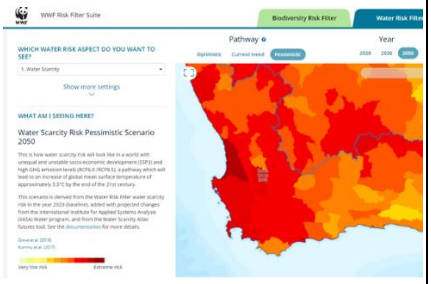
The Green Book	WRI Aqueduct	WWF Water Risk Filter
The Green Book does not provide for the three different scenarios to assess water vulnerability into the future and provides for an average of RCP 4.5 and RCP 8.5. As such, for the year 2050 and medium growth does the projected water supply vulnerability align with the findings in the other two tools?	Access the future tab, 2040 timeframe and the business-as-usual scenario. Use the water stress indicator.	Access water risk filter, using the scenario maps, then basin physical risk and water scarcity. Use the current trend pathway for the year 2050 and the risk view.
		
Provides a municipal scale indication of future water supply vulnerabilities under an average climate scenario.	Provides catchment scale indication of future water stress under the business-as-usual scenario.	Provides sub-catchment scale indication of the risks of water scarcity under a current trends scenario.

4. Level of local water scarcity induced by climate change under pessimistic future climate scenarios

This criterion assesses the impacts of climate change on the level of water scarcity in a world with unequal and unstable socio-economic development (SSP3) and high GHG emission levels (RCP6.0 /RCP8.5), a pathway which will lead to an increase of global mean surface temperature of approximately 3.5°C by the end of the 21st century.

To assess this, three tools are to be used. Due to the fact that the Green Book uses an average climate scenario for looking at future water vulnerabilities at municipal scale, this tool is used here to cross check if there is directional agreement with the findings of the other two tools.

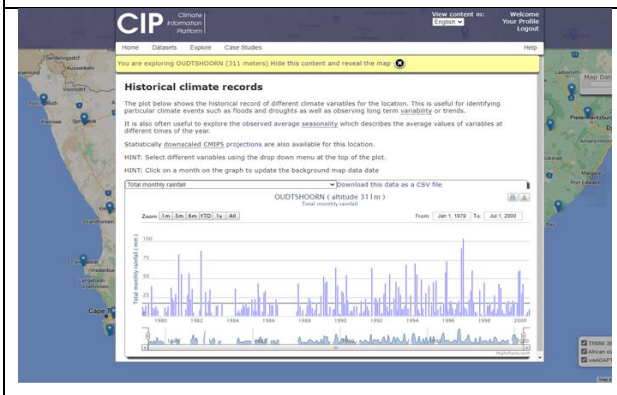
The Green Book	WRI Aqueduct	WWF Water Risk Filter
The Green Book does not provide for the three different scenarios to assess water vulnerability into the future and provides for an average of RCP 4.5 and RCP 8.5. As such, for the year 2050 and medium growth does the projected water supply vulnerability	Access the future tab, 2040 timeframe and the pessimistic scenario. Use the water stress indicator.	Access water risk filter, using the scenario maps, then basin physical risk and water scarcity. Use the pessimistic pathway for the year 2050 and the risk view.

align with the findings in the other two tools?		
		
Provides a municipal scale indication of future water supply vulnerabilities under an average climate scenario.	Provides catchment scale indication of future water stress under the pessimistic scenario.	Provides sub-catchment scale indication of the risks of water scarcity under a pessimistic scenario.

