Concept Note

Project/Programme Title:	Water recycling technology for Namibia
Country(ies):	Namibia
National Designated Authority(ies) (NDA):	_____
Accredited Entity(ies) (AE):	_____
Date of first submission/ version number:	*[YYYY-MM-DD] [V.0]*
Date of current submission/ version number	*[YYYY-MM-DD] [V.0]*

GREEN CLIMATE FUND

Please submit the completed form to **fundingproposal@gcfund.org**, using the following name convention in the subject line and file name:
"CN-[Accredited Entity or Country]-YYYYMMDD"

Notes

- The maximum number of pages should **not exceed 12 pages**, excluding annexes. Proposals exceeding the prescribed length will not be assessed within the indicative service standard time of 30 days.
- As per the Information Disclosure Policy, the concept note, and additional documents provided to the Secretariat can be disclosed unless marked by the Accredited Entity(ies) (or NDAs) as confidential.
- The relevant National Designated Authority(ies) will be informed by the Secretariat of the concept note upon receipt.
- NDA can also submit the concept note directly with or without an identified accredited entity at this stage. In this case, they can leave blank the section related to the accredited entity. The Secretariat will inform the accredited entity(ies) nominated by the NDA, if any.
- Accredited Entities and/or NDAs are encouraged to submit a Concept Note before making a request for project preparation support from the Project Preparation Facility (PPF).
- Further information on GCF concept note preparation can be found on GCF website Funding Projects Fine Print.

A. Project/Programme Summary (max. 1 page)			
A.1. Project or programme	☒ Project ☐ Programme	**A.2. Public or private sector**	☒ Public sector ☐ Private sector
A.3. Is the CN submitted in response to an RFP?	Yes ☐ No ☒ If yes, specify the RFP: _____	**A.4. Confidentiality**[1]	☒ Confidential ☐ Not confidential
A.5. Indicate the result areas for the project/programme	Mitigation: Reduced emissions from: ☐ Energy access and power generation ☐ Low emission transport ☐ Buildings, cities and industries and appliances ☐ Forestry and land use Adaptation: Increased resilience of: ☒ Most vulnerable people and communities ☒ Health and well-being, and food and water security ☐ Infrastructure and built environment ☒ Ecosystem and ecosystem services		
A.6. Estimated mitigation impact (tCO2eq over lifespan)		**A.7. Estimated adaptation impact (number of direct beneficiaries and % of population)**	
A.8. Indicative total project cost (GCF + co-finance)	Amount: USD _____	**A.9. Indicative GCF funding requested**	Amount: USD _____
A.10. Mark the type of financial instrument requested for the GCF funding	☒ Grant ☐ Reimbursable grant ☐ Guarantees ☐ Equity ☐ Subordinated loan ☐ Senior Loan ☐ Other: specify_____		
A.11. Estimated duration of project/ programme:	a) disbursement period: b) repayment period, if applicable:	**A.12. Estimated project/ Programme lifespan**	20 years This refers to the total period over which the investment is effective.
A.13. Is funding from the Project Preparation Facility requested?[2]	Yes ☐ No ☐ Other support received ☐ If so, by who:	**A.14. ESS category**[3]	☐ A or I-1 ☐ B or I-2 ☐ C or I-3
A.15. Is the CN aligned with your accreditation standard?	Yes ☐ No ☐	**A.16. Has the CN been shared with the NDA?**	Yes ☒ No ☐
A.17. AMA signed (if submitted by AE)	Yes ☐ No ☐ If no, specify the status of AMA negotiations and expected date of signing:	**A.18. Is the CN included in the Entity Work Programme?**	Yes ☐ No ☐
A.19. Project/Programme rationale, objectives and approach of programme/project (max 100 words)	Brief summary of the problem statement and climate rationale, objective and selected implementation approach, including the executing entity(ies) and other implementing partners.		

[1] Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy (Decision B.12/35) and the Review of the Initial Proposal Approval Process (Decision B.17/18).
[2] See here for access to project preparation support request template and guidelines
[3] Refer to the Fund's environmental and social safeguards (Decision B.07/02)

B. Project/Programme Information (max. 8 pages)

B.1. Context and baseline (max. 2 pages)

Namibia is the most arid African country south of the Sahara with low and varied precipitation, from a maximum of ± 650mm in the north east to less than 50mm per year along the coast. It is estimated that only 2% of the rainfall ends up as surface run-off and a mere 1% becomes available to recharge groundwater. The balance of 97% is lost through evaporation (83%) and evapotranspiration (14%).

