giz

Low Carbon and Climate Resilient Water and Wastewater Management

(LCCR Water)

Questionnaire

for a

Rapid Appraisal

of

Water and Wastewater Services, Climate Readiness and Financial Management in selected secondary municipalities

2023

INTRODUCTION

This questionnaire defines the minimum information to be collected from municipalities for the purpose of this rapid appraisal. The consultant is encouraged to extend this questionnaire where he deems appropriate for either individual municipalities to capture unique and relevant features, or for all municipalities where it is felt that this questionnaire does not allow to create a sufficiently comprehensive picture.

The purpose of this data and information collection is to provide a basis for the final selection of those two municipalities, for which:

- The objectives and indicators of LCCR are best aligned with the objectives, plans, measures and needs of the respective municipality
- The prospects of LCCR being able to meet its objectives are positive due to supportive framework conditions in the respective municipality

Furthermore, the information collected should support LCCR in designing support measures for the selected municipalities, considering the resources available.

The questions should be answered with a "reasonable" level of detail, keeping in mind that the reports prepared per municipality should not exceed 50 pages each (excluding schematics, photos, maps etc. which can be attached as annexes). In practice, where the answers are not purely quantitative or where the answer is not simply "yes" or "no", the consultant should provide a brief qualitative answer comprising the most relevant information, ideally with not more than 5 sentences. The latter does not apply to the sub-sections "Actions undertaken or planned by municipality" "3-5 most critical observations" or "3-5 recommendations for priority actions".

The consultant is encouraged to collect and submit additional information that might be made available by the municipalities, e.g. existing reports, as an annex to the main report.

The Rapid Appraisal questionnaire comprises the following sections:

1. General
2. Climate Change Risks and Vulnerabilities
3. Vulnerable population
4. Non-Revenue Water
5. Wastewater management – energy efficiency and climate resilience
6. Financial Management and Accounting
7. External Assistance
8. Information Technology

At the end of sections 2 to 8, the contractor is required to line out what they

- perceive as the 3 to 5 observations or findings most critical for the assessment, particularly regarding successful implementation of the LCCR project.
- consider as 3-5 (5-10 under Financial Management and Accounting) priority actions that should be undertaken by the municipality with or without LCCR support to improve performance in the respective area

These parts are critical, as they will provide guidance to the LCCR team on feasibility and potential synergies of support that could be considered in the selection process. It also is a reflection of the fact

that at this point in time the contractor will have gained much deeper insight into the processes, performance and capacities of each municipality than the LCCR team.

Text in *blue and italic* indicates that the respective information should also be included in the **summary table**. Where numbers over a of several years are requested, only the number for the latest financial year should be included in the summary table. Where responses in the questionnaire are (partly) qualitative, the contractor is requested to use its own judgement on how this information would best be presented in the table by (e.g. by provided a percentage or by using descriptions like “yes”, “partly”, “no” and “unknown”.) The format of the table shall be discussed and agreed upon with GIZ at the start of the assignment.

1 General

1.1 General technical and operational information

1. *Population within municipality/WSP service area*
2. *Population served with water*
3. *Population lacking access to water services*
4. *Population served with sewerage services*
5. *Population served with other sanitation services*
6. *Population lacking access to sewerage or non-sewered sanitation services*
7. *Percentage of population receiving free water*
8. *Volume of free water provided per indigent household per month*
9. *Percentage of metered connections per customer category, incl. type of meter (manual reading, data logger, remote sensing, pre-paid)*
10. *No. of sewer connections by category*
11. *Volume of wastewater treated during previous financial year and trend over 5 years*
12. *No. of staff in the water and sanitation department*
13. *No. and type of vacancies in the water and sanitation department*
14. *Does the municipality have an adequate asset maintenance plan and is it being implemented?*
15. Describe the general conditions of work sites and access roads and provide photos (based on a sample)
16. How does load shedding affect water service provision (currently and projected)?
17. How does load shedding affect wastewater transport and treatment (currently and projected)?
18. Does the municipality have a plan to minimize the effects of load shedding to its operation and its customers?
19. Does the municipality have the resources to implement the necessary measures to minimize the effects of load shedding?
20. How did COVID-19 affect the technical operation of water and wastewater services and did this lead to permanent adjustments in the operation?
21. To what extent is the provision of water and wastewater services hampered by vandalism and how does the municipality address vandalism?