5. Climatic history (rainfall)

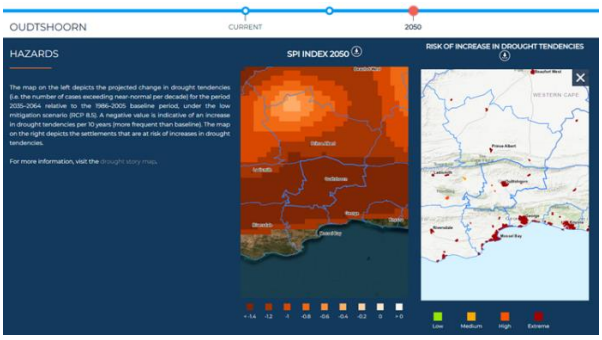
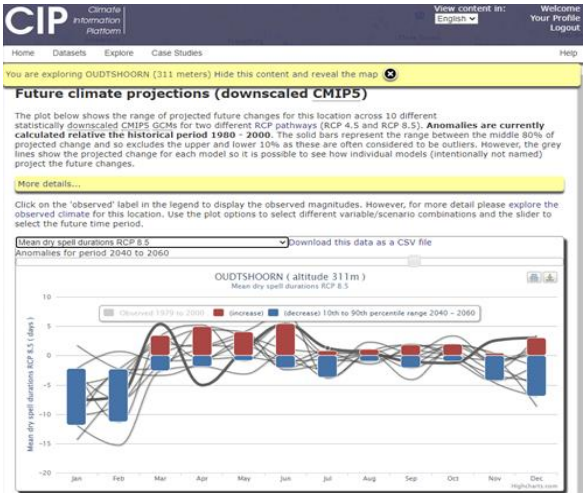
This criterion uses rainfall datasets for potential wetting and drying trends. To do this all submissions will be required to submit a review of historical rainfall datasets using trend analysis to show potentially no increase in the average rainfall or increases (wetting) or decreases (drying). These will be considered against known trends in water demand.

To support this and to corroborate the trend analysis submitted the following tool will also be used.

Climate Information Platform
The Climate Information Platform provides a climate database that stores and manages queries to a large suite of observational climate data as well as projections of future climate. This includes a significant number of rainfall stations nationally providing a merged set of stations sourced from the GHCN, WMO and country Met. Services. This will enable the selection of a most proximate rainfall station. The historical climate records and trends can be assessed looking at total monthly rainfall, for each selected rainfall station.

Provides an indication of the historical rainfall trend over a period of at least 20 years, dependent on the length of record available.

6. Climatic history (drought tendencies)

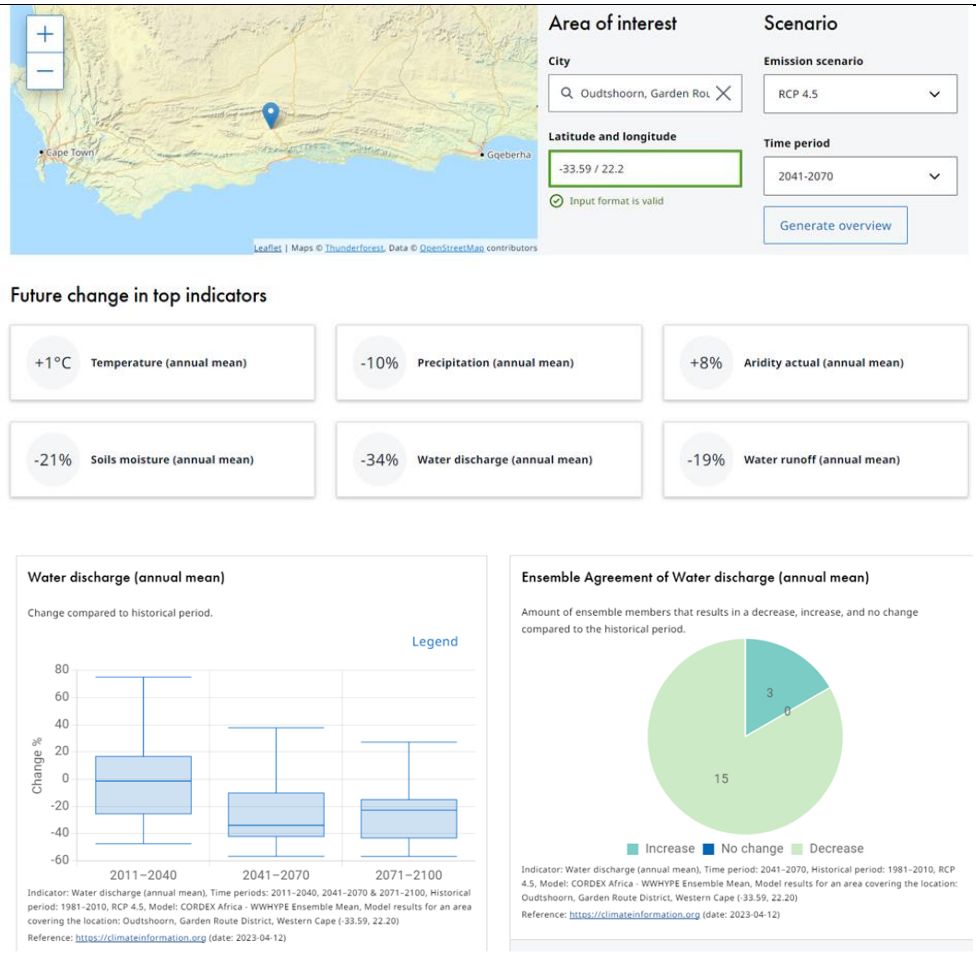
This criterion assesses the climate change impact on increased or decreased prevalence of drought into the future. The use of the Green Book tool is primarily used for this and assess slower onset, longer duration events. The Climate Information Platform also provides future climate projections using CMIP5 GCMs under RCP 4.5 and 8.5 pathways, for rainfall stations nationally. These future projections provide an assessment of future annual dry spell durations and these are a useful indication of shorter term dry spells/ periods and can be used to corroborate drought tendencies information provided by the Green Book.

