Closure and Data Collection Report for CTCN Technical Assistance

1. Basic information

Title of response plan	**The Development of Technology Road Maps at Subnational Level**
Country / countries	**South Africa**
NDE focal point and organization	**Mr. Cecil Masoka, Department of Science and Technology.**
Proponent focal point and organization	**Mr. Masupha Mathenjwa (iLembe District Municipality) and Mr. Ntokozo Ngubo (KwaZulu-Natal Provincial Department of Economic Development and Environmental Affairs)**
Sector(s) addressed	**Water and Energy**
Technologies supported	**Water (rainwater harvesting; reducing system leakages; irrigation efficiency and information systems)** **Energy efficiency (biodiesel, biogas, solar photovoltaic)**
Implementation period and total duration	**06 September 2017 – 17 September 2018**
Total budget for implementation	**TOTAL: 91777 USD** **UDP: 49 943 USD** **CSIR: 41 834 USD**
Designers of the response plan	**UNEP DTU partnership (UDP) and CSIR**
Implementers of response plan	**UNEP DTU partnership (UDP) and CSIR**

2. Summary of all activities, outputs and products that contribute to the expected impact of the technical assistance.

Description of delivered outputs and products as well as the activities undertaken to achieve them. In doing so, review the log frame of the original Response Plan and refer to it as appropriate.	Overview: This report represents a summary of outputs 1 – 6 as outlined in the response plan, through a partnership between UDP and the CSIR. One of the most significant contributions of this technical assistance under the CTCN was the cost-benefit analysis as well as identification of barriers for technology acceptance and diffusion, and of measures to overcome those barriers. • *Output 1*: **Technology prioritization workshops** for the water and energy sectors where hosted in Durban on the 24 and 25 April 2017, respectively. A Multi-Criteria Analysis was used to shortlist three technologies per selected sectors - Water sector (rainwater harvesting; reducing system leakages; and irrigation efficiency and information systems); Energy sector (solar photovoltaic; household biogas; and biodiesel). Prior to the workshops, technology factsheets were shared with invited stakeholders representing both sectors in KwaZulu-Natal. Although the response plan was a joint application between the iLembe District Municipality and the KwaZulu-Natal provincial government (through EDTA), the participants were in agreement that focus should be on the district municipality and the outcomes should be replicated throughout the province. • *Output 2:* **Preliminary barrier analysis** for each of the three technologies per sector was undertaken and shared with stakeholders as part of the background information prior to the technology prioritization workshop. Furthermore, one-on-one interactions with key stakeholders such as SALGA, SANEDI, TIKZN, EDTA as well as the iLembe District municipality officials unearthed more barriers encountered during the implementation of small scale projects related to the selected technologies. In addition to limited financial and human capital resources, theft and vandalism where brought forth as key barriers to the diffusion of technologies. The acceptance of technologies such as the use of household biogas was apparently linked to the affordability of households and their connectivity to the Eskom electricity grid. The information gathered was analyzed and used to inform the development of a relevant section subsequent Technology Road Maps, as described under output 2 of the response plan. Considering that the iLembe District Municipality is a designated Renewable Energy Hub for the province of KwaZulu-Natal, it was observed that in several local municipalities, ongoing activities such as solar street lighting and biogas projects using manure. It was further observed that there were more initiatives around energy efficiency measures considering that the iLembe District Municipality is the designated Renewable Energy Hub for the province of KwaZulu-Natal. • *Output 3:* Together with the former South African NDE (Dr. Henry Roman) and the proponents in KwaZulu-Natal, selected stakeholders were engaged, both during the provincial workshops, and thereafter on a one-on-one basis. Even stakeholders who were not present at the workshops were engaged, and lessons learned were packaged into the **Technology Road Maps**. More deserving local municipalities in the iLembe District were identified from the information provided by the officials and the analyses that were done under this technical assistance provided recommendations for the empowerment of those communities. • *Output 4:* Based on the identified needs in the iLembe District Municipality, the proponents of this technical assistance further

