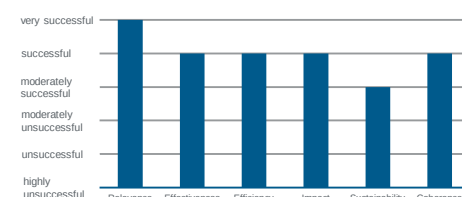


Ex-post evaluation

Infrastructure rehabilitation - Batumi (Phase IV), Georgia

Title	Open programme Rehabilitation of infrastructure - Batumi (Phase IV)		
Sector and CRS code	1402000 Water, sanitation and wastewater management		
Project number	2013 66 335 und 2013 70 162 (AM)		
Commissioned by	BMZ		
Recipient/Programme executing agency	Recipient/borrower: Republic of Georgia, project executing agency: City of Batumi		
Project volume/ Financing instrument	Subsidised loan of EUR 30 million (investment component) Grant of EUR 2 million (complementary measure)		
Project duration	12/2015 – 12/2021		
Year of report	2024	Year of random sample	2024

Overall rating:
successful



Objectives and project outline

The aim was to contribute to sustainable urban development and improve living conditions in Batumi (impact) by providing the population with a needs-based supply of hygienic drinking water and environmentally friendly wastewater disposal (outcome). The project comprised the rehabilitation and new construction of water supply and wastewater disposal systems for parts of the urban area and the creation of additional drinking water infrastructure in neighbouring villages. A complementary measure was implemented to strengthen the institutions and provide personnel support to the municipal administration and operators.

Key findings

The programme has achieved developmental effectiveness and is rated as successful overall:

- The high relevance of the project is primarily due to the unexpectedly sharp rise in the city's population (Ukraine war). In addition, Batumi has undergone rapid urban development in recent years, particularly in the tourism sector, with corresponding demands on the water and wastewater infrastructure.
- The urban area and the neighbouring villages in the project area are supplied with a stable (24-hour) and sufficient amount of drinking water, and the wastewater is treated appropriately in the existing sewage treatment plant. The accompanying measures throughout the various phases have contributed significantly to the development and professionalisation of the operator (effectiveness).
- The high staff turnover on the part of the executing agency - particularly at management level - limits the sustainability of the effects
- The planning of urban development activities and the planning of municipal supply infrastructure are not sufficiently coordinated within the city administration. This leads to inadequate planning for the water and wastewater infrastructure, which has a negative impact on the quality of service (e.g. due to selective overloading of the supply network) for the end customer (efficiency, sustainability).

Conclusions

- Although the support of projects by external consultants over a long period of time can improve implementation and operation, there is a risk that the relevant experience and capacities are not sufficiently internalised by the project executing agency (countermeasures identified in later phases).
- In addition to the absolute connection figures, analysing the connection rate as an indicator is helpful for tracking the penetration of the supply effect.
- Where possible, efforts should be made to involve the utility companies in urban planning.

Ex-post evaluation - assessment according to OECD DAC criteria

Overview of the rating per criterion:

Relevance	1
Coherence	2
Effectiveness	2
Efficiency	2
Overarching developmental impact	2
Sustainability	3
Overall rating:	2

General conditions and classification of the project

The "Municipal Infrastructure Rehabilitation Programme" comprises the rehabilitation and partial new construction of the water supply and wastewater disposal facilities in the city of Batumi on the Black Sea coast in Georgia. It consists of five consecutive programme phases and a supplementary project component for improved rainwater management. The fifth phase is currently being implemented. The original design envisaged that up to 208,000 inhabitants would be continuously supplied with hygienically safe drinking water in line with their needs. At the same time, the wastewater will be drained and purified through the renovation and expansion of the sewerage system and the operation of a wastewater treatment plant. The financing volume of programme phases I-V amounts to around EUR 190 million. Phases I, II, IV and V were/are each flanked by a complementary measure (CM) worth EUR 1.6 million, EUR 2.2 million, EUR 2.0 million and EUR 1 million respectively. This report deals with the ex-post evaluation (EPE) of the fourth programme phase including the CM.

Brief description of the project

The FC module objective of the measures to improve the water supply and wastewater disposal systems is to provide the population with a continuous and needs-based supply of hygienically safe drinking water and to ensure the environmentally sound and hygienically safe disposal and treatment of wastewater for the urban population of Batumi and the inhabitants of the neighbouring coastal towns. This is intended to contribute to sustainable and environmentally friendly municipal development and to improve the sanitation and living conditions of the population of the city of Batumi (impact objective). The target group is the inhabitants of the city of Batumi, originally in the old administrative boundary, but which was extended to include the Chakvi villages and the southern villages during the project implementation of the third phase. The project implementing agency is the city administration of Batumi. The systems are operated by the municipal utility company Batumi Tskali (BTS)

The first two phases of the programme had already been completed before the start of the fourth programme phase. During the design and tendering phase of the third programme phase, further rehabilitation needs were identified, particularly due to the expansion of the city's administrative area in the meantime. At the request of the Georgian side, the comprehensive rehabilitation and new construction of water supply and, in particular, wastewater disposal systems for additional supply zones in the outer residential districts of the core city and the connection of additional residents from the villages of Chakvi, Greencape and Makhinjauri, which have since been incorporated into the city of Batumi, were therefore planned as part of a fourth programme phase. The villages of Gonio, Akhalisopeli and Kvartati, which have also been incorporated into the city, were connected to a regulated water supply system as part of the fourth phase of the programme.

For the fourth programme phase and to achieve an approx. 80% connection rate of the population within the new city limits to the drinking water supply - as well as hygienically safe wastewater discharge and treatment in the already constructed sewage treatment plant - the investment requirement including consulting services was

estimated at EUR 30 million. This was covered by a subsidised DC loan. In addition, a needs-based, supportive CM totalling EUR 2 million was provided for institutional strengthening and personnel support for the municipal administration and operator.

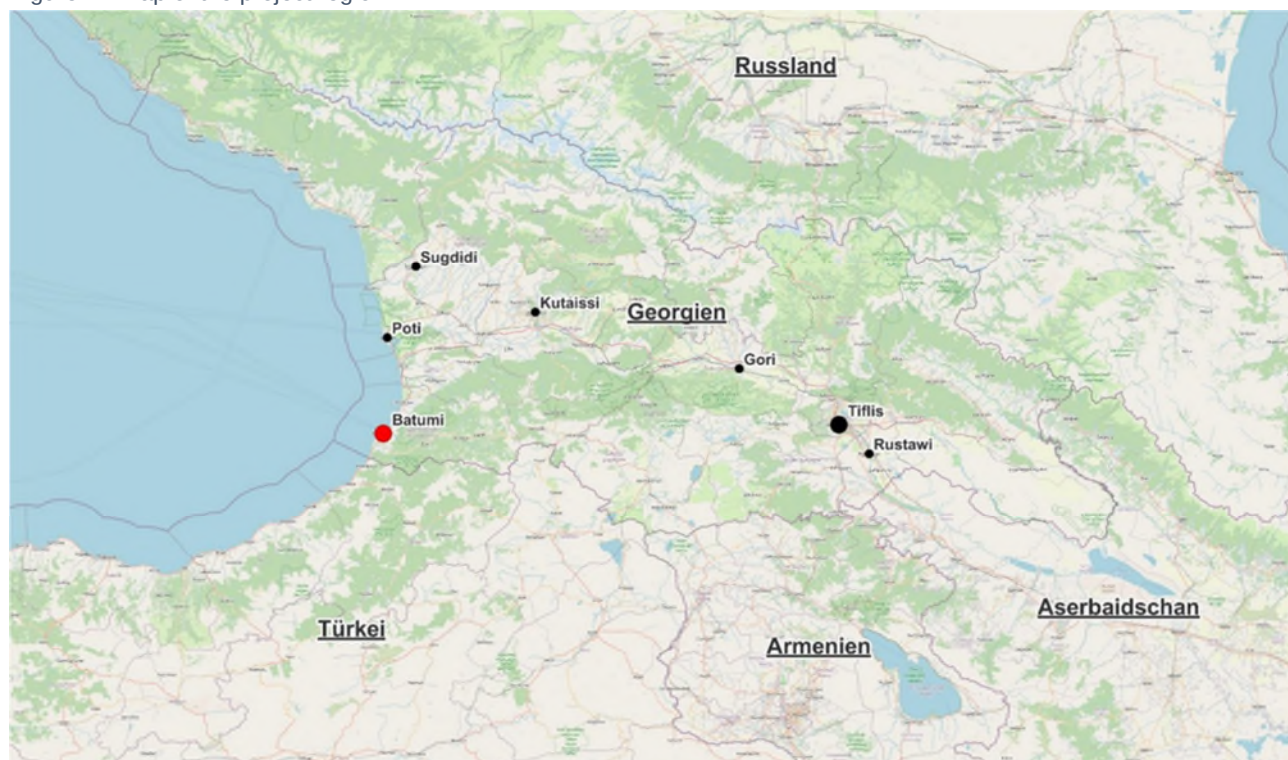
The fourth programme phase is the subject of this evaluation. However, the impacts achieved through Phase IV cannot be clearly distinguished from the cumulative impacts of the previous phases because the implemented measures are closely interlinked in some cases and because the strengthening and support of the executing agency and BTS has already been addressed through two prior complementary measures