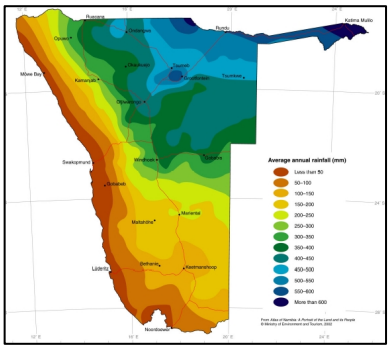


Figure 1. average annual rainfall

It is well known that the distribution of rain over time and space is much more variable in dry climates compared to wetter climates. Rainfall in Namibia commonly falls as intense local showers. This leads to a high spatial and temporal variability of rainfall, both within and between years. Another feature of the dry Namibian climate is the severe impacts drought has on the biological production. The majority of the population is rural and very dependent on the climate for their livelihoods. The urban population depends on good rainfall and runoff in the rivers that feed water supply dams and aquifers to sustain their water needs. During multi-year droughts the biological production commonly drops dramatically and reserves of food, grazing for livestock, livestock numbers and water are severely depleted (Moorsom 1995).

Due to the aridity of the Namibian climate all rivers in the interior of the country are ephemeral, meaning that they only flow when rainfall is sufficient, normally only for short periods during the rainfall season. This limits the potential of the surface water sources and the recharge of groundwater. As far as the geo-hydrology of Namibia is concerned all water available as groundwater originates from rainfall, whether from recent precipitation or rain that fell in prehistoric times. The occurrence of groundwater depends on a combination of sufficient rainfall and favourable geo-hydrological conditions. The largest part of the country is covered by geological ancient rocks which are inherently impervious. Groundwater is found in secondary structures along joints, bedding planes, shear zones and faults.

Even though predictions of the future climate in Namibia are still uncertain when it comes to the finer details, most models predict as bellows;

- Increased maximum temperatures
- A longer dry season
- Increased humidity and convection, and
- More intense rainfall.

■ Water resources

Namibia is primarily a large desert and semi-desert plateau. Namibia's climate is hot and dry with erratic rainfall during two rainy seasons in summer. Namibia shares several large rivers, such as the Orange River in the South, shared with South Africa, as well as the Zambezi and Okavango Rivers in the North, shared with Angola, Zambia and Botswana. But these rivers are far away from the population centres and the cost of tapping them for drinking water supply is prohibitive. Only the Cunene River, which is shared with Angola, provides drinking water for four Northern regions of Namibia. 88% of Namibia's water potential lies in its perennial rivers on its northern and southern borders 80+% of its land area relies solely on groundwater.

■ Groundwater

Groundwater is distributed unevenly over the territory of Namibia, thus making the construction of pipelines necessary to tap their potential. In particular, the coastal area is nearly devoid of groundwater. Recharge in these areas is low and unreliable, groundwater lies at great depths and sometimes is of poor quality. In some areas, groundwater is slightly saline (brackish).

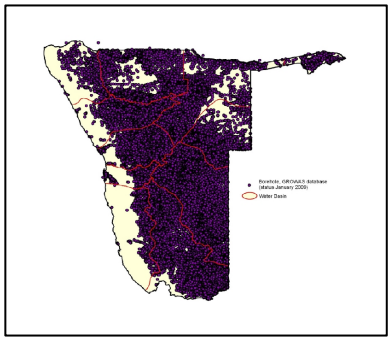


Figure 2. Distribution of boreholes in Namibia (IWRM, 2010)

■ Surface water

Many of the ephemeral (seasonally flowing) rivers of the Namibian interior are dammed and, according to the FAO, provide a 95%-assured yield of 96 million

m^3/year, based on historical rainfall data. These dams have low safe yields in comparison to their total volume, because of uneven flows over time and high evaporation losses. Thus only about half the water from ephemeral rivers is usable. There is surplus water in some dams, e.g. in the Oanob Dam, the Hardap Dam, the Naute Dam and the Friedenau Dam. This surplus water cannot be used because of the remote location of these dams and the comparatively limited local demand.