	narrowed down the number of technologies for the development of the Technology Road Maps (TRMs). For the water sector, reducing system leakages and rainwater harvesting were regarded as a priority; and for the energy sector, solar PV and household biogas were prioritized. This is despite sugarcane being the most commonly grown cash crop in the district for biodiesel production, and national government having identified desalination as a priority. The proximity of the district to the Indian Ocean may have been an advantage. However, it was pointed that costs and the complexity of the technologies had a huge impact on decision making. Products such as the TRMs developed through this technical assistance were shared with all stakeholders (participated/invited) for their furthermore inputs and improvements. • *Output 5:* Furthermore an **energy efficiency training workshop** was held at the uMfolozi TVET College. This was part of the district municipality's ambition to build a working relationship with the college towards the provision of human capital. The training also afforded the college to be the first to take the next step in acquiring further training by the NCPC-SA to offer a SAQA approved training course. • *Output 6.* Based on the request by the proponents, only **four project concept notes** were developed (i.e. on rainwater harvesting, reducing system leakages, solar PV and household biogas). However, similar information for irrigation efficiency and biodiesel was included in the Technology Roadmaps. According to the representative of the provincial government, a service provider has already been appointed following the development of the project concept notes, to implement and scale up the rainwater harvesting technology across the province. The technical assistance had provided financial figures, number of households, infrastructure etc. According to the proponents, this information was also shared with the local and provincial authorities as part of their annual budget allocation considerations. Further, the outputs of this technical assistance were of great interest to the development process of South Africa's Third National Communication.
Partners organizations	Department of Science and Technology (National Designated Entity - NDE), iLembe District Municipality, Economic Development, Tourism and Environmental Affairs Department (EDTA), South African Local Government Association (SALGA), Trade and Investment KwaZulu-Natal (TIKZN), and the South African National Energy Development Institute (SANEDI).
Beneficiaries	Local municipalities in the iLembe district and other selected districts in the province of KwaZulu-Natal. Students and staff from the uMfolozi Technical and Vocational Education and Training (TVET) college, as well as officials from the district municipality and Kwa-Zulu province also benefitted from the technical assistance.
Methodologies applied to produce outputs and products	Multi-criteria analysis, Cost-benefit analysis, semi-structured expert interviews, workshops, questionnaires.
Deviations	The CSIR was requested to organise and facilitate a training course on Energy Efficiency in KwaZulu-Natal, at uMfolozi TVET college. This task was originally planned to be undertaken by UDP, however along the process it was agreed that CSIR, with its local anchoring, would be well placed to implement the training. Students and academics from the college,

	as well as officials from the KZN provincial government and the iLembe district municipality, were in attendance. The course, including course material, was prepared and facilitated by NCPC-SA based at the CSIR. This afforded the district municipality to support the college in further training (by NCPC-SA) to be able to be the first to offer such as course accredited by the South African Qualifications Authority (SAQA). ~~in South Africa.~~
Achieved or anticipated gender benefits from the TA	This will be in line with the gender aspirations of the province of KwaZulu-Natal and the iLembe District Municipality in particular. As a result of this TA, it is anticipated that there will be less social and economic burden on women and children in the rural KwaZulu-Natal mainly associated with collection of water for cooking and firewood as an energy sources. The following is also anticipated: • Possibility of the economic improvement and livelihood diversification programmes in rural areas, which will benefit women as the more active contributors to rural economy and livelihood. • The new technologies associated with this TA will ensure that there is secure food, water and energy supplies available for all rural citizens. Thus assisting women to spend less time looking for water and collecting firewood in preparation for daily food. • Local communities, particularly women, empowered to design and implement water storage schemes as part of adaptation strategies and energy generating equipment such bio-digesters. • Small-scale and subsistence farmers mainly women supported in development of locally-specific water and energy efficient farming methods.
Achieved or anticipated co-benefits from the TA	Inclusion of Technologies identified by this TA in the iLembe District Municipality's Integrated Development Plan, and ensure implementation of such technologies by scaling up of energy efficiency projects, as the district is the Renewable Energy Hub of the province of KwaZulu-Natal and the development of water management programmes aiming at saving water. The energy efficiency projects / programme will include: • Low-cost housing incorporates thermally efficient and climate-resilient technologies. • Identification of Municipal building having potential energy efficiency. • Develop an awareness raising programme, including improved energy efficiency on Municipal own building • Solar water heater promotion and roll-out • Introduction of the energy efficiency in the Municipal Wastewater and Water Treatment Work The water management projects / programme will include: • Introduction of programmes responding to water leakages from public standpipes to main bulk • New and unused water resources utilised in areas of water stress. • Provincial and municipal initiatives to protect and enhance water supplies in urban and rural communities. • Water security and resource protection enhanced through upscaling utilization of catchment and water management practices. • Promoting reuse of grey water especially from Wastewater Treatment Plants • Develop programmes responding water-scarce areas, such as limiting use of clean water for lawns, car wash etc.