Breakdown of total costs

In EUR million	Inv. (plan)	Inv. (actual)	CM (plan)	CM (Actual)
Investment costs (total)	30.0	32.6	2.0	2.0
Own contribution	0	1.1	0	0
External financing	30.0	31.5	2.0	2.0
<i>of which budget funds (BMZ)</i>	<i>30.0</i>	<i>31.5</i>	<i>2.0</i>	<i>2.0</i>

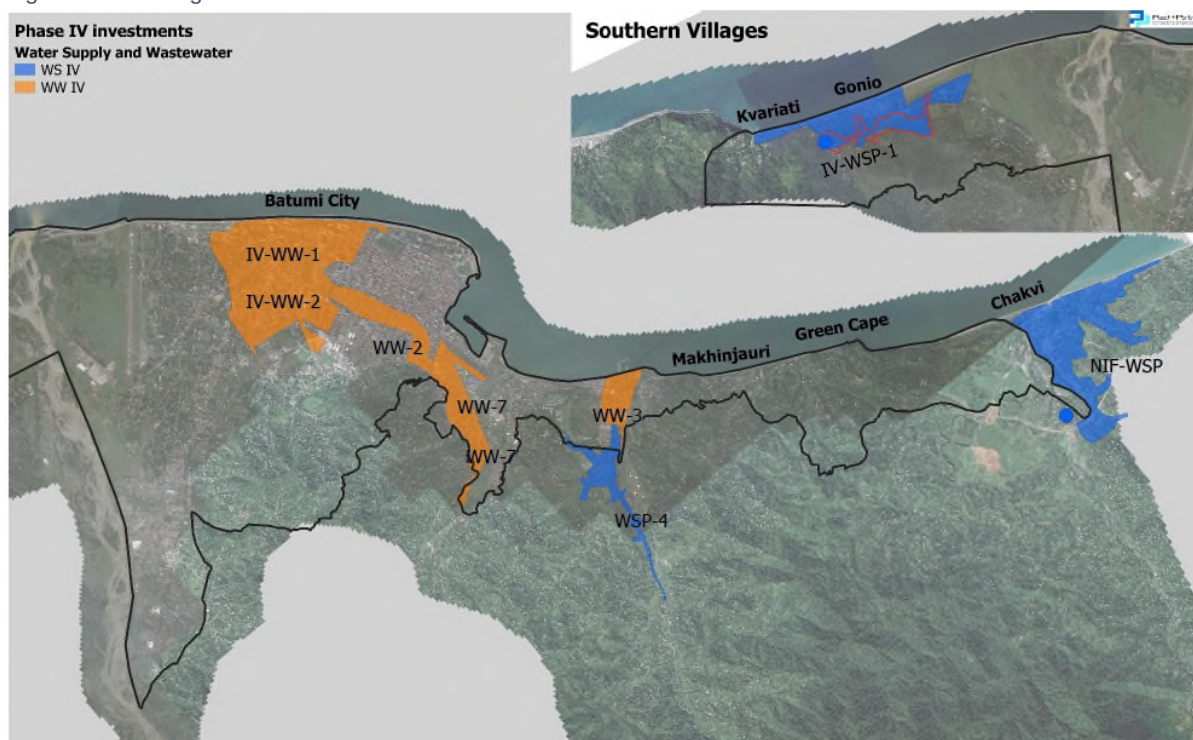
Map/satellite image of the project country incl. project areas

Figure 1 - Map of the project region



Source: Open Street Maps

Figure 2 - Drinking water/wastewater intervention areas:



Source: completion report

Evaluation according to OECD DAC criteria

Relevance

1. Alignment with policies and priorities

The objectives of the programme are aligned with the relevant policies and priorities of the partners involved and the BMZ. The programme is in line with the overarching development policy objective of environmental and resource protection and fits in with the objectives of the BMZ Caucasus Initiative. It contributes to the protection of international waters and is therefore in line with the European Neighbourhood Policy (ENP) and the "Black Sea Synergy" adopted by the EU in 2007. A further, explicit objective of the ENP and the Black Sea Synergy, which is met in particular through the activities planned in the neighbouring villages, is the improvement of water infrastructure and wastewater disposal in rural areas. According to the concept, no specific impacts are planned with regard to human rights, equality and inclusion, anti-corruption and integrity, conflict sensitivity or digitalisation.

The project supports the Georgian government in harmonising with international environmental standards, adapting to the effects of climate change and protecting the Black Sea. In 2009, the Georgian Ministry of Regional Development and Infrastructure developed a sector development plan for urban water supply and wastewater disposal with the vision of ensuring a continuous and reliable water supply and safe wastewater disposal for all Georgian city dwellers by 2020. This development plan is also to be implemented in Batumi as part of the Autonomous Republic of Adjara.

The objectives of the programme take into account the relevant political and institutional framework conditions. Infrastructure development is at the top of the political agenda in Batumi, both at city, regional and national level. The government of the Adjara region has set itself the goal of developing Adjara into a year-round tourist destination. The ongoing development of Batumi as a main tourist destination and the need for further infrastructure in the recently incorporated areas are driving the expansion of additional infrastructure.

The city's income has risen dramatically in recent years (from around GEL 110 million¹ in 2015 to around GEL 360 million in 2024). In real economic terms, the increase represents a doubling. A large proportion (approx. GEL 120 million in 2024) of the municipal budget is earmarked for investments in municipal infrastructure. In addition, around GEL 40 million will be needed to repay the capital and interest costs of the FC loans for project phases I to IV in 2024. Other relevant investment areas for the city are roads, parks and squares, education and public healthcare. Based on these figures, it can be concluded that the intervention is in line with the city's needs, but also with its own financial commitment.

2. Alignment with the needs and capacities of the beneficiaries and stakeholders

The provision of adequate water and wastewater services can be seen as a basic need for the beneficiary population as well as for local businesses and visitors. In this respect, the conception of the measure directly addresses the need of the population and visitors of Batumi for a regulated and reliable water supply and wastewater disposal. Some project participants have expressed the hypothesis that the rapid development of Batumi in recent years would not have been possible in this form without the investments made in water and wastewater.

The concept did not specify the target connection rate. Due to the topography, there is a part of the population in the outlying districts that lives above the respective elevated tank and cannot simply be connected due to technical problems and high connection costs. Based on the site visits, it can be assumed that households without a connection to the central drinking water supply have access to alternative types of water supply.

According to the implementation consultant, population density was used as a benchmark during the planning process in order to prioritise investments across the various phases. The areas above the level of the reservoirs (e.g. Gonio) are less densely populated and were deprioritised accordingly.

Part of the population has the status of "low-income family". This status entitles those affected to social assistance, additional benefits and earmarked subsidies. The benefits are financed from the central, regional and municipal budgets. As expected, the proportion of low-income families is higher in some neighbourhoods of Batumi than in others, but overall there appears to be a relatively good social mix in the city. The water and wastewater infrastructure is planned and implemented at neighbourhood and district level. The city of Batumi intends to provide these municipal services in the entire area within the municipal boundary. No potential discrimination in this respect was recognised. Furthermore, no particularly disadvantaged target groups were identified.