Namibia has agreements in place with Angola and South Africa about the sharing of the Cunene and Orange Rivers respectively. The water allocation from the Cunene River is 180 million m3 and thus far larger than the amount withdrawn

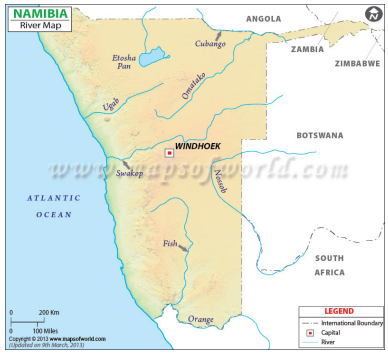


Figure 3. Namibia river map (maps of world)

■ Seawater desalination

The first large desalination plant in Sub-Saharan Africa was inaugurated by Areva on the 16 April 2010. The Arongo plant is located near Wlotzkasbaken, 30 km north of Swakopmund. Its maximum capacity is 20 million m^3 per year but it will initially supply 13 million m^3. Its primary purpose was to supply the uranium mine at Trekkopje, located 48 kilometres (30 mi) inland. The Trekkopje mine however never opened due to persistent low uranium prices, hence the plant has a contract to sell water to state-owned service provider Namwater and provides some of the water requirements for the town of Swakopmund.
Desalination has been on the agenda as a possible solution to water shortages in Namibia Windhoek for some time and was raised as a possible solution

Figure 4. Arongo desalination plant

■ Day zero

Namibia's capital, Windhoek, officially declared a water crisis and implemented stricter water-use regulations from June 1 2019. at a media briefing held on Monday, May 13 2019. Windhoek has been plagued by drought since August 2018, and although the municipality has attempted to reduce the city's water consumption, readings taken in April 2019 indicate that public usage is more than 12% above the allocation. This water crisis is due to several factors, the main one being the impact of the drought and the reduction in supply from Namwater.

■ Gender and Water supply

According to the chief engineer of Bulk Water and Wastewater in DIWWM, the informal settlements primarily receive their water through communal taps situated within 75m of informal houses.
Through the Windhoek municipality's guidelines, the city government tries to nudge the citizens to have a restricted water usage in time of water shortage. One way to implement a more environmentally friendly use of water is through the utilization of grey water. Grey water is a term used for the water that has not come into contact with toxic material such as faeces, but rather those that stem from used water. The use of grey water is promoted as a useful mean in nourishing the garden, decreasing the consumption of water and helping households.

Drought in Namibia is a particular burden for women. Drought conditions force women to travel longer distances to seek water, and the burden on women's time and energy leaves less time for them to care for themselves and look after their dependants.

The 2013 Baseline Report on Human Rights found that (87%) of Namibian had access to an improved source of drinking water; urban households were more likely than rural households to have such access, (97.5%) and (75.5%) respectively. Disaggregated data about water collection are not available in the Demographic and Health Survey 2013. The survey reported an overall percentage of (26%) of rural households and (5%) of urban households of Namibians spending 30 minutes or longer collecting drinking water. However, Namibian women in the household are often considered the primarily responsible for the collection of drinking water. Walking to remote locations after dark puts women and girls at risk of harassment, sexual assault and rape. This can result in undesirable pregnancies, sexually transmitted infections, being accused of being adulterous by husbands, being disowned by families, or mocked by other community members; and mental health challenges such as increased fear and stress.

Figure 5. Residents queue to collect water at a standpipe in Havana, Windhoek

B.2. Project/Programme description (max. 3 pages)

■ Otjiwarongo (Project Area)

Otjiwarongo is situated in central-north Namibia on the TransNamib railway. It is the biggest business center for Otjozondjupa Region. It is located on the B1 road and its links between Windhoek, the Golden Triangle of Otavi, Tsumeb and Grootfontein, and Etosha National Park. It is one of Namibia's fast-growing towns, with a neat and peaceful quality environment, and many excellent facilities including supermarkets, banks, lodges and hotels. Some of Namibia's best-known private game farms and nature reserves are located in and around the town.

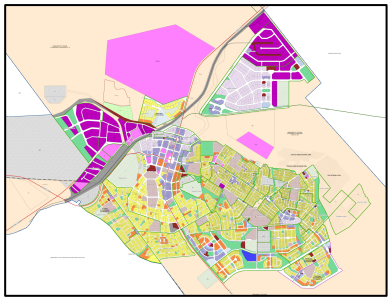


Figure 6. map of Otjiwarongo

In many of Otjiwarongo's townships residents live in shacks. In 2020 the city had a total of 6,251 of these informal housing structures, accommodating more than 50,000 inhabitants, more than the most recent (2011) census reported as total population figure. Otjiwarongo has a semi-arid climate with hot summers and mild winters. The average annual precipitation is 457 mm.

Now, Otjiwarongo receives the water supply from Nam Water, however, due to the lack of water resources, the water supply is not sustainable and stable. In the informal settlement area, the condition is worse.

The average water demand by month varies around from 3,500 m^3/d to 4,000 m^3/d.