	• Dealing with untreated sewage flowing into rivers and dams A service provider has already been appointed to implement the water technologies across the province. Products of this TA will also inform the development of the South African Technology Needs Assessment.
Anticipated follow up activities and next steps	The outputs are expected to improve the implementation of the policies in the province of KwaZulu-Natal, and support a holistic implementation of both water and energy technologies. Specifically, it is expected that the outputs produced by the assistance, especially the roadmap and the concept notes, could be used as follows: - Inform budgetary and technological planning at provincial and municipality levels (to be presented at provincial and local council meetings) • At provincial level, project proposal already submitted, annual budget approval applicable as from April 2019 (new fiscal year) after the Executive budget votes are concluded. • At the District level, a budget for water management program has been set aside to deal with issues of water loses including dealing with water leaks, and river management. A budget has been set aside to deal with alien species along rivers. - Inform the refinement of the iLembe Integrated Development plan to develop water and energy efficiency programs to be implemented during the 2018/19 financial year - Support the roll out of the Regional Bulk Water Scheme programme of the municipality. There are plans to already scale-up rainwater harvesting and solar PV technologies for example, based on the analyses (including infrastructure, finance, barrier analysis, and human capital needed) during the implementation of the five year Integrated Development Plan. - To help develop the South Africa's Third National Communication. - Support the development of the Technology Needs Assessment reports and process carried at national level - Inform the "KwaZulu-Natal - Fund application for alternative water sources for households", under development by the province with the national department of Environmental Affairs. This project will involve developing a detailed funding proposal for alternative water sources for households in selected wards in the Province. As the Technology Roadmap adaptation part has indicated that alternative water supply options such as rainwater harvesting can increase adaptive capacity in communities by providing sources of water for irrigation and sanitation. - Inform the Climate Change Strategy that the iLembe District is currently finalizing and the outcome of this assistance will be included in the program to be implemented as the action plan for the achievement of the Strategy. - Recommendations of the roadmap implemented in the water and energy sectors - Recommendations piloted or replicated in other municipalities

	- Accelerated and improved implementation of the iLembe District Municipality's Integrated Development plan - Scaling up the energy efficiency projects as the district is the Renewable Energy Hub of the province of KwaZulu-Natal. - A service provider has already been appointed to implement the water technologies across the province. • Rooftop and courtyard Rainwater Harvesting • Flood water harvesting system. • Macro-catchment rainwater harvesting systems. • Micro-catchment rainwater harvesting system. - Other Climate Change Plans and strategies of the iLembe District and the Provincial Department of Environmental Affairs?? As a follow up to the TA, Ilembe district and EDTEA will continue pursuing the implementation of the road maps. At provincial level, a project proposal is already submitted, annual budget approval applicable as from April 2019 (new fiscal year) after the Executive budget votes are concluded. At the District level, a budget for water management program has been set aside to deal with issues of water loses including dealing with water leaks, and river management.

3. Lessons learnt

<u>Instruction</u>: Per lesson, indicate which stakeholders would benefit most from what you have learned. In formulating your lessons, see them as recommendations for those that will be put in a similar situation like yourselves in the future. What would they need to do (or not do) based on your learning? This will enable CTCN to incorporate your lessons in other technical assistances.