Drinking water tariffs for private households in Georgia are low. The tariff for private households with a water meter remained unchanged from 2006 to 2023 at 0.51 GEL/m³ (equivalent to 0.17 EUR/m³) incl. VAT. In 2024, this tariff was increased by 2 %. The tariff already includes the costs for wastewater. The minimum wage in Georgia is 350 GEL/month. A single earner earning the minimum wage in a family of four would therefore need 2 % of their monthly income for drinking water and wastewater. This means that the tariff is also financially affordable for the socially disadvantaged. The programme has no specific gender impacts. Based on the review of the available documents, the discussions held and the on-site visits, no further gender impact potentials could be identified that should have been taken into account in the design of the concept

3. Appropriateness of design

The programme design was appropriate, realistic and fundamentally suitable for helping to solve the core problem (inadequate drinking water supply/wastewater disposal and the resulting impeded economic development). The expansion and partial renewal of the drinking water and sewage network are considered to be technically without alternative. In areas with a lack of centralised water/wastewater disposal, in areas with old or dilapidated infrastructure and in areas where the capacity of the existing infrastructure has been exceeded due to the rapid increase in population and tourist numbers, the infrastructure must be adapted, expanded or renewed. The development and staffing of the operator as part of the complementary measure (CM) is also considered conceptually suitable

Due to the great need for investment in the water and wastewater infrastructure in Batumi over the last 15 years, it makes sense to consider the appropriateness of the design for all phases together. As the implemented infrastructure (up to and including Phase IV and in future Phase V) affects almost the entire water and wastewater

¹ Exchange rate Georgian Lari: 1 GEL = 0.35 EUR

system of the city of Batumi, the question in this case is not whether the most relevant urban areas were connected, but merely whether the sequence of measures was or is appropriate.

A stronger focus on the reduction of non-revenue water (NRW) - i.e. treated water that does not generate revenue for the supplier - might have been relevant. The topic was addressed as part of the CM but was not a priority in the design of the programme. In principle, BTS draws its water from the Chakvi River and the Mejinistskali well field. The Black Sea coast in Georgia has extremely high rainfall, so the region's water supply is not a limiting factor. In addition, the raw water can be treated to produce drinking water with comparatively little effort/cost. The relatively high proportion of NRW does not appear to be a high priority for BTS management and is accepted in the current situation, despite the inefficiencies and losses it causes

The results chain was not specified further in the design, but it is obvious that investments in improved water supply and wastewater disposal (activities) lead to a more continuous and reliable supply of drinking water for the target group and environmentally friendly wastewater treatment in the sewage treatment plant (module objectives). At impact level, the programme thus contributes to sustainable and environmentally friendly urban development and to improving wastewater disposal and the living conditions of the population of the city of Batumi and the surrounding supply areas

The design of the measure is precise and plausible and is equipped with three output indicators: continuous and sufficient drinking water supply in the project areas, appropriate treatment of wastewater in the sewage treatment plant and recovery of operating costs two years after the start of operation. The defined objectives and corresponding indicators as well as their values are considered appropriate by the EPE. To improve the verifiability of the first indicator, a target figure for the connection rate to be achieved could have been introduced. With regard to sustainability, the last two indicators only make sense if sufficient funds are provided and spent on maintenance. Although this distinction was not explicitly made in the target system, it was listed as an implementation condition in the special agreements to the financing contract and thus taken into account in the conceptual design.

No indicators were defined at impact level, but it was assumed that if the objectives at outcome level are achieved, the objectives at impact level are also automatically achieved. This seems plausible provided that the built infrastructure is operated and maintained appropriately, that the water tariffs are financially affordable and that the development of the water/wastewater infrastructure is in line with the general urban development in Batumi

The concept is based on a holistic approach to sustainable development - this includes the ecological impact of wastewater treatment and the social dimension of infrastructure construction for the entire urban population. The measure is flanked by a CM, the concept and design of which is geared towards sustainability (sustainable operation of the financed infrastructure, sustainable development of the operator). In this way, investment and operation are conceptually addressed holistically.

In principle, the partner and operator lacked sufficient expertise to tender and supervise the planning and construction of more complex structures (e.g. deep channels, hydraulic modelling of drinking water/wastewater networks, etc.). The project concept envisaged providing the project executing agency with an implementation consultant and an institutional consultant as part of the CM. Both were selected with the support of FC. This was explicitly described by the executing agency as a success factor of the project.

At the time of conception, the measure was not part of a development cooperation programme. In 2017 (during implementation), the "Water and Governance in the South Caucasus" programme was created. Its objectives are defined in such a way that the ongoing projects (including the measure under evaluation) contribute to them.

4. Adaptability-response to change

Cost overruns for phase III of the programme meant that the originally planned scope of financing for phase IV had to be adjusted after the contract was signed. The expansion of the wastewater network in the Chakvi villages (Chakvi, Greencape, Makhinjauri) originally planned in the module proposal was postponed due to cost overruns in the preliminary phase and a shift in priorities in favour of the wastewater measures in the city of Batumi. In addition, further network measures were realised in the inflow to pumping stations A and B in the city centre. As the project still comprised both sewage disposal and drinking water supply infrastructure in Batumi after this adjustment, this adjustment does not represent a significant change to the original concept.

The planning of this long-term infrastructure project is inevitably based on estimates of future population growth. Due to the current developments caused by the war in Ukraine, the population of Batumi has temporarily grown stronger than planned. It is still difficult to accurately estimate demand due to the fact that tourism figures are only recorded as overnight stays per year and at regional level. The large proportion of the population with second homes in Batumi also makes it difficult to estimate the exact demand. To summarise, it can be said that it was not necessary to adapt the concept during implementation. Due to the at times rapid and unexpected increase in population and tourism figures, we estimate the relevance of the programme to be even higher today than it already was at the time of the appraisal.

Rating summary

From the perspective of the evaluation, the programme was aligned with the relevant policies and priorities as well as the needs and capacities of those involved and affected. The design was appropriate and despite the drastic events during implementation (e.g. COVID pandemic), it was not necessary to adjust the programme concept. The start of the war in Ukraine led to a large influx of refugees to Batumi. As a result, the relevance of the programme was at times higher than originally anticipated. Overall, the relevance of the programme is rated as very successful from the perspective of the evaluation.

Relevance: 1

Coherence

5. internal coherence

At the same time, a rainwater management project was implemented in two phases². Beyond this, no other German development cooperation instruments with direct relevance to the measure were identified in Batumi. From 2020 to 2023, the city of Batumi implemented a project in the field of sustainable urban transport in cooperation with German Technical Cooperation (TC). The FC measure was supplemented by a CM to strengthen the executing agency and operator and in this sense represents a well-rounded development cooperation instrument.

The objective of the successive phases of the FC measure was to modernise the water supply and wastewater disposal systems, extend them to newly incorporated urban areas and improve the quality of service. The measure builds on the previous phases of the FC programme or builds on the results of the previous phases.

In June 2020, a draft development cooperation programme on "Good Governance South Caucasus" coordinated between TC and FC was proposed to the BMZ but could not be put into effect with regard to the BMZ Strategy 2030. Until the BMZ Strategy 2030 was adopted, the draft programme was declared provisionally applicable and was reported on accordingly. Given the timing of the development cooperation programme, it can be assumed that the embedding of the FC module in the development cooperation programme did not actually contribute to the specific coherence of the FC module within German development cooperation.

German development cooperation has been supporting Georgia in Batumi since 2005 as part of the Caucasus Initiative (focus on the environment). There are no TC projects in the water sector and none are planned as part of the municipal development programme in the South Caucasus, which is geared towards strengthening local self-government and good local governance.

The measure supports the achievement of the international 2030 Agenda (in particular SDG 14 "Life below water"), primarily through contributions to water and resource protection and the preservation of the biodiversity of the Black Sea. The connection to a functioning water supply and wastewater disposal system also improves basic sanitation and thus the quality of life of the population (SDG 6 "Clean water and sanitation"), especially women and girls in this region, who are generally responsible for caring for the sick (SDG 5 "Gender equality"). In addition, the project creates the basic conditions for the further expansion of tourism in the city of Batumi and

² Municipal Infrastructure Batumi III, Surface Water Management (Stormwater Phase I: BMZ No. 2011 66 719) and Adaptation to Climate Change in Adjara - Coastal Protection - Stormwater Management System Batumi (Stormwater Phase II, BMZ No. 2013 97 728). Phase II was evaluated in parallel (separate report).

thus contributes to the economic development of the entire region (SDG 8 "Economic growth" and SDG 11 "Sustainable cities") and to poverty reduction through rising incomes (SDG 1 "No poverty").

The investment measures were implemented in compliance with the relevant environmental and social standards. According to the consultant's final report, the specific ESMPs (Environmental and Social Management Plan) for the various construction contracts were complied with. In some cases, it was noted that the required protective clothing was not worn. Otherwise, there were no significant incidents. The Georgian regulations regarding environmental and social standards were followed.

6. External coherence

As already mentioned under Relevance, the programme is geared towards the needs of the city of Batumi for water and wastewater infrastructure and is also in line with the city's financial commitment. BTS and the city did not have the capacity to plan, tender, manage and operate more complex infrastructure measures. In this respect, the measure fills the gap between the needs and capacities in the area of water and wastewater infrastructure.