In this project, we are likely to focus on the informal settlement area for water supply if any other conditions for the construction of water infra structure is affordable. Because in many developing countries, the accessibility for water related infra structure is worse than the one of formal settlement area.

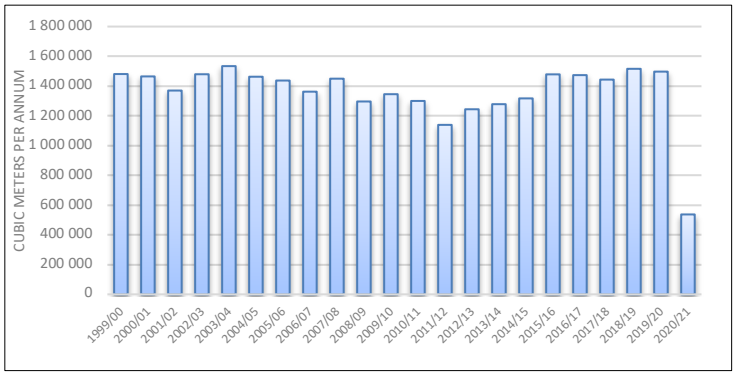


Figure 7. history of annual water demand

■ Existing Facility

The existing oxidation pond in Otjiwarongo is located at North-western side of city, and the Figure 3 and 4 shows the current status and pipe line network in oxidation pond. As it is shown, there is enough unused space in the pond. Now in this Feasibility study, we are going to make locate the water recycling plant in the available area in the existing plant area.

Table 1. Effluent quality of oxidation pond

	Value	Unit
pH	8.0	Ms/m
Conductivity	151.3	mg/l
TDS	1014	mg/l
Sodium as Na	140	mg/l
Nitrate as N	0.5	mg/l
Nitrite as N	0.1	mg/l
Temperature (C)	21.3	
COD	105	mg/l
Oxygen Absorbed	11.2	mg/l
BOD	22	mg/l
P	2.2	mg/l
Total Nitrogen as N	43.0	mg/l
Ammonia as N	2.6	mg/l
TSS	17.0	mg/l
Fat, Oil & Grease as FOG	<0.10	g/l

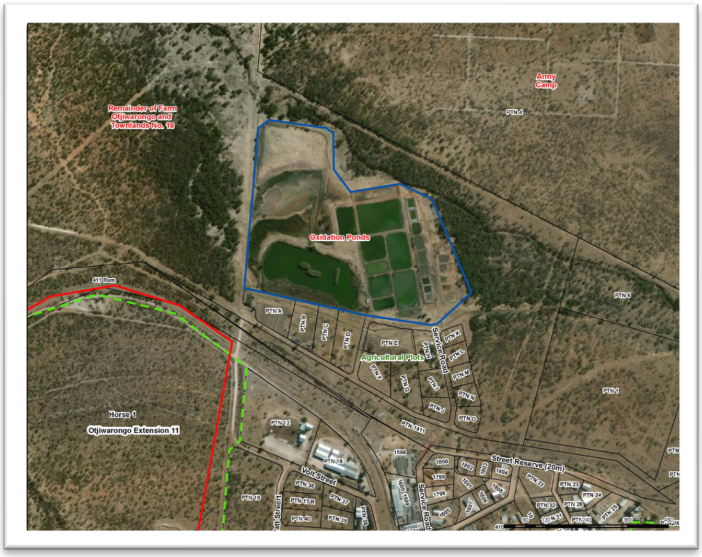


Figure 8. existing oxidation pond

Otjiwarongo has almost 100 % sewerage network coverage. All of wastewater occurred in the city are gather in the existing oxidation pond, and the effluent water quality is shown in the above table. Even though the values of some categories are over the common standard such as BOD, the overall status of effluent quality is not so bad to use as an influent of water recycling plant which is being planned in the feasibility study.

■ Component 1: Water recycling plant

The component 1 is water recycling plant which receives the influent from the existing oxidation pond then, supply the tap water after treatment. Basically, the beneficiary of this plant will be the people who lives in the formal settlement area around the city. The beneficiaries of this plant shall be from 500 to 1,000 people as per the unit water demand. In case of 100 LPCD, it will be 1000 people of beneficiaries.