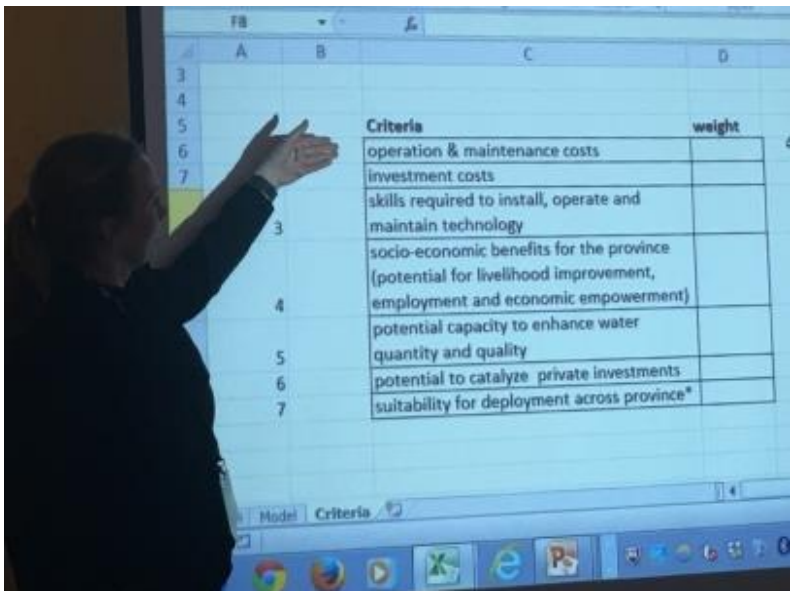
	Lessons learnt	**Recommendations**
Lessons learnt in the area of the TA *Instructions: Indicate essential factors contributing to successful implementation, as well as specific challenges. Recommendations include considerations on what would need to be in place for increasing success of similar efforts (i.e. regulatory, legal, stakeholders, communication, etc.)*	The collaboration between CSIR and UDP has been a great experience, which went beyond implementing the TA for KwaZulu-Natal, but building the CSIR's capacity as well. Cooperation from the proponents enabled interaction with several stakeholders active on the ground. Furthermore, this enabled identification of more areas in the iLembe District Municipality in need of the selected technologies. Nevertheless, coordination, communication and lack of provision of feedback from the office of the NDE and other stakeholders who were consulted such as SANEDI and SALGA and TIKZN during the implementation of the response	Improved communication between the office of the NDE and the proponents about what the CTCN can offer at the application stage. Improved coordination between national and provincial interventions in the climate change response space. Processes need to complement each other more to avoid duplication. For an example, the TA should be more aligned to TNA. Active stakeholders such as SANEDI, SALGA and TIKZN can benefit from the cost analysis done in this TA as well as barriers and measures to overcome those barriers.

	plan is seen as a potential challenge. To some extent, stakeholders in KwaZulu-Natal expected the CTCN's intervention as a means to provide more funds for implementing projects.	Lessons learned should be implemented and scaled up.
Lessons learnt related to climate technology transfer *Instructions: Indicate Opportunities, challenges and barriers for the use and deployment of the technology or technologies supported by the TA. The objective is to identify specific success factors for technology transfer. This information will feed the CTCN technology library and will contribute to increase learning on specific technologies*	Some of the selected technologies are implemented together and not in isolation. For example, street lighting uses solar panels in areas off the municipal electricity grid; rainwater harvesting with biogas technology and fertiliser production. It is therefore possible that the proponents will explore implementing technologies together as a means to curb costs and improve impact.	The products from this TA should be presented and discussed at the provincial and local council meetings to inform, amongst others, identified budgetary and technological requirements.
Lessons learnt related the CTCN process for TA	It is important that the CTCN is familiar with in-country's fiscal regulations to avoid delays and any misunderstanding down the implementation of the TA. For example, the National Treasury Regulations requires the CSIR to register parties to whom funds are being transferred to.	The office of the NDE needs to be more involved and visible in supporting the CTCN's in-country activities. The proponents and other stakeholders need clear communication from the NDE in terms of how CTCN funds are to be invested.