The Green Book	Climate Information Platform
The Green Book assessing the projected change in drought tendencies (i.e. the number of cases exceeding near-normal per decade) for the period 2035–2064 relative to the 1986–2005 baseline period, under the low mitigation scenario (RCP 8.5). A negative value is indicative of an increase in drought tendencies per 10 years.	Select the future climate projections for the selected rainfall station, and mean dry spell durations RCP 8.5 for the period 2040-2060. The solid bars represent the range between the middle 80% of projected change and so excludes the upper and lower 10% as these are often considered to be outliers. However, the grey lines show the projected change for each model so it is possible to see how individual models project the future changes.
	
Provides a municipal scale indication of future drought tendencies.	Provides projected changes in mean dry spells at a proximate selected rainfall station.

7. GCF-WMO Climate Information Tool Ensemble Assessment

The Climate Information tool provides an invaluable overview of climate change impacts at selected sites, using the site-specific report tool. The listed indicators will provide an indication as to whether the future projections of changes in temperature, rainfall, aridity and water discharge, when combined with the knowledge of water demand, demonstrate that climate change will be a significant factor in future water scarcity.

To this end the following is to be used.

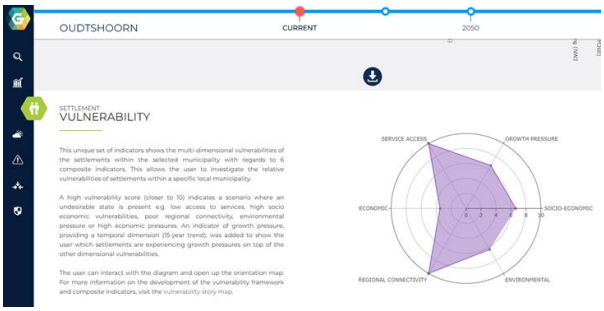
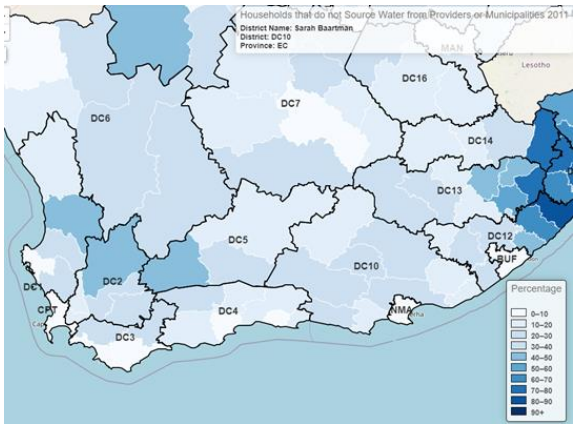
GCF-WMO Climate Information Tool
Using the site-specific report tool, select the town/city or a geographic location. Generate an overview for the RCP 4.5 and 8.5 pathways to understand the difference in results between these two pathways. Use the 2041-2070 time period and assess the future change top indicators with a focus on temperature, precipitation, aridity and water discharge. Also review the indicator detail for water discharge (annual mean).

Provides an indication of overall impact of climate change for a location across differing timelines and pathways.

8. Vulnerability

Noting that a broad understanding of water scarcity (baseline and futures) has been incorporated into the scorecard, the nature of this criterion is too assess the extent to which the most vulnerable elements of society are exposed to the impacts of climate change. In South Africa, there are still communities that do not receive basic water services or are underserved. Therefore, all submissions will be required to submit the latest statistics regarding the percentage of the population that is unserved. A percentage of 40-50% (and above) would be deemed as high.

There are two tools that are to be sued to support this assessment of vulnerability.