1.2 General organization and finance

1. Please provide overview of municipal organizational structure
2. Are the water and sanitation departments responsible for their own financial and administrative functions? If not, which departments provide support to the financial management and administrative functions of the water and sanitation departments in the municipality?
3. What are the organizational structures and staffing levels of the financial and administrative functions and how many are dedicated to water supply and sanitation services?
4. What is the number and level of vacancies in the financial and administrative departments, and if there are vacancies, how does this impact the section dealing with water supply and sanitation financial and administrative services?

5. To what extent did COVID-19 affect the financial or commercial situation of the municipality and the water and wastewater service provision in particular? Has this resulted in permanent changes affecting water and sanitation service provision?
6. *Does the municipality have a Capital Expenditure Plan/Framework suitable to receive funding from National Treasury or the Integrated Urban Development Grant?*
7. *Does the municipality have an up-to-date asset register?*
8. *Does the municipality have adequate asset management policies and procedures?*
9. *No. of water connections by category (e.g. domestic, stand posts, commercial, institutional) and trend over previous 5 years*
10. *Volume of water billed during previous financial year and trend over 5 years (per customer category as well as total)*
11. *Volume of unbilled authorized consumption?* Please specify the components considered under this category and their (estimated) share.
12. *Average water consumption in litres / capita / day.*

2 Climate Change Risks and Vulnerabilities

Assessment status quo

1. *Does the municipality have a climate risk and vulnerability assessment (RVA) with focus on water resources, water services and wastewater as well as non-sewered sanitation services?*
2. If a RVA has been conducted, what are the main climate change impacts related to water resources and water and sanitation services (e.g. increased risk of flooding, drought, sea level rise)?
3. *Do early warning systems or procedures exist and are they adequate?*
4. *Does the municipality have a flood map of sufficient quality?*
5. Did the municipality experience floods or droughts during the last 10 years?
6. If floods occurred, what damages to water and sanitation infrastructure or interruptions of supply did they cause and, if any, what measures did the municipality undertake to reduce the risk of similar impacts of future flood events?
7. If floods occurred, were they caused by overflowing rivers, drainage systems or both?
8. *Did frequency or magnitude of floods increase, compared to the last 50 years on average?*
9. *Do response plans to climate related disasters, e.g. flooding or drought exist? If so, have they proven effective?*
10. *Does the municipality have an up-to-date water safety plan and does it adequately cover aspects of climate resilience? (if so, please provide copy)*
11. *Did the municipality carry out any climate proofing or similar processes for their water and sanitation infrastructure? (if so, please provide copy)*
12. Are there cross-departmental procedures or fora to plan for and to respond to disasters? What is their composition, how do they operate, who chairs them and who do they report to?
13. Does the municipality have a climate change strategy or policy and, if they have, how is it mainstreamed into planning and operations?
14. Which departments in the municipality have formal responsibility in climate change mitigation and adaptation and is there a lead department?

15. *Is there a formal forum to coordinate efforts on climate change mitigation or adaptation across departments?*
16. Is there a functioning forum to coordinate efforts on climate change mitigation or adaptation with external stakeholders?
17. *Has staff in the water and sanitation department been trained on water related climate risks and vulnerabilities?*
18. Does the municipality have knowledge of and experience with green infrastructure or hybrid infrastructure for flood prevention, drought mitigation or wastewater treatment?
    If applicable, please provide short description of existing infrastructure, including schematics, maps, photos and operational status.
19. Is the municipality member of any international climate related city network, e.g. Global Covenant of Mayors, ICLEI?