4. Illustration of the TA and photos

Workshop participants 24 April

Workshop participants 25 April



Technology prioritization

Ntokozo Ngubo (EDTA), Oscar Mokotedi (CSIR) and Masupha Mathenjwa (iLembe District Municipality)

5. Information for TA impact description (for public use)

<u>Instruction</u>: The information in the table below will be used by the CTCN to produce the CTCN TA Impact Description. The TA Impact description is a 2-page summary

document for communication purposes. Please copy information from sections above and technical delivery reports as required.

Item	Response
Challenge (approx. 500 characters with spaces)	While Climate change is a global problem influenced by an array of interrelated factors, climate change has serious impacts foreseen for communities in South Africa, including in the province of KwaZulu-Natal. Acknowledging the overall vulnerability of South Africa and the local vulnerabilities which vary between provinces, there is a need for conducting local level assessments of technology needs to overcome challenges of ensuring a climate resilient low carbon development path.
CTCN Assistance (2 to 4 bullet points. Approximately 450 characters with spaces)	The technical assistance includes: (1) technology identification and prioritization; (2) development of technology road maps; and (3) conduction of training course to increase capacity on energy efficiency and energy audits. It is expected that this technical assistance will have a significant impact on the capacity of the province of KwaZulu-Natal to pursue a climate resilient low carbon development path, through improved access to technologies for adaptation in the water sector and for improved energy efficiency in the energy sector.
Anticipated impact (2 to 4 bullet points. Approximately 250 characters with spaces).	This project implemented when the iLembe District and the Provincial Department of Environmental Affairs were in the process of finalizing their Climate Change Plans and Strategies. For instance, one of the resolutions, taken during the Climate Change Summit was the need to move towards a low carbon society using available technologies. This move needed an understanding of available technologies required for this movement. Therefore, this TA will assist the Municipality to achieve the desired direction. In addition, the iLembe District Climate Change Adaptation Strategy identifies the Water Sector as one sector where the District is vulnerable and identifies dealing with leaks as critical for the Municipality. The Technology Road Map also provide an opportunity for the Municipality and Department to further look for funding, as this Report can be used as the feasibility study and supporting document. Therefore, this work assisted the Municipality and the Provincial Department to develop meaningful projects responding to the impacts of climate change, including sourcing technologies that can be deployed by the Municipality in moving the society into a low carbon society, which aims to lead to the following: • Making vulnerable communities and sectors more resilient to water-related climate change impacts • Supplementary water supply from RWH in low-cost housing could help improve sanitation and health and household food security. • More sources of water available for the provision of portable water • Local demonstration of renewable energy technology, increased residential energy reliability, security, and cost certainty and reduced emissions from power plants. • Availability of energy sources for all citizens within the Municipality including rural community • Immense potential to both reducing greenhouse gas emissions, especially from biomass and save people money whilst increasing energy efficiency throughout the community.