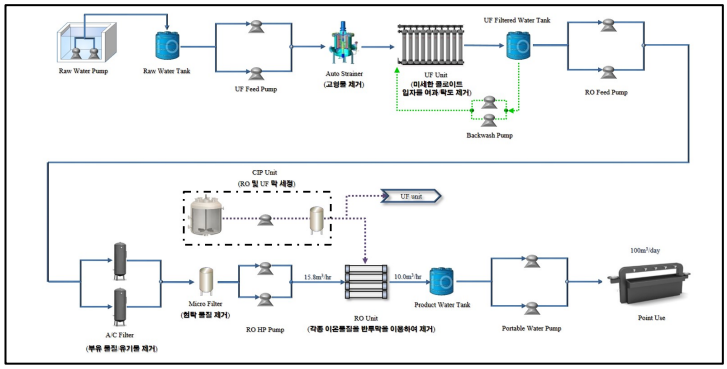


Figure 9. process diagram of component 1

The main process of plant consists of UF and RO with the capacity of 100 m^3/day. Considering the unstable power supply, Photovoltaics is applied as power sources together with ESS. The plant will be operated 10 hrs a day. We have applied 2 places of kiosk for the distribution of treated tap water and 5 km of pipe line. However, due to the covid-19, the field survey was not implemented. This kiosk items and the length of pipe line can be changed during the implementation stage based on the field survey within the available budget.

This facility will relief the burden of the people who lives in the informal settlement area. Even in the formal settlement area of Otjiwarongo, water supply is not stable and safe due to the lack of water sources. Especially, in drought season, it is possible to supply stable and safe water to the beneficiaries.

This plant is tubular type which means the main process will be in the container as shown in the figure below; it is convenient to construct and easy to expand the capacity in the future if there is more demand.

Table 2. estimated construction cost of component 1

	Specification	**amount**	**(USD)**
Civil + Architect	W8m x L15m	1	86,957
Process	UF + RO =100m^3/day=10m^3/hr (10hr Operation)	1	521,379
Photovoltaics	PV (25kw) + ESS	1	69,565
Transportation	Packing + transportation (Duty free)	1	52,174
Installation	Process *0.3	1	156,522
commissioning	3 Month x 2 people	6	58,261
Kiosk	Kiosk	2	13,913
Distribution	5 km		4,440,000
Total			**5,359,131**

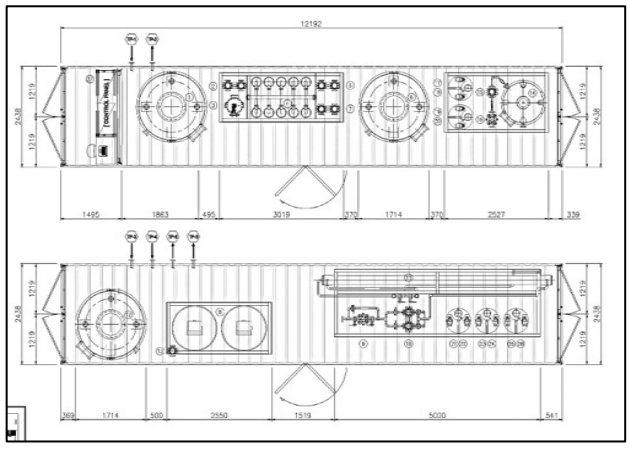


Figure 10. plane drawing of component 1

■ Component 2: Grey water recycling plant

The beneficiaries of component 2 will the primary school children. It will be located at near the primary school. It will receive the used water from the school and hospital (if possible) and supply to the school again for toilet water after treatment. The MBR (Membrane Bio Reactor) and NF is the main process of this plant. The photovoltaics is also applied in component 2 considering unstable power supply condition.

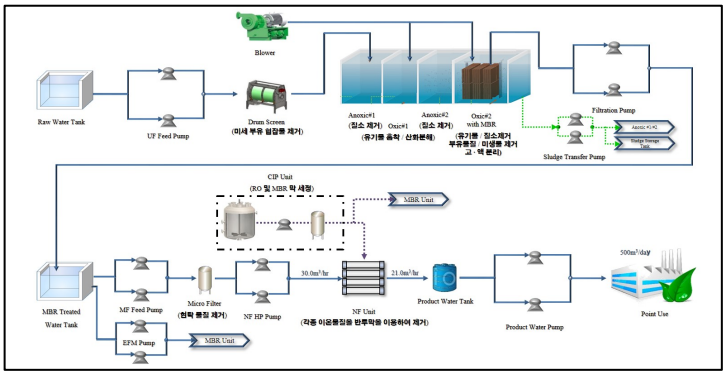


Figure 11. process diagram of component 2

Table 3. estimated construction cost of component 2

	Specification	USD
Civil Architect	W27m x L15m	869,565
Process	MBR + NF =500m^3/day=21m^3/hr (24hr operation)	1,304,348
Photovoltaics	PV (90kw) + ESS	1,800,000
Transportation	Packing + transportation Duty free condition	173,913
Installation	Process *0.3	391,304
commissioning	3 Month x 3 people	87,391
Total		**4,626,521**

Therefore, the total construction cost including component 1 & 2 is 9,985,652 USD.