The Green Book	Lets Respond Toolkit
The Green Book is used here to provide an overview of vulnerability as this is done at settlement level and gives	The toolkit provides at local municipality level climate change summary reports that outlines the vulnerability of

a score out of 10 (10 being most vulnerable) for service access, growth pressure, socio-economic, environmental, regional connectivity, and economic. Use the current context, and local municipal vulnerability for the selected municipality.	a range of sectors to the impacts of climate change. The water section of these reports is to be reviewed together with supplied statistics. These reports included a range of key indicator statistics in the annexures, and these can also be reviewed against the statistics provided in the project submission. Also, under the Resources/ Maps/ Water/ Water Census Maps is national map of the percentage of households that do not source water piped water schemes. This map is also to be checked to corroborate data that has been provided. https://letsrespondtoolkit.org/resources/maps/water-census/do-not-source-water-from-piped-schemes/
	
Provides a municipal scale overview of the types of vulnerability experienced.	Provides at municipal scale an indication of the vulnerability of communities to water stress due to poor levels of access to basic water services.

9. Mitigation impact (tCO2e)

While the WRP is primarily focused on adaptation, the level to which a sub-project contributes to the reduction of GHG emissions is important for all submissions. As such, all submissions will be required submit information in this regard, providing the supporting calculations and evidence. Noting that this will be context specific, the WRU will look at the potential for benchmarks so that the level of mitigation impact can be assessed against these benchmarks, where these may exist.

10. Mitigation impact through beneficiation

A number of projects have been undertaken in South Africa to explore the beneficiation of waste sludge. Some of these have been successful while others were not viable. The opportunities for beneficiation need to be assessed by all submissions that are presented to the WRP. This criterion will assess the level to which the sub-project will contribute to the mitigation of impacts through sludge beneficiation, based on the submitted information and when compared to potential benchmarks.

These criteria and the use of the scorecard has been tested against three hypothetical case studies and these are presented in Annexure A.

4. Conclusion

This report provides process guidance for the screening of sub-projects to ensure that the WRP only supports projects that demonstrate future water scarcity as a result of climate change impacts. The WRP Primary Climate Change Screening scorecard has been developed to ensure this at an early stage of the project cycle development process. This will ensure that all funds are used effectively and efficiently towards addressing the impacts of climate change.

Noting that these sub-project submissions will have varying levels of data and information supporting the submission, it will be imperative that the WRU firstly be clear with all Project Owners as to the submission requirements, and secondly, provide support to less capacitated Project Owners to ensure that submissions do meet the requirements for the screening process.

Invariably, all projects will require a detailed climate risk and vulnerability assessment. This may require a study to be undertaken in its entirety, or that submitted assessments may need to be appraised and strengthened to meet the needs of the WRP. The results of the Primary Climate Change Screening will determine procedurally, when and how that takes place and this has been described in this guideline.

The relationship between the various structures that support the WRP have been outlined, from the perspective of ensuring rigour in the screening of sub-projects that are submitted to the programme. Importantly, the WRU will play an essential role in aiding Project Owners to submit sufficient quality proposals supported by the necessary data and information. Due to that support role, the WRU is not part of the screening process other than to provide administrative support and to document the proceedings. The Climate Change Screening Committee while having leading members from the WPO, will also have independent and appropriately qualified members to undertake the screening. The DBSA Investment Committee will not have been part of prior processes and as such will be reviewing and assessing financial viability. Hence, these various structures have clear roles that are underpinned by the DBSA's principles of ensuring sound governance.

Lastly, and importantly, the set-up of the Climate Change Screening Committee and its membership will be submitted to the GCF for its endorsement. The findings of the committee and the justifications for all decisions made will be documented and submitted to the GCF, to ensure that GCF is satisfied with the approach and how this is being applied. This will be an important element of the regularised reporting that the programme will establish.

Annexure: Case Studies

Three hypothetical case studies were used to test the Primary Climate Change Screening scorecard and process. Noting that there are likely to be quite specific nuances to each submission it is nevertheless important to have clarity and rigour in how decisions are made. Also, while there are two exclusionary stage gates, the primary one being climate change impact related and the second being more technically focused, there are linkages between these and the subsequent process that need to take place.

For this purpose, three case studies were used as tabulated below.