Before the measures to expand and rehabilitate the water supply and sanitation infrastructure began, no significant investments had been made in this sector in Batumi in the recent past. As part of the FC programme, the large and technically more complex infrastructure measures were carried out with the financing and technical support of FC, under the direction of the municipal administration. Smaller and less complex investments (for example, the house connections for drinking water and, in some cases, sewage) are carried out directly by the operator itself, sometimes with the support of the complementary measure.

At the specific level of the programme, the design or implementation was not coordinated with other donors. From the perspective of the evaluation, there was no compelling need for this due to the geographical spread of the various measures in the sector and the local focus of the FC programme. However, there is a regular exchange with other donors (in particular AfD, EIB, ADB, EU and EBRD), partly also in sector dialogue with the responsible ministries in Georgia, for example on the topics of environment/cleaning standards and tariff adjustment.

The municipality of Batumi is the recipient of several grants from other development organisations. The evaluation team was provided with an overview of the contributions from 2015 to date. These were exclusively grants. The seven past and current engagements in cooperation with UNDP (United Nations Development Programme), EU, GIZ and USAID were in the main target areas of sustainable transport and energy efficiency. Of these seven commitments, two were financed by German FC. In general, it can be said that all of these commitments are geared towards green, sustainable and energy-efficient development of the city of Batumi and are thematically coherent in this sense.

The investments in water and wastewater in Batumi were financed exclusively by FC. In terms of financing volume, the other interventions in Batumi account for only a fraction of the FC involvement in all phases of this project. For this reason, closer harmonisation and coordination with the efforts of the other donors was not expected to yield any significant benefits. This assessment is limited to the current commitments and makes no statement about future developments.

With this project in Batumi, Germany is the most important bilateral donor in the Georgian water sector. In the wider Batumi area, there is a sectoral connection with the water and wastewater projects in Georgia (cities of Kutaisi, Anaklia, Zugdidi, Mestia, Marneuli, Ureki and Poti) financed by the Asian Development Bank (ADB) to the tune of USD 500 million. The European Investment Bank (EIB) is also active in the Georgian water sector, financing mainly emergency measures in the water networks in 28 Georgian cities. German involvement is being further expanded with the FC projects currently being implemented to rehabilitate water and wastewater infrastructure in rural Adjara and the fifth phase of the programme for municipal infrastructure development in Batumi.

The design of the measure is based on systems and structures that were created as part of the previous phases of the FC programme. No joint systems with other donors were used.

Rating summary

The question of internal coherence does not really arise in this programme. KfW is the only German DC implementing organisation active in the water sector in Batumi. Efforts to coordinate with the efforts of other donors (external coherence) would have had no practical relevance for the programme. The programme is subsidiary to

the partner's own efforts and to the previous phases of the FC programme. The different phases of the FC programme build on each other with the aim of having expanded or renewed almost the entire water/wastewater infrastructure in Batumi by the end of the current Phase V. As the coherence with the partner's own efforts is given and the different phases of the FC projects form a thematic-geographical unit, the coherence of the programme is rated as successful from the EPE's point of view.

Coherence: 2

Effectiveness

7. Achievement of (intended) objectives

The FC module objective was to provide the population of Batumi, the Chakvi villages and the southern villages with a continuous and needs-based supply of hygienically safe drinking water as well as the environmentally sound disposal and treatment of the wastewater produced.

The achievement of the objective at outcome level can be summarised as follows:

Table Target achievement Outcome:

Indicator	Status at PP	Target value according to PA/EPE	Actual value for PCR	Actual value for EPE
(1) Continuous and sufficient drinking water supply in Batumi and the rehabilitated areas of the Chakvi villages and the southern villages.	40 - 100 LCD, < 24h/day (2010)	120 LCD, 24 h/day	Achieved Batumi City, Chakvi villages >120 LCD 24 hrs/day Southern villages 120 LCD 24 hours/day	Fulfilled (see text).
(2) Batumi, Chakvi villages and southern villages: operating cost recovery two years after the start of operations	No invoicing and collection in Chakvi and the southern villages	Cost recovery (operating cost recovery on commissioning, full cost recovery 2 years after commissioning)	Partially achieved Operating costs: 107% Full costs: 86%	Operating costs: 131% (2023) Fulfilled. Full costs: no values available.
(3) Batumi: Appropriate treatment of wastewater in the wastewater treatment plant	No treatment (2010)	Target values COD 125 mg/l, BOD ₅ 25 mg/l, TSS 35 mg/l one year after commissioning	Achieved	Fulfilled. Discharge values are achieved

As part of the EPE, household surveys were conducted in the project areas of Chakvi, Gonio and in the urban area of Batumi ("Swamp area" and Gorodok). All interviewees reported a 24/7 water supply of good quality. Several households reported that they also use the water for watering their gardens. This could be partly due to the low tariff for households. Drinking water samples are taken daily at several points in the network and the results are published on the website. The parameters measured are within the permitted limits.

The monitored and recorded data in the water network does not explicitly confirm a 24/7 water supply but based on the corresponding feedback from the residents surveyed and the absence of complaints via the BTS hotline, it is plausible that this is the case in the majority of cases. There was talk of pressure problems in the higher areas during the peak holiday season in Gonio.

During the evaluation mission, both BTS and the consultants reported an average available water quantity per capita of more than 120 litres per inhabitant per day (LCD for litres per capita per day). This statement was checked for plausibility on the basis of the available data. In the entire BTS supply area, 21.5 million m³ of drinking water was billed in 2023 for a total of 136,595 customers (the distinction between household and non-household customers is not taken into account in this analysis). With an average household size of 3 inhabitants per household, this results in a daily per capita consumption of just under 150 LCD.

The operating cost recovery rate in 2023 was 131%, which means that all operating costs were covered by the available revenue. To date, however, BTS has not earmarked enough funds for maintenance and repair. Based on the CM-Consultant's reports, BTS was unable to plan and implement an appropriate maintenance budget until and including 2023. This was mainly due to a lack of funding. The cumbersome system of public procurement also hindered the procurement of required spare parts and necessary repair services. Failure to carry out maintenance is one of the greatest risks to the provision of high-quality services by BTS. As part of the fifth phase of the FC programme, which is currently being implemented, an asset management plan based on international best practices is being drawn up and put into practice. It is expected that this will enable BTS to plan and realise more funds for maintenance and repair in the future. With regard to full cost recovery, it should be noted that depreciation could not be correctly recognised or allocated in BTS's previous accounting system. A reliable value for the full costs can only be determined when the system is converted from 2024.

Parts of the old sewerage network under the city of Batumi are still connected to the sewage treatment plant. This is expected to lead to significant groundwater ingress into the system due to the high groundwater table. This has a negative impact on the wastewater concentration (too low) and the hydraulic load (too high) and may lead to sub-optimal treatment performance in the wastewater treatment plant. The complete decoupling of the old system is planned for phase V of the FC project.

The analysis data in the monthly reports of the accompanying measures consultant show that the discharge values are continuously within the applicable limits for BOD5 (biological oxygen demand after 5 days), COD (chemical oxygen demand) and TSS (total suspended solids). However, as these results are based on random samples, they do not necessarily provide a representative picture of the overall operation.

8. Contribution to the achievement of objectives

The capacities created for drinking water supply (network expansion, network rehabilitation and newly constructed elevated tanks) and wastewater disposal (network expansion and network rehabilitation) are being utilised. The BTS production figures show that drinking water consumption in Batumi is growing steadily. In January 2024, the number of BTS customers had risen to 136,595. The total annual water production and billed water volume for 2023 amounted to 34,019,896 m³ and 21,495,296 m³ respectively. This represents another significant increase compared to the 2021 figures at the end of the programme (see table).

Year	Customers	Billed water	Revenues	Water produced	NRW	Water network	Sewage network	Lab tests
		m ³	GEL	m ³	%	km	km	
2016	69.531	13.028.203	12.603.589	18.801.340	31	265	148	1.502
2017	75.522	13.403.030	13.026.742	18.391.340	27	288	161	2.745
2018	84.031	14.651.456	14.457.243	19.522.306	25	321	176	2.313
2019	96.685	14.968.073	16.342.121	21.020.358	29	369	197	2.827
2020	100.777	14.407.830	13.179.978	20.732.139	31	386	204	1.845
2021	106.572	15.372.665	14.936.817	23.109.874	33	409	210	2.272
Diff. 2016 / 2021	53%	18%	19%	23%	9%	54%	42%	51%

Source: CM Consultant (MACS) final report, 2022

Non-discriminatory access to the outputs provided and capacities created appears to be a given. On the one hand, as mentioned in section 2, the drinking water tariff for households is very low. Secondly, the city and BTS explicitly aim to supply the entire urban area with water/wastewater infrastructure and to maximise the connection rate

As mentioned above, it is not clear to what extent households living above the geodetic height of the respective reservoir are taken into account. In such cases, BTS incurs higher connection and operating costs. The postponement of the sewer construction measures in Chakvi and southern villages in favour of additional measures in the core city shows that the city administration is prioritising the core city. However, this is understandable given the scarce resources and higher population density in the city centre.