As a minimum, please include one of the following: i) Quantity of greenhouse gas emissions reduced, avoided or sequestered; or ii) Number of people with increased capacity to adapt to the impacts of climate variability and change	i) Quantity of greenhouse gas emission reduced, avoided or sequestered: 4% Contributing to the overall 34% nationally targeted reduction by 2020 reduction by 2020 from 2010 base yearEDTEA together with District municipalities ii) Number of people with increased capacity to adapt to the impacts of climate variability and change: 657 612 people in iLembe district
Linkages and contribution to INDC (2 to 4 bullet points. Approximately 350 characters with spaces)	The adaptation component of South Africa's NDC addresses adaptation through six goals, underpinned by key elements of adaptation planning, costing of adaptation investment requirements, equity, and means of implementation. The water sector technologies reflect this objective in alignment with national objectives on NDCs. Based on one component of the South Africa's NDC - analysis of the incremental costs of mitigation actions indicates that significant finance and investment will be required in the long-term. It further highlights that these costs are derived from energy systems and economic modelling. As a result, further work is needed to prepare detailed business plans for finance and investment in mitigation. The road map on energy sector is responding to these aforementioned needs reflected by this component of the NDCs.
The narrative story (Approximately 1200 characters with spaces)	In order to address climate change vulnerabilities, the Department of Economic Development Tourism and Environmental Affairs (EDTEA) and the iLembe District Municipality in KwaZulu-Natal, have requested technical assistance from the Climate Technology Centre and Network (CTCN) to develop Technology Road Maps (TRMs) at subnational level. The proponents of this technical assistance have narrowed the focus on the iLembe District Municipality, with future objectives being to replicate the outcomes to other district municipalities within the province of KwaZulu-Natal. This work therefore developed local level technology roadmaps, which can be used by the province to facilitate the transfer of the climate related technologies required to deal with the impacts of climate change and also to contribute to the country's objectives on technological transfer. The CTCN assisted the province and district to develop baseline information on specific technologies in the energy and water sectors within the region as well as developing a strategy on how to transfer technologies into the District Municipalities, which is currently not available. This will assist the District Municipalities and its family of Local Municipalities, to reduce the emission of greenhouse gases whilst at the same time adapting to the impacts of change.
Contribution to SDGs (to the extent possible, please include contribution to +/- 3 SDGs), describing the contribution with a few sentence for each SDGs concerned).	**Goal 6: Ensure availability and sustainable management of water and sanitation for all** Water is identified as a strategic resource critical for social and economic development in South Africa. By dealing with water leaks as a Municipality we are ensuring sustainable use of natural resource such as water. **Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all.** Goal 7 seeks ways of implementing actions and programmes for Affordable and Clean Energy. This TA will assist in the implementation of solar panel and biogas technologies aiming to assist rural communities.

	Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation Infrastructure provides the basic physical systems and structures essential to the operation of a society or enterprise. Industrialization drives economic growth, creates, job opportunities and thereby reduces income poverty. Innovation advances the technological capabilities of industrial sectors and prompts the development of new skills. This assistance provide an opportunity for the Municipality to be innovative and develop new skills that lead to manufacturing of the new technologies required for the transition to a new low carbon economy. Other relevant goals are **11**, which is encouraging implementation of policies and plans focusing on Sustainable Cities and Communities and **Goal 13** requiring an urgent action to combat climate change and its impacts. It is anticipated that the competition for land, water and energy will intensify as the effects of climate change become apparent, potentially increasing the scarcity and pollution of water, and accelerating soil erosion and degradation. However, the NDP states that whilst climate change is a major threat, developments in science and technology will enable countries to mitigate the effects, without undermining growth and that by 2030, South Africa's transition to an environmentally sustainable, climate-change resilient, low-carbon economy and just society will be well under way.

Annex 1 (for internal use in donor and UN reporting)

A. Standardised CTCN performance indicators for donor and UN internal reporting

Instruction:

Please add quantitative values for indicators relevant to the particular TA in the list below. Non-relevant indicators should be left blank.

Please only fill in the table for activities and outputs conducted or produced directly by the CTCN assistance, and that are verified by the end of the assistance.

CTCN standardised performance indicators	**Quantitative value**	**Qualitative description** *List the various elements corresponding to the quantitative value*
1. Overview		
Number of active person-days (not full duration) of assistance provided to counterparts or stakeholders by international experts and consultants	**80**	**active person-days, UDP**
Number of active person-days (not full duration) of assistance provided to counterparts or stakeholders by national experts and consultants	**100**	**active person-days, CSIR**
Number of for external communication and outreach activities conducted to showcase the assistance (news release, newsletters, articles on website, etc.)	**2**	**news pieces on UDP home page, tweets**
2. Events (other than trainings) held as part of the assistance		
Number of international and multi-country (at regional or sub-regional level) technology and knowledge sharing events	**-**	
Number of participants in the events above	**-**	
Number of national technology and knowledge sharing events	**1**	**workshop**
Number of participants in the events above	**16**	**people**
Number of public-private events related to technologies	**-**	
Number of participants in the events above	**-**	
3. Training and capacity building activities conducted during the assistance		
Number of training sessions and capacity strengthening activities	**2**	EnMS end user workshop
Number of people who received the training	**32**	
Number of men	**18**	
Number of women	**14**	
Total number of organizations trained	**4**	iLembe DM, EDTA, Umfolozi TVET college, CSIR
Number of research organizations, laboratories and universities	**3**	Technical units from the proponents and uMFolozi TVET college
Number of private companies	**0**	
Number of cities and local government	**2**	
Number of communities	**3**	Students and officials from iLembe and the KZN provincial government.