Case Study 1	Case Study 2	Case Study 3
• South western Cape • Current water scarcity is high • Water scarcity over differing climate scenarios increases significantly to extreme levels of risk • Rainfall decreasing over time and predicted longer dry spells • 2.7% of population unserved and reuse will eradicate this • 70 Ml/d for indirect potable reuse, upgradeable to 100 Ml/d • Current WWTW activated sludge plant functioning at 113% design capacity • 85% compliance with Green Drop score • Low levels of environmental impact and improvement of riverine health • Biogas generation in design concept	• Eastern Cape Coastal • Current water scarcity is medium • Water scarcity over differing climate scenarios increases • Decreasing rainfall and longer dry spells • 3% of population unserved and reuse will eradicate this • 140 Ml/d for direct potable reuse • Current WWTW activated sludge plant functioning at 76% design capacity • 62% compliance with Green Drop score • Marine outfalls for brine • Low levels of environmental impact and improvement of riverine health • Options for sludge pelletisation	• North east coastal • Current water scarcity is low • Water scarcity over differing climate scenarios unchanged • 11% of the population unserved and reuse will eradicate this • 60 Ml/d for direct potable reuse • 35 Ml/d for industrial potable reuse • Current WWTW activated sludge plant functioning at 83% design capacity • 66% compliance with Green Drop score • Marine outfalls for brine • Low levels of environmental impact and improvement of riverine health • Biogas generation for electricity and sludge composting

Case Study 1: South Western Cape

The following scoring was developed.

Water Reuse Programme - Climate Change Basis Screening

	Criterion	Low potential / poor	1 2 3 4 5	High potential / excellent	Rating	Comments
1	Level of local baseline water scarcity	Low risk	○ ○ ○ ○ ●	High risk	5	Green Book shows supply can meet current demand, WR Aqueduct shows extremely high risk >80%; WRF shows evry risk of baseline water
2	Level of local water scarcity/ stress induced by climate change under optimistic future climate scenarios	Low risk	○ ○ ○ ● ○	High risk	4	Green Book shows -20% reductuion in mean annual runoff and -3% reduction in urban water supply. WRI Aquedcut shows extremely high risk. WRF shows high risk.
3	Level of local water scarcity induced by climate change under current/ business as usual climate scenarios	Low risk	○ ○ ○ ● ○	High risk	4	Green Book shows -20% reduction in mean annual runoff and -3% reduction in urban water supply. WRI Aquedcut shows extremely high risk. WRF shows very high risk.
4	Level of local water scarcity induced by climate change under pessimistic future climate scenarios	Low risk	○ ○ ○ ○ ●	High risk	5	Green Book shows -20% reductuion in mean annual runoff and -3% reduction in urban water supply. WRI Aquedcut shows extremely high risk over much greater area of Western Cape influencing entire supply system. WRF shows very high risk.
5	Climatic history (rainfall)	Wetting	○ ○ ○ ○ ●	Drying	5	Historical data shows drying trend from 1980.
6	Climatic history (drought tendencies)	Low tendancies	○ ○ ○ ○ ●	High tendancies	5	Green Book shows high to extremely high drought tendancies for period 2035-2064. Climate Information Portal shows longer dry spells in summer months (noting this is a winter rainfall region).
7	GCF-WMO Climate Information Tool Ensemble Assessment	Low climate impact	○ ○ ○ ● ○	High climate impact	4	Under RCP4.5 -8% reduction in rainfall., +1% increase in aridity, -5% redcution in water discharge. Under RCP8.5 -15% reduction in rainfall, -2% increase in aridity, -12% reduction in water discharge
8	Vulnerability	Low	○ ● ○ ○ ○	High	2	Levels of underserved are relatvely low and municpal efforts to support these commuities during covid pandemic has helped to improve levels of service
9	Mitigation impact (tCO2e)	Low or Marginal climate mitigation impact	○ ○ ● ○ ○	High mitigation impact	3	Design reduces gas emissions as part of beneficiation
10	Mitigation impact through beneficiation	Poor opportunities for beneficiation	○ ○ ● ○ ○	Strong opportunities for beneficiation	3	Biogas generation in design concept, enough to power works and reduce load on the national grid

From this scorecard the findings for the sub-project were as provided below. Due to high score on the primary criteria the secondary criteria were applied. The successful application of the secondary criteria, enables the use of the tertiary criteria and then overall findings. The climate change basis for this sub-project is strong and so the undertaking of the CRVA together with the project preparation steps is warranted.