The measure has contributed directly to the achievement of the objectives at outcome level through the new construction or renewal of the drinking water networks. Operating cost recovery is linked directly to the revenue generated. The additional connections financed by the project contribute to higher revenues and thus to better operating cost recovery. The appropriate treatment of wastewater in the sewage treatment plant was only addressed in the programme by the CM

The objective at the level of the intended beneficiaries mainly concerns the continuous and sufficient supply of drinking water in the rehabilitated areas. Based on the data provided and the statements of the residents surveyed, the objective has been achieved and the project has ensured that the drinking water supply has improved both qualitatively and quantitatively. The wastewater measures have made a positive contribution to the quality of life of local residents, including fewer sewer blockages, less odour pollution and cleaner streams. At the same time, the rainwater components (evaluated in parallel) have led to an increased separation of wastewater and precipitation flows.

No particularly disadvantaged/vulnerable groups were identified in the project area. No measures were implemented that were specifically aimed at women

The clear division of responsibilities in the implementation of the investment projects contributed to the success of the programme. The planning and implementation of the KfW investment projects was led by the city with the support of the implementation consultant. The PEA (Project Executing Agency) Working Group served as an interface with the other departments of the city administration responsible for regular infrastructure projects. The expertise of the implementation consultant and the support of KfW in the tendering and awarding of this consulting contract was a clear success factor

The accompanying measure supported the coordination of the proper implementation of house connections and played an important role in the optimisation of wastewater treatment plant operation.

It should also be noted that there was a high degree of continuity in the consultant teams throughout all phases of the project. The implementation consultant has been the same since the first phase, with an interruption of around 2 years (see section 9). The CM consultant has not changed over the various phases. Both consultants have retained the key experts (e.g. team leaders) in their teams throughout all phases of the programme. This personnel consistency can be seen as a success factor, particularly for the accompanying measure, as a counterbalance to the frequent personnel changes at BTS

Operating cost recovery was achieved in 2023, which is primarily due to the sharp increase in the number of customers and an increase in the tariff for non-residential customers from 2022. The tariff for commercial customers is on average 11 times higher than the tariff for private households, resulting in intensive cross-subsidisation.

The staff turnover at BTS at management level remains problematic and may have contributed to the fact that the operation and maintenance of the wastewater treatment plant was found to be in need of improvement at the time of the EPE.

9. Quality of implementation

None of the factors that led to delays in implementation (see Efficiency section) can be considered a substantial shortcoming in terms of control quality. All construction contracts were almost completely finalised within the (revised) deadline

The quality of the visible infrastructure (reservoirs, shafts, etc.) appears to be acceptable based on the on-site visits. However, a large part of the built infrastructure is below the surface and could therefore not be visually

inspected. The quality of the domestic drinking water connections (above-ground PP pipelines) was categorised as simple. However, no defects were identified at the time of the EPE.

The services of the implementation consultant were utilised for the planning, tendering and construction supervision of the measures. The client was managed by the PEA Executive Committee. At the end of 2017, the contract with the implementation consultant, who had initially been selected to implement the project, was cancelled due to differences regarding the consultant's performance. This resulted in additional tasks for the executing agency. Following a new invitation to tender, the contract was signed in April 2018 with the "new" implementation consultant, who had already been involved in the implementation of phases I-III of the FC programme

The award of the main construction contract was launched at the beginning of February 2019 and the construction contract was signed in April 2019, which indicates effective processing and appropriate management. The other construction services were awarded as an additional service during the tendering of the contracts for phase III and could therefore be implemented immediately after the financing contract for phase IV was signed (early 2016). The establishment of a PEA and the associated PEA working group was assessed as an effective structure for the efficient implementation of the investment measures.

No specific gender measures were implemented. These were not considered relevant for the specific project context.

10. Unintended effects (positive or negative)

The project was categorised as B in terms of environmental and social compatibility. There were no particular incidents (accidents or similar) during implementation. No other unintended environmental or social impacts were identified.

By introducing a management information system and a SCADA (SCADA stands for Supervisory Control and Data Acquisition) system for monitoring, controlling and managing the drinking water network, the project has contributed to the further digitalisation of the operator BTS.

Rating summary

The programme has clearly contributed to largely achieving the objectives. The quality of implementation and management is considered good. There were no discernible negative unintended effects. Overall, the effectiveness of the programme is rated as successful.

Effectiveness:2

Efficiency

11. Production efficiency

Investments in the project totalled just under EUR 34.5 million. 89.1 % of the investments were spent on construction measures. Consulting costs totalled 10.9% (5.4% for the implementation consultant and 5.5% for the complementary measure consultant) of the total volume. The grant amount (complementary measure) also totalled 5.5% and the counterpart contribution amounted to 3.3% plus local duties and taxes. The costs for the management and coordination of the measure are within an acceptable range.

The procurement and implementation of the physical infrastructure measures was awarded on a tender basis at the lowest cost. The evaluation did not identify any inefficiencies in this regard.

Most of the 22 new electromagnetic flowmeters installed at the Mejiniskali well field as part of the project were already defective at the time of the EPE. None of them were ever connected to SCADA. The corresponding costs are therefore only offset by a short-term benefit at best. The flow meters at the Gonio reservoir are also defective and prevent automatic chlorine dosing; it is currently done manually, whereby the maximum value of 0.5 mg/l is maintained. The cost share of these measuring devices is low compared to the total investment sum of the project, but the potential efficiency gain that could have been achieved with these devices is not realised.

There is no obvious alternative to the investments made. However, it can be noted here that it was generally decided to have the drinking water connections (meter box and last pipe to the customer) implemented and

financed by BTS. This freed up more money and capacity for the project, whereby the relatively simple connection work could be carried out by BTS at low cost.

When the contract was signed, the first part of the construction contracts was scheduled for completion between the end of 2016 and the end of 2018 (awarded as optional services as part of the services already put out to tender in phase III), which was also the case. The services that were put out to tender as part of phase IV were scheduled for completion between the end of 2017 and the end of 2018. However, due to delays caused by the change of implementation consultant and later on by the COVID pandemic, completion was postponed to the end of 2020 to mid-2021.

Traffic management in connection with the construction work was an important issue due to the high intensity of traffic during the tourist season. The construction time available on certain road sections was limited, which led to increased time pressure during the infrastructure works. This posed an additional challenge for the coordination of work on several utilities (sewerage, roads, electricity, etc.) and for efficient implementation. The intensive support provided by the implementation and accompanying measures consultant during construction supervision and coordination of the house connections contributed to more efficient implementation.

Supply operations are largely efficient. Measured against the volume of water produced, the technical and administrative losses in recent years (non-revenue water/NRW) have been between 25 % and 33 %, which is still considered an acceptable level.

12 Allocation efficiency

The development loan provided is considered a suitable instrument due to the comparatively low interest rate, as the high costs of a commercial loan would have been difficult for the municipal administration to bear. The FC support therefore enabled the measures to be financed efficiently.

The provision of needs-based water supply and wastewater disposal for end customers depends on the available/prepared infrastructure. The corresponding results chain between the measure and the outcome objectives is short and direct. From the perspective of the EPE, there is no alternative to the investment measures implemented in terms of achieving the objectives. In this respect, no significant alternatives were identified as part of the EPE. Irrespective of this, the prioritisation and technical design of the various trades can generally always be discussed. However, there are no indications that the decisions in this regard were made in a way that was detrimental to the project.

Rating summary

The production efficiency achieved is within an acceptable range, and the allocation efficiency is also given due to the lack of plausible alternatives. The efficiency of the programme is therefore classified as successful in the context of the EPE

Efficiency: 2

Overarching developmental impact

13. Overarching (intended) developmental changes

The overarching developmental objective (impact) was defined at project appraisal as follows: "Contribution to sustainable and environmentally friendly urban development and to improving sanitation and the living conditions of the population of the city of Batumi and the surrounding supply areas". The objective of the measure is not formally adjusted as part of the EPE, but from the perspective of the EPE, the objective of improved wastewater disposal is located at module objective level and is therefore considered in the Effectiveness chapter. No indicators were defined at impact level. Due to the directly traceable results chain between the module objective and the impact objective (i.e. between water supply and wastewater disposal and sustainable, environmentally friendly urban development), this is not considered necessary.