Actions undertaken or planned by municipality

20. What actions have been planned by the municipality to mitigate or adapt to the effects of climate change, particularly on water and wastewater services or flood prevention, e.g. in the IDP, have these actions been costed and budgeted for?
21. Does the municipality get or foresee any support in this regard from National Government or international development partners?

Describe the 3-5 most critical observations from or beyond the above

Describe 3-5 recommendations for priority actions to be taken by the municipality or for support from LCCR

3 Vulnerable population

1. *How many informal settlements exist within the municipal boundaries?*
2. *How many people live in informal settlements?*
3. *Percentage of population considered poor or vulnerable (incl. definition of vulnerability)*
4. *How fast is the population in informal settlements growing? (average annual percentage over 3 years)*
5. What is the status of water supply and sanitation services provided in informal settlements?
6. *Is there a significant degree of "backyarding"* and if so, what are the main impacts regarding service provision, environmental pollution or other aspects potentially relevant to LCCR?
7. Are any informal settlements or low-income areas known to experience particularly high climate change or non-climate-change related risks, e.g. of flooding (e.g. previous flood events or located within specific flood lines) or service interruptions (e.g. due to droughts or load shedding)?
8. *Does the municipality have strategies and procedures in place focussing on service provision in informal settlements and areas impacted by "backyarding"?*

Actions undertaken or planned by municipality

13. What actions have been planned by the municipality to improve service provision or to improve resilience in informal settlements or other residential areas of particularly vulnerable population, e.g. in the IDP, and have these actions been costed and budgeted for?

14. Does the municipality get or foresee any support in this regard from National Government or international development partners?

Describe the 3-5 most critical observations from or beyond the above

Describe 3-5 recommendations for priority actions to be taken by the municipality or for support from LCCR

4 Non-Revenue Water (NRW)

Assessment status quo

Water balance

1. *What is the (estimated) level of NRW (in %)?*
   Please provide a critical review of the water balance submitted to DWS
2. *What are the estimated percentages of commercial/apparent vs. technical losses* and do those estimates seems realistic? (the contractor is not required to conduct measurements but to inquire, how the estimates where derived at and if they seem plausible)
3. How has NRW developed over the last at least 5 years?

Systems and procedures

4. Is there a dedicated unit for water loss reduction in the municipal department?
5. What measures have been implemented to reduce NRW during the last 5 years and what was their impact?
6. *Have zonal meters been installed and is NRW calculated at zonal level?*
7. *Is there a leakage register that tracks leakages and pipe bursts per network zone?*
8. *Does the municipality own and regularly use leak detection equipment?*
9. *Have measures for network pressure management been implemented?*
10. *Is there adequate stock of meters, valves, fittings etc. held in storage?*
11. To what level are meters installed, maintained and regularly calibrated at all relevant points in the distribution network, including bulk and customer meters?
12. Is there a policy on replacement of meters, e.g. after an estimated lifespan?
13. How often are meters read?
14. How are meter readings reported and processed? (e.g. manual, data loggers, remote sensing)
15. Are there customers, and if so, how many, whose meters are not being read on regular basis, e.g. because their meter cannot be accessed?
16. No. of meter readers?
17. Do meter readers assume other tasks in addition to meter reading?
18. Are any procedures in place to avoid that meter readings are compromised (e.g. rotation of meter readers, plausibility checks and other data quality checks carried out routinely for meter readings)?

19. *What is the share of the overall water volume sold to the 10 largest water consumers in the municipality and are their meters regularly calibrated or replaced?*
20. Is there an easy way for members of the public to report visible leakages (e.g. via advertised SMS or WhatsApp numbers on the water bills etc.) and are residents regularly making use of it?
21. What is the average response time to repair major leakages and is there a procedure to monitor and follow up on the response?
22. *Has staff in the water department been trained on NRW and demand management?*

Actions undertaken or planned by municipality

23. Is reduction of NRW included in the IDP, are specific measures planned for, costed and budgeted?
24. Does the municipality get or foresee any support in this regard from National Govt. or international development partners?