Primary Screening

Water Reuse Programme - Climate Change Basis Screening Summary

Instructions: complete first section below, then score and comment on "Detailed Evaluation" sheet. Finally, complete "Comments and recommendations" section at the bottom of this sheet.

PROJECT TITLE :	South Western Cape
Application No:	WRP001
Reviewer name:	Climate Expert #1
Date:	12-Apr-23

#	Criterion	Relative Weighting	Criterion score
1	Level of local baseline water scarcity	1	5
2	Level of local water scarcity/ stress induced by climate change under optimistic future climate scenarios	1	4
3	Level of local water scarcity induced by climate change under current/ business as usual climate scenarios	1	4
4	Level of local water scarcity induced by climate change under pessimistic future climate scenarios	1	5
5	Climatic history (rainfall)	2	5
6	Climatic history (drought tendencies)	2	5
7	GCF-WMO Climate Information Tool Ensemble Assessment	2	4
8	Vulnerability	2	2
9	Mitigation impact (tCO2e)	1	3
10	Mitigation impact through beneficiation	1	3
		14	
	Total Weighted Score		**75%**

Comments and recommendations

Recommendation for funding

(●) Highly recommended (Score is typically between 75 - 100%)	Current CRVA be upated or detailed CRVA to be undertaken together with other studies as part of the project preparation stage
( ) Worthy of consideration (Score is typically between 60 - 74%)	Detailed CRVA required prior to any further investment
( ) Not recommended (Score is 50% to 60%)	Further work is required to prepare the submission
( ) Recommend to not resubmit (Score is below 50%)	Rejected

Secondary Screening

WWTW Design Capacity	Greater that 20 Ml/d	Yes, greater than 20-Ml/d
Regulatory Compliance (Chemical)	Greater than 50% regulatory compliance	Yes, greater than 50% compliance
WWTW Technology Type	Only activated sludge plants will be supported to ensure the consistency of effluent quality required.	Yes, incorporates and activated sludge plant.
Environmental Safeguards	All projects shall comply with both GCF and DBSA Environmental and Social Safeguards Standards, with only Category B and C levels of impact being acceptable.	Yes, meets the safeguard requirements of GCF and DBSA and risk is at levels B and C.

Tertiary Screening

Beneficiation	Priority will be provided to projects that provide for mitigation including biogas, solar power, sludge management and sludge beneficiation.	Yes, incorporated but more detail required at next screening
Linkage to strategic projects	Priority will be provided to water reuse projects in supporting of strategic projects.	Yes, linked to Western Cape Water Supply System and associated supply strategy
Offtake agreements	Priority will be afforded to projects where the existence of a confirmed offtake agreements	Yes, City of Cape Town

Outcome

- Project support be recommended to assist with feasibility study and accompanying CRVA
- Based on feasibility the integration of adaptation support and mitigation places this as a priority intervention

Case Study 2: Eastern Cape Coastal

The following scoring was developed.

Water Reuse Programme - Climate Change Basis Screening

	Criterion	Low potential / poor	1 2 3 4 5	High potential / excellent	Rating	Comments
1	Level of local baseline water scarcity	Low risk	○ ● ○ ○ ○	High risk	2	Green Book shows supply cannot meet current demand, WR Aqueduct shows low risk <10%; WRF shows very low risk of baseline water stress
2	Level of local water scarcity/ stress induced by climate change under optimistic future climate scenarios	Low risk	○ ○ ● ○ ○	High risk	3	Green Book shows 24% reduction in mean annual runoff and 1.5% increase in urban water supply. WRI Aquedcut shows extremely high risk. WRF shows medium risk of water scarcity.
3	Level of local water scarcity induced by climate change under current/ business as usual climate scenarios	Low risk	○ ○ ○ ● ○	High risk	4	Green Book shows 24% reductuion in mean annual runoff and 1.5% increase in urban water supply. WRI Aquedcut shows extremely high risk. WRF shows medium water risk, but higher than optmistic scenario.
4	Level of local water scarcity induced by climate change under pessimistic future climate scenarios	Low risk	○ ○ ○ ● ○	High risk	4	Green Book shows 24% reductuion in mean annual runoff and 1.5% increase in urban water supply. WRI Aquedcut shows extremely high risk. WRF shows medium water risk, but higher than optmistic scenario.
5	Climatic history (rainfall)	Wetting	○ ○ ○ ● ○	Drying	4	Historical data shows drying trend from 1980.
6	Climatic history (drought tendencies)	Low tendancies	○ ○ ○ ○ ●	High tendancies	5	Green Book shows high to extremely high drought tendancies for period 2035-2064. Climate Information Portal shows shorter dry spells in summer months (noting this is a winter rainfall region).
7	GCF-WMO Climate Information Tool Ensemble Assessment	Low climate impact	○ ○ ● ○ ○	High climate impact	3	Under RCP4.5 8% reduction in rainfall., 6% increase in aridity, 13% reduction in water discharge. Under RCP8.5 8% reduction in rainfall, 5% increase in aridity, 10% reduction in water discharge
8	Vulnerability	Low	○ ○ ● ○ ○	High	3	Levels of underserved are relatvely low but the drought for the last 10 years has meant little progress has been made
9	Mitigation impact (tCO2e)	Low or Marginal climate mitigation impact	○ ● ○ ○ ○	High mitigation impact	2	Scoping has included some design options but more work is required during the project preparation phase
10	Mitigation impact through beneficiation	Poor opportunities for beneficiation	○ ○ ○ ● ○	Strong opportunities for beneficiation	4	Options for sludge pelletisation included in design