Number of ministries	**1**	
Number of specialized governmental institutions	**2**	
Number of non-profit organizations	**0**	
Level of satisfaction of participants after the training (from training feedback form). *From very satisfied, satisfied, not really satisfied, not satisfied at all2*	**1**	Very satisfied. This was a new training workshop to the college and it went beyond their expectations.
Percentage of participants that increased their capacities thanks to the training (from training feedback form) *From significantly, very, moderately, to none*	**100%**	Significantly
Percentage of men	**62**	5 environmental officers from the provincial government and iLembe district municipality benefitted from the training There were also male students who were part of the workshop who benefitted from the TA
Percentage of women	**38**	3 female lectures benefited from the work. There were also female students who were part of the workshop who benefitted from the TA
4. Tools, technical reports and information material supported by the assistance		
Total number of tools, technical reports and information material supported by the assistance (excluding mission, progress and internal reports)		
Number of tools strengthened, revised or developed	**1**	**Multi Criteria Analysis tool for the prioritization of technologies**
Number of technical reports strengthened, revised or created	**5**	**1 main report, 4 project concept notes**
Number of other information materials strengthened, revised or created	**1**	**Training report**
5. Policies, laws and regulations supported by the assistance		
Number of policies, strategies, and plans drafted addressing climate change adaptation	**1**	Technology road maps
Number of policies, strategies, and plans drafted addressing climate change mitigation	1	Technology road maps
Number of documents developed to inform other policies, strategies, and plans on climate change adaptation (sectoral strategies, national development plans, etc.)	1	2 project concept notes for water sector
Number of documents developed to inform other policies, strategies, and plans on climate change mitigation (sectoral strategies, national development plans, etc.)	1	2 project concept notes for energy sector
Number of laws, agreements, or regulations drafted addressing climate change adaptation	-	
Number of laws, agreements, or regulations drafted addressing climate change mitigation	-	
Number of documents developed to inform laws, agreements, or regulations on climate change adaptation	-	

Number of documents developed to inform laws, agreements, or regulations on climate change mitigation	-	
6. Institutional strengthening supported by the assistance		
Number of institutional arrangements in place to coordinate near and long-term national adaptation plans (NAPs)	-	
Number of organizations with increased technical capacity to advance near and long term national adaptation plans (NAPs) which integrate EbA	-	
Number of organizations with increase awareness and knowledge among countries to better own and drive national adaptation planning processes	3	Water Research Commission, Provincial Department of Economic Development Tourism and Environmental Affairs (EDTA), iLembe District Municipality
7. Partnerships and cooperation		
Number of private companies directly engaged in the assistance (that partnered with the proponent, the beneficiaries or the CTCN to implement the assistance)	-	
Number of South-South collaboration enabled during or through the assistance, when stakeholders from other countries were involved in the assistance	-	
Number of North-South collaboration enabled during or through the assistance, when stakeholders from other countries were involved in the assistance	-	
Number of Triangular collaboration enabled during or through the assistance, when stakeholders from other countries were involved in the assistance	-	

B. Indicators of anticipated impacts that may occur after the TA is completed

CTCN standardised performance indicators	**Quantit-ative value** *Insert the request value and unit*	**Content** *List the elements included in the number provided*	**Expected timeline** *Indicate when the indicator and value are expected to be achieved*	**Responsible institution** *Indicate the institution(s) that will play leading role in enabling the indicators and anticipated values to be achieved*
1. Anticipated finance mobilised				
a) Anticipated amount of public/donor investment mobilized (in USD) from the beneficiary country for climate change activities as a result of the TA	1,459,618	training, technical assessments, technology equipment	6 months to 4 years	iLembe municipality; NGOs; Local industrial associations; Industrial training institute;