■ National Development Plan 5

The NDP5 framework is organised around the four interconnected pillars that are founded on the principle of sustainable development namely, Economic Progression, Social Transformation, Environmental Sustainability and Good Governance.

Table 4 Desired Outcome indicators and targets

Category	Baseline	Targets over the NDP 5 periods				
		17/18	18/19	19/20	20/21	21/22
% of urban access to safe drinking water	98.3 (2016)	98.3	98.6	98.8	99.0	100.0
% of rural access to safe drinking water	84.0 (2016)	85.0	88.0	90.0	92.0	95.0

Water Strategies and Desired Outcomes addressed in NDP 5 are as follows,

- ***Upgrade Existing Water Infrastructure***

By maintaining the current infrastructure (Calueque- Oshakati and Etaka Canal Water Supply upgrade, up-grade and construct large earth dams (water harvesting for the rural areas and refurbish boreholes). Explore the use of innovative technologies to recycle waste water, mainly in the three major cities of Walvis Bay, Swakopmund and Windhoek.

- ***Construct new bulk water supply infrastructure***

Including a desalination plant to supply water to the central coast, the Kavango link for Augmenting Water Supply to the Central Area, development of the Noordoewer dam on the Lower Orange, the Stampriet transboundary aquifer, Tsumeb Acquifer, and Ohangwena Acquifer.

- ***Improve management of existing water sources***

This includes reducing losses, increasing water savings, addressing water quality and pollution control, upgrading and maintenance of the water resource data collection network and developing forecasting and early warning systems.

- ***Enhance transboundary water cooperation***

This strategy is aimed at ensuring equitable and reasonable access and allocation to transboundary shared water sources by securing Namibia share allocation and developing a water allocation strategy by 2018 with other riparian states.

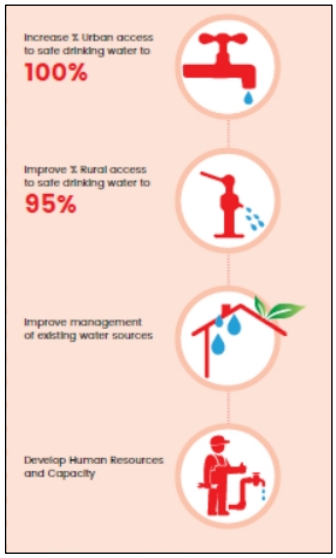


Figure 12. Desired outcome of NDP 5 (Water)

B.3. Expected project results aligned with the GCF investment criteria (max. 3 pages)

The GCF is directed to make a significant and ambitious contribution to the global efforts towards attaining the goals set by the international community to combat climate change, and promoting the paradigm shift towards low-emission and climate-resilient development pathways by limiting or reducing greenhouse gas emissions and adapting to the impacts of climate change.

■ Impact potential

The capacity of component 1 is 100 m^3/day which can serve more than 1000 persons with safe water if it is calculated based on the 100 Lpcd. If it serves only for potable water, the direct beneficiaries will increase up to 20,000 persons live in informal settlement area around the Otjiwarongo.
More than that, the total population of Otjiwarongo, which is around 50,000, is the indirect beneficiaries because the component 1 received treated wastewater from the wastewater treatment plant which receives the wastewater occurring at the whole area of Otjiwarongo.

In case of component 2, the capacity is 500 m^3/day and this is not for potable water but for gardening and toilet water. Therefore, the beneficiaries will be the whole people from the primary school, secondary school and hospital around the project site. The estimated number of people from school and hospital is around 2,000 persons.

The estimated total beneficiaries will be up to around 52,000 persons.

■ Paradigm shift

This project will make a significant contribution to Namibia's climate change adaptation strategy, by demonstrating the viability of Green urban activities. This program will be used to draw lessons and scale up with a paradigm shift towards climate-resilient development, e.g. with resilient planning approaches and small scale wastewater recycling plant standards. The project will also catalyze the intervention of subsequent private sector investors as well as public sector partners, unlocking green growth and kick-starting the scale up to the rest of the country.

This program will provide a demonstration of effective resilient method for vulnerable people living in informal settlement area where the national administrative power hardly covers, and will be used to inform master-planning for the national planning process.

■ Sustainable development

Among 17 Sustainable Development Goal, this project will contribute 5, 6, 7, 11, 13 goals.
As it is mentioned in B.1. Context and baseline, the women who are usually responsible for securing potable water for house can lessen the burden (Goal 5; Gender Equality).