From this scorecard the findings for the sub-project were as provided below. Due to score on the primary criteria the secondary criteria were applied. The successful application of the secondary criteria, enables the use of the tertiary criteria and then overall findings. The primary climate change screening indicates the need for a more detailed climate risk and vulnerability assessment, after which the primary screening will be re-applied prior to any further assistance.

Primary Screening

Water Reuse Programme - Climate Change Basis Screening Summary

Instructions: complete first section below, then score and comment on "Detailed Evaluation" sheet. Finally, complete "Comments and recommendations" section at the bottom of this sheet.

PROJECT TITLE :	Eastern Cape Coastal
Application No:	WRP002
Reviewer name:	Climate Expert #1
Date:	12-Apr-23

#	Criterion	Relative Weighting	Criterion score
1	Level of local baseline water scarcity	1	2
2	Level of local water scarcity/ stress induced by climate change under optimistic future climate scenarios	1	3
3	Level of local water scarcity induced by climate change under current/ business as usual climate scenarios	1	4
4	Level of local water scarcity induced by climate change under pessimistic future climate scenarios	1	4
5	Climatic history (rainfall)	2	4
6	Climatic history (drought tendencies)	2	5
7	GCF-WMO Climate Information Tool Ensemble Assessment	2	3
8	Vulnerability	2	3
9	Mitigation impact (tCO2e)	1	2
10	Mitigation impact through beneficiation	1	4
		14	
	Total Weighted Score		**63%**

Comments and recommendations

Recommendation for funding

○ Highly recommended (Score is typically between 75 - 100%)	Current CRVA be upated or detailed CRVA to be undertaken together with other studies as part of the project preparation stage
◉ Worthy of consideration (Score is typically between 60 - 74%)	Detailed CRVA required prior to any further investment
○ Not recommended (Score is 50% to 60%)	Further work is required to prepare the submission
○ Recommend to not resubmit (Score is below 50%)	Rejected

Secondary Screening

WWTW Design Capacity	Greater that 20 Ml/d	Yes, greater than 20-Ml/d
Regulatory Compliance (Chemical)	Greater than 50% regulatory compliance	Yes, greater than 50% compliance
WWTW Technology Type	Only activated sludge plants will be supported to ensure the consistency of effluent quality required.	Yes, incorporates and activated sludge plant.
Environmental Safeguards	All projects shall comply with both GCF and DBSA Environmental and Social Safeguards Standards, with only Category B and C levels of impact being acceptable.	Yes, meets the safeguard requirements of GCF and DBSA and risk is at levels B and C.

Tertiary Screening

Beneficiation	Priority will be provided to projects that provide for mitigation including biogas, solar power, sludge management and sludge beneficiation.	Yes, incorporated although feasibility is not clear from current information
Linkage to strategic projects	Priority will be provided to water reuse projects in supporting of strategic projects.	Yes, linked to Algoa Water Supply System and associated supply strategy
Offtake agreements	Priority will be afforded to projects where the existence of a confirmed offtake agreements	Yes, Nelson Mandela Bay Metro

Outcome

- Project requires CRVA to be undertaken prior to any further decision regarding preparation support, thereafter the primary screening will be re-applied
- WRU to support in initiating CRVA
- Secondary and tertiary screening is favourable but will be re-assessed post the CRVA

Case Study 3: North East Coastal

The following scoring was developed.