Describe the 3-5 most critical observations from or beyond the above

Describe 3-5 priority recommendations for actions to be taken by the municipality or for support from LCCR

5 Wastewater management – energy efficiency and climate resilience

Services and compliance

1. What type of wastewater treatment plants (WWTP) exist and what is their operational status?
2. *Percentage of effluent compliance?*
3. By whom (municipality, private sector, both) are septic tanks or latrines emptied?
4. How much do users pay for the emptying of septic tanks or latrines?
5. Where is sludge from septic tanks and latrines deposited and treated?
6. Is there a problem of illegal dumping of faecal sludge?

Energy efficiency

7. *What is the current electricity consumption per m^3 of wastewater treated?*
8. *Have energy audits been conducted for water or wastewater services?* If so, please provide copies and describe the extent to which recommendations of energy audits have been implemented?
9. *Are biggest electricity consumers, e.g. aerators and pumps of adequate size for the wastewater treated (based on information available and interviews with technical staff)*
10. *Are pumps and aerators equipped with soft starters, variable speed drives or other devices to save electricity or to reduce electricity costs?*
11. How is wastewater treatment affected by load shedding?
12. How many sewerage pumping stations does the municipality operate? Please describe their operational status, the adequacy of existing sewage pumps, availability of spare parts, risks related to load shedding.

13. *Do adequate assets registers and maintenance schedules exist for the wastewater infrastructure?*
14. *Are electricity meters installed to monitor and optimize energy consumption of specific operational units?*
15. Is the plant undertaking any peak load shifting?
16. *Has WWTP staff been trained on process operation and monitoring?*
17. *Has WWTP staff been trained on energy efficiency?*
18. Is the overall skills level of staff at WWTPs adequate?

Actions undertaken or planned by municipality

19. Are energy efficiency measures for wastewater treatment planned for by the municipality, e.g. in the IDP, have these measures been costed and budgeted for?
20. Does the municipality get or foresee any support in this regard from National Govt. or international development partners?

Describe the 3-5 most critical observations from or beyond the above

Describe 3-5 priority recommendations for actions to be taken by the municipality or for support from LCCR

6 Financial Management and Accounting

Budgeting

1. Does the municipality have an updated revenue policy?
2. Does the revenue policy cater for water and sanitation?
3. How are the tariffs for water and sanitation determined within the municipality?
4. Does the municipality have revenue improvement measures in place and if so, what are these?
5. What are the budgeting and budgetary control procedures and what method is used for budgeting e.g. zero based, historical or cash budgeting?
6. Does the budget for the current or next financial year include provisions for operation and maintenance costs of water and sewerage services and was it approved by the municipal council? Please provide relevant copies.
7. Is there a written investment policy and procedure?

Income

1. *Has a customer survey for water and wastewater services for the entire service area of the municipality been carried out and when?*
2. Is there an estimate of the number of households in planned areas who are not registered customers of the water service provider or other measures to estimate the prevalence of illegal connections?
3. How does the municipality bill customers for water and sanitation services?
4. How are bills printed and does the system handle both metered and fixed rate customers for water and sewerage?

5. How is the billing system organized from data entry, distribution of bills, payments and, where applicable, the disconnection process for non-payment of bills?
6. How does the municipality collect payments for water and sanitation services?
7. What happens when people default on payment? (pls. provide overview on customer care / disconnection policy)
8. *How many connections are currently disconnected due to non-payment?*
9. Has the municipality undertaken any measures to improve collection/reduce customer arrears in recent years and were they successful?
10. What are the various water and sanitation related income streams (including grants and subsidies if any) and what percentage does this contribute to overall municipal income?
11. Are the revenue, and/or grants ringfenced for water and sanitation?
12. Is there a separate account for water and/or sewerage services?
13. What is the tariff structure for water supply and sanitation services and are there any cross subsidies between different categories of consumers, or between services?
14. *What was the average tariff per m³ billed during the last financial year?*
15. *What was the annual total amount billed during the previous 5 financial years?*
16. *What was the annual total amount collected during the previous 5 financial years?*
17. *What was the annual average collection efficiency during the previous 5 financial years?*
18. *What is the level of accounts receivable and what is the impact on the liquidity of the WSP?*
19. What financial assistance is received from central government and how is this amount arrived at?
20. What is the cost to the consumer for new water supply or sewerage connections in the different categories?