Figure 13. UN SDG

After completion of component 1 and 2, beneficiaries can take safe water sustainably (Goal 6, Clean water and sanitation). These plants will use the Photovoltaics as energy source for operating and maintenance (Goal 7). This program will contribute to increase the settlement condition of the people who lives in the informal settlement area around the city. Finally, it will contribute the increase the sustainability of the city and community (Goal 11). Due to the climate change, the amount of available potable water is getting decrease. By introducing theses wastewater recycling plant, it will contribute to adapt climate change.

■ Needs of recipients

The water supply condition even in formal settlement area is not stable due to the climate change. Furthermore, the people live in informal settlement area don't have any water supply from public sector. They have to buy or to walk away to secure potable water. Due to the rapid urbanization, the number of people of informal settlement area is increasing rapidly with the pace that the government couldn't catch up the pace to build basic infra structure such as water supply and sanitation system.

■ Country ownership

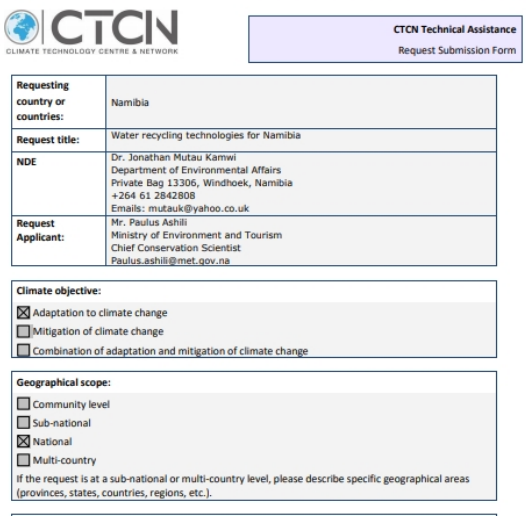
After completion of component 1 & 2, the program will have 3 months of commissioning periods. During this period, the contractor will build up local people's skill to operate plant. Finally, the community will operate and maintain the plant by themselves.

■ Efficiency and effectiveness

Through the financial analysis, it is analysed that this plant can be operated without subsidy if it sells the potable with minimum price for operating and maintenance. If there is small subsidy, it can be operated by itself without subsidy. .

B.4. Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)

This programe was started as the requste from NDA as you can see in figure 14. Response plan was established with the full support from NDA based on the request in 2019.



CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

CTCN Technical Assistance
Request Submission Form

Requesting country or countries:	Namibia
Request title:	Water recycling technologies for Namibia
NDE	Dr. Jonathan Mutau Kamwi Department of Environmental Affairs Private Bag 13306, Windhoek, Namibia +264 61 284280B Emails: mutauk@yahoo.co.uk
Request Applicant:	Mr. Paulus Ashili Ministry of Environment and Tourism Chief Conservation Scientist Paulus.ashili@met.gov.na

Climate objective:

- ☒ Adaptation to climate change
- ☐ Mitigation of climate change
- ☐ Combination of adaptation and mitigation of climate change

Geographical scope:

- ☐ Community level
- ☐ Sub-national
- ☒ National
- ☐ Multi-country

If the request is at a sub-national or multi-country level, please describe specific geographical areas (provinces, states, countries, regions, etc.).

Figure 15. CTCN TA request letter

MUNICIPALITY
OTJIWARONGO

REF NO 13/5/2/20
ENQUIRIES: Mr Naudé Slabbert

16 October 2020

Mr Teofilus Nghitila
Executive Director
Ministry of Environment, Forestry and Tourism
Private Bag 13306
WINDHOEK

Attention : Mr S Shifa
sionshifa@yahoo.com

Dear Mr Nghitila

PROPOSITION TO PARTAKE IN A CLIMATE TECHNOLOGY CENTRE AND NETWORK (CTCN) FUNDED PROJECT ON WATER RECYCLING TECHNOLOGIES

Your letter dated 29 September 2020 refers.

The Municipality is keen to participate in project as a result of our intent to embrace climate resilient strategies in waste water recycling and waste re-use.

It will be an honour and thank you for selecting our Municipality as a beneficiary of this noble initiative.

For any further enquiries in this regard kindly contact Mr Naude Slabbert at our office.

Yours faithfully

MOSES MATYAYI
CHIEF EXECUTIVE OFFICER
2020 -10- 16

Figure 14. Willingness letter of Otjiwarongo

Figure 15 shows the willingness of community where the project site is located. It is saying that the municipality is keen to participate in a project as a result of intent to this program.