				Local technical university;
b) Anticipated amount of public/donor investment mobilized (in USD) from international and regional sources for climate change activities as a result of the TA	1,459,618	training, technical assessments, technology equipment	6 months to 4 years	iLembe municipality; NGOs; Local industrial associations; Industrial training institute; Local technical university;
c) Anticipated amount of private investment mobilized (in USD) from the beneficiary country for climate change activities as a result of the TA.	1,459,618	technology investments	6 months to 4 years	iLembe municipality; NGOs; Local industrial associations; Industrial training institute; Local technical university;
d) Anticipated amount of private investment mobilized (in USD) from international and regional sources for climate change activities as a result of the TA.	n/a			
2. Policies				
a) Anticipated number of policies, strategies, plans, addressing climate change mitigation officially proposed, adopted, or implemented as a result of the TA.	4	KZN Green Building Policy Planning and Development Norms and Standards for Climate Change in KZN Climate Change Response Strategy Climate change implementation plan for the District	2019 2019 2018 2019	KZN Public Works KZN Cogta
Anticipated number of policies, strategies, plans, addressing climate change adaptation officially proposed, adopted, or	n/a			

implemented as a result of the TA.				
b) Anticipated number of laws, agreements, or regulations addressing climate change mitigation officially proposed, adopted, or implemented as a result of the TA.	n/a			
Anticipated number of laws, agreements, or regulations addressing climate change adaptation officially proposed, adopted, or implemented as a result of the TA.	n/a			
c) Anticipated laws, policies, regulations, strategies and plans where climate change mitigation will be mainstreamed as a result of the TA	n/a			
Anticipated laws, policies, regulations, strategies and plans where climate change adaptation will be mainstreamed as a result of the TA	n/a			
18. Anticipated number of public-private partnerships created	n/a			
19. Anticipated twinning arrangements created as a result of the TA	n/a			
20. Anticipated number of technology projects prepared and implemented to support action on low emission and climate-resilient development	4			
21. Anticipated strengthened National Systems of Innovation and technology innovation centres in CTCN recipient country.	n/a			
22. Anticipated Clean Energy Generation Capacity Clean supported by the TA that has achieved financial closure	n/a			
23. Anticipated and projected GHG reductions Quantity of greenhouse gas (GHG) emissions, measured in metric tons of CO2e, anticipated to be reduced or sequestered as a result of projects supported by the TA.	4%	Contributing to the overall 34% nationally targeted reduction by 2020	reduction by 2020 from 2010 base year	EDTEA together with District municipalities

24. Clean Energy Generation Capacity Clean energy generation capacity supported by the TA that has achieved financial closure.	n/a			
24. Anticipated and projected GHG reductions to 2030 Projected greenhouse gas emissions reduced or avoided through 2030, in metric tons of CO2e, from adopted laws, policies, regulations, or technologies related to clean energy/sustainable landscapes as a result of the TA.	n/a			
25. Anticipated co-benefits Number of people receiving livelihood co-benefits as a result of the TA.	657 612 people	population in iLembe district		
26. Anticipated technology types effectively deployed in the country	6	Water (rainwater harvesting; reducing system leakages; irrigation efficiency and information systems) Energy efficiency (biodiesel, biogas, solar photovoltaic		
27. Anticipated UNFCCC processes implemented as a result of the TA (NAMA, NAPA, NDC, etc.)	n/a			
28. Anticipated Technology Needs Assessments (TNA) and technology Action Plans (TAP) as a result of the TA		local level TNAs and TAPs for energy and water sectors in the iLembe municipality, 3 technologies for each sector	completed	iLembe District Municipality, Economic Development, Tourism and Environmental Affairs Department (EDTA) in KZN
29. Anticipated cooperative research, development and demonstration programmes within and between developed and developing country Parties facilitated as a result of the TA	n/a			
30. Anticipated improved climate change observation systems and related information management in developing country Parties.	n/a			