Expenditure

1. *How much were the (estimated) operation and maintenance cost per m³ of water distributed during the previous financial year?*
2. What are the percentages of total expenditure for salaries, electricity, chemicals, other running costs, repairs and capital investment for water supply and sanitation?
3. Is there a dedicated capital expenditure account?
4. *If applicable,*
    - what is the cost per unit (m3) of bulk water purchased?
    - what was the annual volume of bulk water purchases during the last 5 years?
    - are *the municipality's payments for bulk water* up to date (or *is the account in arrears and if so, by how much)?*
5. What mechanisms are in place to monitor operations and maintenance expenditure?
6. Are the income and expenditure statements available for the previous financial year? If so, please attach copies.
7. Is the SDBIP approved by council?

Accounting Policies and Procedures

1. Are expenditure costs related to the provision of water supply and sewerage allocated to separate cost centres in the accounts?
2. Are monthly management accounts and annual audited accounts produced?

3. What are the short- and long-term debts related to water and wastewater services and what are the interest payments on borrowing?
4. What are the cash flow management policy and procedures?
5. What are the working capital requirements for water and sanitation for 2024 and is funding available?

Procurement

1. What are the current procurement policies and procedures for works, spares, supplies and services?
2. What procurement systems are applied, centralised tenders or decentralised?
3. Are these procurement policies and procedures clearly defined?
4. How much was spent on procurement for water and sanitation related services during the previous financial year?
5. What are the key challenges related to procurement?

Inventory Management

1. Is there a documented inventory management policy and procedure?
2. Which inventory management system is used to manage stocks in the stores and is it adequate?
3. How often are stock takes done and how are variances handled?

Describe the 5-10 most critical observations from or beyond the above

Describe 5-10 priority recommendations for actions to be taken by the municipality or for support from LCCR

7 EXTERNAL ASSISTANCE

1. *Does the municipality receive or expect to receive technical or financial assistance on improving water and wastewater services, infrastructure development, NRW-reduction, energy efficiency or other topics related to LCCR Water's objectives from National Government, other South African Institutions or international partners?* If so, please provide details.
2. *Did the municipality receive technical or financial assistance from international partners on improving water and wastewater services, for infrastructure development, NRW-reduction, energy efficiency or other topics related to LCCR Water's objectives from international partners during the last 5 years?* If so, please provide details.
3. *Did the municipality during the last 5 years apply for funding from local or international climate finance facilities (e.g. DBSA Climate Finance Facility, Green Climate Fund)?*

8 Information Technology

Finance and customer management

1. What software is used for accounting and billing for water supply and sanitation services and does it meet the needs of the department? If not, please specify the main challenges.
2. Are protocols in place to prevent manipulation of the customer database and billing system?
3. Does the database and billing software entail secure audit-trail features (automatic reports)?
4. Is the software linked to other departments/services of the municipality?
5. What is the feasibility and ease of user customization?
6. How is the after-sales support and conditions, cost for the software user (if any); maintenance contract, updates, etc?

GIS

7. Does the municipality operate a GIS system (and if so, which software) containing the water distribution and sewerage system up to the level of customer connections and is the system linked to the customer management, billing and accounting systems and to cadastral parcels?
8. If existing, is the GIS system linked with GIS systems in other departments?

other

9. What other key software programmes are in use in the WSP and the Service Units, do they meet the needs of the municipality and are they properly licensed?
10. What control measures are in place to protect the software from virus infections or cyber threats?
11. How frequent are back-ups done for the various departments and where are they stored?
12. Is there a disaster recovery plan in place?
13. Does the department have adequate IT infrastructure required for its services?
14. What is the policy on useful lives of computer equipment?

3-5 most critical observations from or beyond the above

3-5 priority recommendations for actions to be taken by the municipality or for support from LCCR