C. Indicative Financing/Cost Information (max. 3 pages)

C.1. Financing by components (max ½ page)

Please provide an estimate of the total cost per component/output and disaggregate by source of financing.

Component/Output	Indicative cost (USD)	GCF financing		Co-financing		
		Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions
Component 1	5,359,131	5,359,131				
Component 2	4,626,521	4,626,521				
Indicative total cost (USD)	5,162,434	5,162,434				

For private sector proposal, provide an overview (diagram) of the proposed financing structure.

C.2. Justification of GCF funding request (max. 1 page)

Explain why the Project/ Programme requires GCF funding, i.e. explaining why this is not financed by the public and/ or private sector(s) of the country.

Namibia is one of the most vulnerable countries in the world to climate change with low and varied precipitation, from a maximum of ± 650mm in the north east to less than 50mm per year along the coast. It is estimated that only 2% of the rainfall ends up as surface run-off and a mere 1% becomes available to recharge groundwater. The balance of 97% is lost through evaporation (83%) and evapotranspiration (14%).

The expected impacts on climate change in Namibia are well documented in the national plan such as NDP5 and other integrated water resource management plan published in Namibia. Climate change impacts will combine with topographic factors to significantly damage Namibia's growth and development with implications for peace and stability in the country as well as the region. Urgent action is needed to deliver the national strategies that have been developed by the Government, such as the NDP 5.

Namibia's commitment to adapting and mitigating climate change is recognized worldwide and there is strong ownership of the development and green growth agenda. Namibia has established a strong and effective policy framework to deal with climate change. All the necessary policies and legal frameworks are well described in NDP 5 (National Development plan). There is high-level ownership and commitment to adapting to the effects of climate change and Namibian institutions, and the EIF Namibia has excellent experience from implementing a number of projects that support adaptation. Especially, In Windheok, there is water reclamation plant, called Goreangab WRP, which is the almost only one water reclamation plan for potable water for last 40 years in the world. It is responsible for the 30 % of potable water supply demand in Windehok.

Describe alternative funding options for the same activities being proposed in the Concept Note, including an analysis of the barriers for the potential beneficiaries to access to finance and the constraints of public and private sources of funding.

However, the water supply condition to suburb area is not so stable and enough. Especially due to the rapid urbanization of major cities and the shortage of water sources, the Namibian government can't supply enough and safe water to the people who lives at the informal settlement area of the cities.

Justify the rationale and level of concessionality of the GCF financial instrument(s) as well as how this will be passed on to the end-users and beneficiaries. Justify why this is the minimum required to make the investment viable and most effi cient considering the incremental cost or risk premium of the Project/ Programme (refer to Decisions B.12/17; B.10/03; and B.09/04 for more details). The justification for grants and reimbursable grants is mandatory.

In the case of private sector proposal, concessional terms should be minimized and justified as per the Guiding principles applicable to the private sector operations (Decision B.05/07).

C.3. Sustainability and replicability of the project (exit strategy) (max. 1 page)

Please explain how the project/programme sustainability will be ensured in the long run and how this will be monitored, after the project/programme is implemented with support from the GCF and other sources.

This program will be operated by the community itself without any financial support from the community and country. It is planned to sell the water with the minimum price, that will be much cheaper than market price. And the income will be used for the salary of local operator who will be trained during the commissioning periods. And the operation cost except labour cost is almost nothing because it will use the Photovoltaics as energy sources. Therefore, it will create new job for local community also.

If it is successful, it can be easily duplicable to another community or village with same structure to the similar informal settlement area where the public infrastructure can't serve with some of reasons such as national budget, topographical conditions. And also, if it is possible financially, it can be easily scaled-up to the normal public infrastructure scale which means to cover the whole area of the communities or cities.

D. Supporting documents submitted (OPTIONAL)

- ☒ Map indicating the location of the project/programme
- ☐ Diagram of the theory of change
- ☒ Economic and financial model with key assumptions and potential stressed scenarios
- ☒ Pre-feasibility study
- ☐ Evaluation report of previous project
- ☐ Results of environmental and social risk screening

Self-awareness check boxes

Are you aware that the full Funding Proposal and Annexes will require these documents? Yes ☒ No ☐

- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people if relevant
- Gender assessment and action plan
- Operations and maintenance plan if relevant
- Loan or grant operation manual as appropriate
- Co-financing commitment letters

Are you aware that a funding proposal from an accredited entity without a signed AMA will be reviewed but not sent to the Board for consideration? Yes ☒ No ☐