This project is part of the BMZ Strategy 2030, in particular within the core theme "Responsibility for our planet - climate and energy" in the area of "Sustainable urban development" and the field of action "Urban water management". The pressure on the urban infrastructure in Batumi has steadily increased in recent years. This is due to

the strong population growth. Following the incorporation of the surrounding villages in 2012, the population has risen from 155,000 in 2015 to almost 180,000 in 2023 (~16 %). In addition to the formally registered residents, there is a significant proportion of people who live in Batumi but are not officially registered. Billed water volumes (see section 7) can be used as an indicator of the total population to be supplied. The recorded 21.5 million m³ (2023) correspond to a population to be supplied of 490,000 based on an average consumption of 120 LCD.

An important factor affecting population growth is the war in Ukraine, which has led to a significant increase in the number of Russian and Ukrainian visitors and residents in Batumi and throughout Georgia. The Reuters news agency estimates that more than 112,000 people have fled from Russia to Georgia since the invasion of Ukraine began. Of these, at least 20,000 are said to have travelled to Batumi. The number of Ukrainian refugees in Georgia in 2024 is estimated at 28,000 people. However, it has been established that almost two thirds of Russians have left the country again after almost two years of conflict.

In recent decades, tourism has been one of the most important economic activities in Batumi. This has led to an increase in international hotel chains as well as casinos that attract tourists from neighbouring countries where gambling is illegal. Every year, around 30% of tourists visiting Georgia come to the Adjara region. Their numbers have increased in recent years following the pandemic

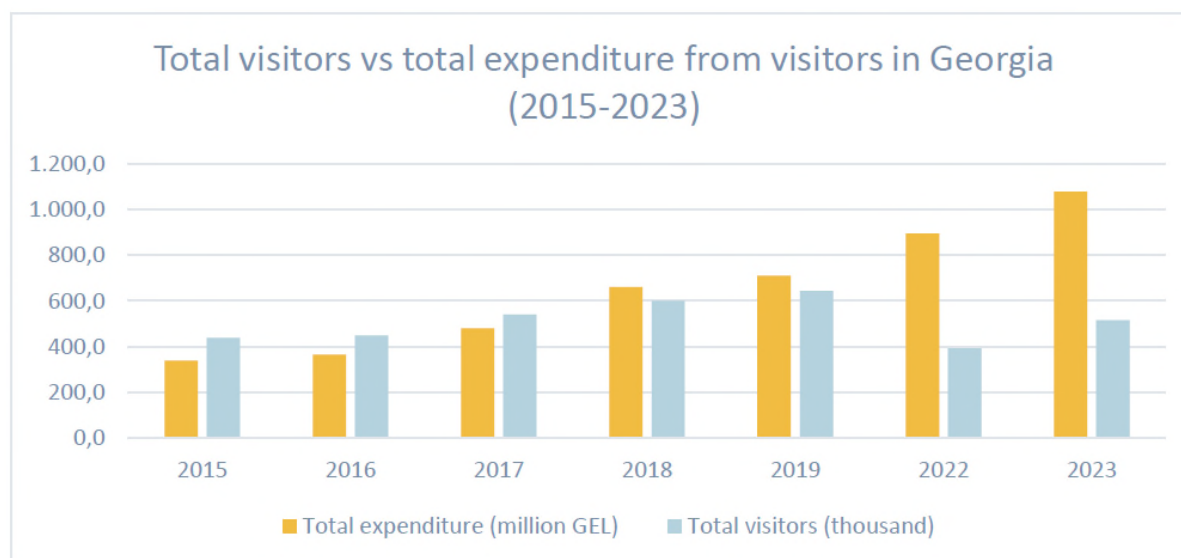
The figure below shows a significant increase in international tourists in Batumi and Adjara between 2015 and 2023. It can be observed that the number of tourists in 2023 is above the pre-pandemic level. The second figure also illustrates total visitor spending in Georgia (in GEL) between 2015 and 2023, which has consistently increased.

Figure 3 - Average number of tourists in Adjara over time:



Source: Inception Report Batumi Phase V, CM-Consultant (MACS)

Figure 4 - Tourist numbers and tourism revenue over time:



Source: Inception Report Batumi Phase V, CM-Consultant (MACS)

The previous ratio of around 1,000 GEL/visitor has doubled in recent years, showing that visitors are willing to spend more money when visiting Georgia. This is reflected in the economic development of Batumi in recent years, which has been influenced by the increase in accommodation prices and high inflation in the period 2021-2023. With new property and hotel projects in the city, a further increase in tourist numbers is expected. According to some stakeholders, the current developments are leading to a certain degree of tension between private and public interests from an urban development perspective

Another indicator of the upturn is the strong increase in the municipal budget. Over the last 10 years, the real budget has doubled to currently GEL 356 million (approx. EUR 121 million). The advanced stage of completion of the water and wastewater infrastructure also speaks for itself. It is assumed that with the planned investments of Phase V, which is currently being implemented, the most important components of the water/wastewater infrastructure will have been built/renovated across the board.

The target group of the measures were the residents of the city of Batumi. The fourth programme phase particularly benefits the approximately 25,000 inhabitants who live adjacent to the residential areas from Phase III and were newly included in the project. The target group for the measures in the Chakvi villages is around 18,000 people, spread across the villages of Chakvi, Greencape and Makinjauri. The target group in the southern villages comprises around 20,000 inhabitants, spread across the villages of Gonio, Kvartati and Akkhalisopeli

Overall, the population of Batumi is benefiting from the city's economic growth. However, it can be assumed that some parts of the target group benefit more than others. One example of this is the large number of high-rise developments and large hotel chains. Although this creates jobs and the tourists who remain here also generate income elsewhere in Batumi, a significant proportion of this income flows to investors/groups that are already well-funded. The city centre and the promenade are also a focus of the city's urban development activities. People who live there therefore benefit more from the developments. The deferral of wastewater investments in the surrounding villages shows the downside of this prioritisation.

Discussions are currently taking place at national level regarding the introduction of a tourism tax, which emphasises the desire for greater community involvement in lucrative developments. The extent to which municipal development as a whole is currently sustainable and environmentally friendly cannot be conclusively assessed within the framework of the EPE.

14. Contribution to overarching (intended) developmental changes

The on-site visits and interviews with stakeholders and affected parties have confirmed the assumption that the investments made in water and wastewater not only contribute to sustainable and environmentally friendly urban development, but also represent an essential prerequisite for this. Due to the close links and interactions between

the development of the city and the expansion and improvement of the municipal infrastructure, it is difficult to determine the separate contribution of the project. In general, however, it can be assumed that the rapid development of Batumi in recent years would not have been possible without the improvements to the drinking water and sewage situation brought about by the various phases of the FC projects.

The rehabilitation of the water supply in the target areas represents an improvement in public services. The beneficiaries surveyed are generally satisfied with the level of service and the improvement brought about by the FC programme. The extent of the positive impact on living conditions is household-specific and depends on the type of water supply and the level of service before the start of the project (illegal connection, independent water supply). For example, a comparison between two household surveys (2005 and 2017) carried out as part of the project for residents of Batumi showed that in 2017, 85% of respondents consumed drinking water directly from the tap compared to only 56% in 2005. Around 85% of households surveyed in the surrounding villages in 2017 (before implementation of the corresponding measures) stated that the water supply urgently/very urgently needed to be improved. No further household survey was carried out after implementation of the measure, but based on the interviews conducted and the data provided, we also assume a substantial improvement here.

In the project areas visited in which the sewage system was rehabilitated, the main positive effects reported were fewer blockages and odour nuisance. This was particularly the case in the densely populated "swamp area" of the city centre. In the areas visited where there was no sewage system yet (e.g. Gorodok), wastewater was drained from open roadside ditches or streams flowing through the area and discharged into the underground sewage system, with corresponding positive effects on the environment and quality of life. The proportion of the population that described wastewater services as poor or very poor fell from 48% to 12% in Batumi between 2005 and 2017. As mentioned above, no wastewater measures have been implemented outside of Batumi.

The bathing water quality on the Black Sea coast was monitored from the 3rd quarter of 2020 to the 2nd quarter of 2021 as part of the accompanying measure. According to the EU *Bathing Water Quality Directive* 2006/7/EC and 76/160/EEC, the quality can generally be described as sufficient. Although these are only random samples over a longer period of time, this can be seen as an indication of improved wastewater collection and treatment. Isolated exceedances at some measuring points could be linked to areas not yet connected to the wastewater network.