Water Reuse Programme - Climate Change Basis Screening

	Criterion	Low potential / poor → High potential / excellent (1 2 3 4 5)	Rating	Comments
1	Level of local baseline water scarcity	Low risk ● ○ ○ ○ ○ High risk	1	Green Book shows supply can meet current demand, WR Aqueduct shows low risk <10%; WRF shows very low risk of baseline water stress
2	Level of local water scarcity/ stress induced by climate change under optimistic future climate scenarios	Low risk ○ ● ○ ○ ○ High risk	2	Green Book shows 14% reduction in mean annual runoff and 48% increase in urban water supply. WRI Aquedcut shows low to medium risk (10-20%). WRF shows very low risk of water scarcity.
3	Level of local water scarcity induced by climate change under current/ business as usual climate scenarios	Low risk ○ ● ○ ○ ○ High risk	2	Green Book shows 14% reduction in mean annual runoff and 48% increase in urban water supply. WRI Aquedcut shows low to medium risk (10-20%). WRF shows low to medium risk of water scarcity.
4	Level of local water scarcity induced by climate change under pessimistic future climate scenarios	Low risk ○ ● ○ ○ ○ High risk	2	Green Book shows 14% reduction in mean annual runoff and 48% increase in urban water supply. WRI Aquedcut shows low to medium risk (10-20%). WRF shows low to medium risk of water scarcity.
5	Climatic history (rainfall)	Wetting ○ ○ ○ ● ○ Drying	4	Historical data shows drying trend from 1940.
6	Climatic history (drought tendencies)	Low tendancies ○ ○ ○ ● ○ High tendancies	4	Green Book shows high drought tendancies for period 2035-2064. Climate Information Portal shows slightly longerdry spells in winter months (noting this is a summer rainfall region).
7	GCF-WMO Climate Information Tool Ensemble Assessment	Low climate impact ○ ○ ● ○ ○ High climate impact	3	Under RCP4.5 0% reduction in rainfall., 15% increase in aridity, 7% increase in water discharge. Under RCP8.5 2% reduction in rainfall, 19% increase in aridity, 4% reduction in water discharge
8	Vulnerability	Low ○ ● ○ ○ ○ High	2	Levels of underserved are relatvely low to medium (10-20%)
9	Mitigation impact (tCO2e)	Low or Marginal climate mitigation impact ○ ○ ○ ● ○ High mitigation impact	4	Scoping has included biogas use for energy generation
10	Mitigation impact through beneficiation	Poor opportunities for beneficiation ○ ○ ○ ● ○ Strong opportunities for beneficiation	4	Options for sludge composting included in design

From this scorecard the findings for the sub-project were as provided below. Due to weak score on the primary criteria the project is rejected.

Primary Screening

Water Reuse Programme - Climate Change Basis Screening Summary

Instructions: complete first section below, then score and comment on "Detailed Evaluation" sheet. Finally, complete "Comments and recommendations" section at the bottom of this sheet.

PROJECT TITLE :	North East Coastal
Application No:	WRP003
Reviewer name:	Climate Expert #1
Date:	12-Apr-23

#	Criterion	Relative Weighting	Criterion score
1	Level of local baseline water scarcity	1	1
2	Level of local water scarcity/ stress induced by climate change under optimistic future climate scenarios	1	2
3	Level of local water scarcity induced by climate change under current/ business as usual climate scenarios	1	2
4	Level of local water scarcity induced by climate change under pessimistic future climate scenarios	1	2
5	Climatic history (rainfall)	2	4
6	Climatic history (drought tendencies)	2	4
7	GCF-WMO Climate Information Tool Ensemble Assessment	2	3
8	Vulnerability	2	2
9	Mitigation impact (tCO2e)	1	4
10	Mitigation impact through beneficiation	1	4
		14	
	Total Weighted Score		**48%**

Comments and recommendations

Recommendation for funding

○	Highly recommended (Score is typically between 75 - 100%)	Current CRVA be upated or detailed CRVA to be undertaken together with other studies as part of the project preparation stage
○	Worthy of consideration (Score is typically between 60 - 74%)	Detailed CRVA required prior to any further investment
○	Not recommended (Score is 50% to 60%)	Further work is required to prepare the submission
◉	Recommend to not resubmit (Score is below 50%)	Rejected

Outcome
- Project rejected.
- While some criteria are positive, the overall climate change basis is weak.

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