Comprehensive investments in municipal infrastructure generally benefit the entire city. The positive effects can therefore not be differentiated between the different groups within the target group, although the results of the household survey indicate that the extent of the positive effects in the core city is higher than in the surrounding villages, which is probably due to the prioritisation of the core city in the selection of measures.

The internal project factors that were decisive for the achievement of objectives at impact level are basically the same as those that contributed to the achievement of the module objectives (see section 8).

In general, the development objective for the programme is considered to have been achieved. The extent to which the objective was achieved was influenced by the local context. The broad support for the project on the part of local politicians is categorised as an important external factor the achievement of the project objective.

Batumi is developing rapidly. Two main factors are the attraction of foreign investment and the development of the tourism sector. There are a number of binding national/local/city regulations for urban development projects, but these currently relate mainly to the project level. An urban development masterplan is in preparation but not yet in force. The (still) missing urban masterplan is an illustration of the fact that the planning of urban development activity and the planning of municipal supply infrastructure are not sufficiently coordinated within the city administration. This leads to inadequate planning for the water and wastewater infrastructure, which ultimately has a negative impact on the quality of service for the end customer. The non-functioning District Metered Areas (DMAs), as described below in section 16, are a good example of this. We consider this lack of coordination to be an external factor that had a negative impact on the achievement of the programme objectives.

The FC projects in Batumi contributed directly to the establishment and strengthening of the operator BTS and its professionalisation. Following these positive experiences in the urban area, the Adjara Water Alliance (AWA) was founded during the initial phase of the programme (2017). The AWA is a public limited company owned by the Government of Adjara and the Adjara municipalities and was founded with the aim of replicating the expertise and positive experiences from the various phases of the FC projects in Batumi in rural and semi-urban areas in Adjara. The AWA is currently the implementing organisation in other FC projects³ for the development of water

³ Rural water supply and sanitation in Adjara I and II, BMZ no. 2013 66 921 and 2023 67 951

and wastewater infrastructure. Through the AWA, there is a close exchange and transfer of expertise from BTS to the new utilities in the rural communities of Adjara. Joint focal points such as ensuring water quality at the treatment plant on the Chakvi River through wastewater collection and treatment measures in rural areas are addressed. Training and further training measures for new personnel in rural areas are also being organised in Batumi at BTS. In this respect, the FC projects have had a broad impact

As already explained, it is obvious that the developments achieved in Batumi would not have been possible in the same quality without the FC-financed investments. The financing and technical expertise offered by FC and KfW throughout all phases of the programme contributed significantly to the successful implementation. The projects therefore have a clear developmental additionality.

15. Contribution to overarching (unintended) developmental changes

At the time of the appraisal, it was assessed that the programme could potentially have negative impacts on environmental and social issues resulting from the construction and operation of small wastewater treatment plants and the construction of the higher-level plant and network components. For this fourth programme phase at impact level, these were in particular environmental protection issues (e.g. hazardous waste) in connection with the construction measures. However, these could be minimised with state-of-the-art countermeasures or standard solutions. No further critical environmental or social impacts were identified during the implementation of the programme.

Rating summary

An overarching developmental impact can be identified. The programme has made a comprehensible contribution to this. Accordingly, the overarching developmental impact of the programme is rated as successful in the context of the EPE.

Overarching developmental impact: 2

Sustainability

16. Capacities of the beneficiaries and stakeholders

One major challenge is staff turnover and the lack of solid technical expertise in BTS's middle management. The frequent changes in the BTS management team in recent years and the different management styles have had a negative impact on continuity. Staff turnover in the past required frequent repetition of the CM consultant's introduction of staff to topics such as Batumi Tskali's management principles, operational and maintenance standards, customer focus, service quality and cost recovery. It can be assumed that this situation will remain unchanged in the coming years.

Overall, it is concluded that BTS is able to maintain and operate the infrastructure independently at a satisfactory level and thus maintain the positive effects of the project as long as no major adjustments are required (see further comments on maintenance below).

In principle, the target group has a direct interest in maintaining the positive effects of the measure by maintaining the service quality for water supply and wastewater disposal. It can therefore generally be assumed that it is willing to contribute to this and will bear the resulting costs. Based on international standards, a tariff for water and wastewater of up to 3 % of household income is considered socially acceptable. Based on the 2017 household survey, an average willingness to pay was determined that corresponded to only a third to a quarter of this international standard. If expenditure on maintenance and repair increases in the future due to the structural inclusion of depreciation (see section 7), this could necessitate a further tariff increase in order to ensure cost-covering operation. To ensure that the willingness to pay keeps pace with such a development, an improvement in service quality would be necessary

With regard to the resistance and resilience of the executing agency and BTS to future risks, the lack of qualified specialists and the high staff turnover pose a challenge. The lack of local specialists in urban water management is structural, as hardly anyone opted for this career path in the 1990s due to the limited future prospects at the time. The lower salaries compared to the private sector also play a role here.

The infrastructure to be operated is becoming increasingly extensive as urban development in Batumi progresses, and once the major investment programmes have been completed in the coming years, the focus of the city and BTS will have to shift away from building new facilities towards sustainable asset management. As spending on maintenance has been structurally inadequate in recent years and the issue of maintenance is generally approached reactively rather than preventively, a change in mentality is necessary in order to be able to maintain the level of service sustainably in the future and adapt to changing conditions. This change in mentality was constantly stimulated by the successive FC project phases. In the course of Phase V, in particular through the creation of the "Sustainable Asset Management Plan", this suggestion will be further concretised.

Although the basic functionality of the plants was mostly given during the site visits, some significant maintenance deficits were identified. At the large wastewater treatment plant, problems were found with the SCADA control system and the connected measuring devices, the automatic sampling devices and the operation of the sludge treatment system. Some measuring devices at the drinking water facilities (e.g. flow meters at the Mejiniskali well field and the chlorine dosing system at the elevated tank in Gonio) were also no longer functional.

The operation of the District Metered Areas (DMAs) is jeopardised by the rapid development and the resulting demand, in particular by the large development projects, which represent an enormous "point demand". Out of necessity, subsequent cross-connections between different DMAs were made after the completion of Phase III to meet the increasing demand. This jeopardises the reliable water supply for the entire urban area. A hydraulic model for the drinking water network is available in principle. However, due to a lack of personnel and expertise, this model is not used when making decisions about new connections. In addition BTS is not proactively involved in the planning of such major new development projects, but cannot refuse to connect to the network. Better co-ordination between the planning of urban development measures and urban supply infrastructure at city administration level is required here but is not foreseeable based on the discussions held.

Before the project, part of the local population lived without a centralised water supply/wastewater infrastructure and instead obtained their drinking water from alternative sources (e.g. illegal connections, own wells). To a certain extent, there were also decentralised solutions for wastewater disposal (e.g. septic tanks). In the event of an interruption in supply or disposal - which is not currently expected - the population can fall back on this experience. However, as Batumi is a very water-rich region, we assume that the drinking water supply will not be jeopardised in the foreseeable future.

17. Contribution to supporting sustainable capacities

The measure has clearly strengthened the capacities of the target group and the executing agency in order to maintain the positive effects of the measure over time. The CM consultant provided BTS with comprehensive support during project phases I-IV. The support was provided in many different areas and has led to observable positive results.

However, the mission found that some of the initiatives and impetus provided by the CM consultant were not implemented sustainably by BTS. The main indicator of this is that the efforts undertaken and results achieved as part of the consulting services were only partially continued during the absence of the AMC from June 2022 to January 2024. For example, the use of job descriptions and the increase in transparency in the recruitment process were not continued. The budget and expenditure for maintenance also continued to fall short of the technical requirements.

For Phase V of the FC programme, which is currently being implemented, the same CM consultant was commissioned as in the previous phase. As part of this follow-up phase, an important contribution to the optimisation of BTS services is still planned. At the same time, the presence of the CM consultant also relieves some of the pressure on the BTS management to make strategic adjustments to the company itself. An exit strategy for the CM consultant was not yet relevant from the perspective of the BTS management at the time of the EPE. Even if the CM concept for Phase V contains approaches in this direction, this issue should be addressed regularly and at an early stage in each ongoing project.

The question of strengthening resilience to risks that could jeopardise the impact of the project can be answered in a similar way. The measure has made a significant contribution to resilience, but not all of the initiatives triggered by the measure have been institutionalised by the executing agency from today's perspective.

18. Durability of impacts over time

Batumi has a strategic location for tourism and transport, as it is close to the border with Turkey and is well connected to other parts of the country by airport, seaport, railway and motorways. There are therefore good conditions for economic stability and efficiency.

Georgia's economic performance is currently not sufficient to significantly increase the currently low per capita income and prosperity of the population. The government is not in a position to fully cushion economic challenges and shocks. Inflexibility in the face of changing economic circumstances and frequent politically motivated decisions that disregard economic aspects are hampering long-term economic development.⁴

In terms of foreign policy, Georgia is caught between Russia's sphere of influence and the EU. There is an association agreement with the EU. This is accompanied by an association agenda that serves as a blueprint for reforms. At the same time, there is great dependence on Russia, which is still illustrated today by the territories of Abkhazia and South Ossetia, which have been annexed since 2008. The Georgian government's ability to master this political balancing act and the development of relations with Russia will be decisive for the political and economic development as well as the social climate in Georgia.

Over the past two years, Georgia has missed numerous opportunities to make progress towards becoming a more inclusive, secure and prosperous state (BTI Country Report 2024). Georgia ranks 58th out of 137 in the political transformation category (2022: 54th). The rating for economic transformation has improved slightly (47th out of 137 compared to 52nd in 2022).

The increasingly autocratic traits of the national leadership cloud the outlook for the political future and Georgia's potential accession to the EU. National parliamentary elections were held in October 2024, in which the ruling party "Georgian Dream" received a majority based on the official figures. The ruling party is also the mayor of Batumi. At the time of writing, the outcome of the election is disputed due to alleged irregularities.

Political stability and prosperity are factors that influence the sustainable quality of water supply and wastewater disposal. However, as they are part of the basic municipal supply, it can be assumed that this will always be a priority to some extent, regardless of the political position of those responsible. With regard to sustainable and environmentally friendly urban development, no clear strategy of the city can be recognised in the context of the EPE. In this context, well-funded property developers tend to provide the main impetus. The extent to which inclusive and sustainable decisions can be made for the general public depends on civil society and politics.

The future social and economic climate in Georgia, in the past a driver for the emigration of many Georgians, will have a direct impact on the availability of skilled labour. A pragmatic reform of the public procurement system would enable BTS to award contracts more easily and thus remove one of the current hurdles to sustainable operation and maintenance.

The future coverage of operating costs will continue to be significantly influenced by the level of tariffs; currently, operating costs are covered by tariff revenues. The decision on a potential tariff increase does not lie with the city. It can only apply to the regulator for an increase. In the past, the process of enforcing higher tariffs has proven to be lengthy and tough. Based on this experience and the recent tariff increase (2022), the chances of a timely increase in tariffs are considered low. However, it has been shown in the past that the city of Batumi has compensated for deficits in BTS's operations with subsidies (this was the case in 2015-2021).

More holistic urban planning and corresponding processes at city administration level would enable BTS to better anticipate future developments so that the investment and operational planning of the water supply on the one hand and urban and spatial planning on the other can be harmonised in the longer term. This would make it more likely that bottlenecks, as described in the example of the DMAs, could be avoided in future.

As mentioned above, the support provided by the executing agency and BTS through the programme has led to observable positive results. The investments in infrastructure have generally been implemented in a satisfactory quality and as such represent a sustainable contribution to the current and future water supply and wastewater disposal. Expertise, continuity and commitment are required at the level of decision-makers in the municipal administration and at BTS in order to guarantee a good quality of supply in the medium and long term and to adapt to any changes in the general conditions. The valuable contribution made by the CM consultant and the implementation consultant through the FC projects can be seen as a catalyst in this process. However, it can only bear fruit if the relevant decision-makers at BTS and the city administration can use this opportunity to internalise this

⁴ BTI Country Report Georgia 2022

expertise in the long term. This potentially endangered internalisation was recognised in the ongoing phase and countermeasures were identified. Whether internalisation will ultimately be successful depends on the attitude of the decision-makers. German development cooperation can contribute to this through constant and early persuasion.

At the BTS level, the positive effects of the project could not be fully consolidated and institutionalised following the demobilisation of the CM consultant. A vision for the strategic development of BTS as a utility company is lacking at management level. Frequent personnel changes and the sometimes inadequate technical expertise of the management were identified as possible causes. In addition, the structure of BTS does not provide for a traditional separation between the Management Board and the Supervisory Board, which makes it difficult to set and monitor targets for senior management.

Rating summary

BTS and the municipal administration are generally in a position financially, organisationally and in terms of personnel to maintain the positive effects of the project. However, due to the lack of skilled labour, frequent personnel changes in management and the lack of an institutional vision for the future at BTS, corresponding risks remain. The programme has clearly made a contribution to building sustainable capacities, although the level of ambition could not be fully maintained after the end of the project. Maintaining the positive results of the programme also depends on the economic and political context, which the EPE classifies as stable with a slightly negative outlook. As far as the durability of the positive effects in relation to water/wastewater services is concerned, the availability of skilled labour and the further strategic orientation of BTS are seen as crucial for sustainability. The sustainability of the programme is rated as having limited success in the context of the EPE.

Sustainability: 3

Overall rating: 2

Overall, the programme cannot be viewed in complete isolation from the previous project phases, as the measures build on each other and are/were partly interdependent. It is therefore not always possible to clearly differentiate between the impacts of the different phases. Overall, the FC programme has had a significant impact to date. Even if the marginal impact of Phase IV is, as expected, somewhat smaller compared to the impact of the first two phases, a clear impact can also be demonstrated and quantified for these phases. The fact that four successive projects with the city of Batumi have been implemented to date demonstrates the success of the approach. It also makes sense from a development policy perspective to continue supporting the city of Batumi in achieving its water supply and wastewater disposal goals. At the same time, the question arises as to how the internalisation of the process improvements initiated by the operator can be made sustainable so that an exit strategy for technical support from FC can be prepared step by step.

Contributions to the 2030 Agenda

The programme supports the achievement of the Millennium Development Goals (in particular MDG 7, to improve environmental protection), primarily through contributions to water and resource conservation and the preservation of biodiversity in the Black Sea. The connection to a functioning water supply and wastewater disposal system also improves basic sanitation and thus the quality of life of the population, especially women and girls in this region, who are generally responsible for caring for the sick (partly MDG 5). In addition, the project creates the basic conditions for the further expansion of tourism in the city of Batumi and thus contributes to the economic development of the entire region and to poverty reduction through rising incomes (MDG 1).

The concept is based on a holistic approach to sustainable development. The programme includes investments in both water and wastewater infrastructure and is socially and ecologically sustainable in that the wastewater produced is also treated appropriately in the treatment plant in accordance with the design. The programme supports the city of Batumi in creating water and wastewater infrastructure for all residents, which also has a social dimension. The measure is flanked by a complementary measure that is designed and organised for sustainability (sustainable operation of the financed infrastructure, sustainable development of the operator). In this way, investment and operation are conceptually addressed holistically.

The programme has contributed to sustainable and environmentally friendly urban development, to improving wastewater disposal and the living conditions of the population of the city of Batumi and the surrounding supply areas. It can be argued that the development of the city of Batumi would not have been possible without the FC-financed investments in municipal infrastructure.

Project specific strengths/weaknesses and general conclusions/lessons

The strengths and weaknesses of the project include in particular :

Strengths:

- Clear division of tasks between PEA/BTS and implementation consultant and coordination with the other departments of the city administration by the PEA Working Group
- Consistent long-term monitoring of the project by the same implementation and CM consultant

Weaknesses:

- In recent years, the city's investment budget for water/wastewater infrastructure has been drawn almost entirely from FC loans. The implementation consultant was therefore responsible for the implementation of the investments throughout. At the same time, the CM consultant was responsible for operational optimisation during this time. As long as there is no clear exit strategy for this consultant support, there is little incentive for the project executing agency and operator to anchor the resulting experience and technical expertise internally.
- The impact of this fourth phase of the FC project on the quality of life of the residents of Batumi is lower than in the first two phases. The initial situation of the fourth phase was an already considerably improved service quality in water supply and wastewater disposal compared to the situation at the beginning of the first phase. The marginal benefit was therefore (inevitably) lower than in the previous phases.

Conclusions and lessons learned:

- In addition to the absolute connection figures, analysing the connection rate as an indicator is helpful for tracking the penetration of the supply effect.
- Although the long-term support of projects by external consultants in several phases can improve the quality of implementation and operation, there is a risk that the relevant experience and capacities are not sufficiently internalised by the project sponsor/operator.
- Where possible, it makes sense to work towards strengthening the institutional position of utility companies so that they can play a formative role in urban planning or at least anticipate developments.

Evaluation approach and methods

Methodology of the ex-post evaluation

The ex-post evaluation follows the methodology of a rapid appraisal, i.e. a data-supported, qualitative contribution analysis and represents an expert judgement. This involves attributing impacts to the project through plausibility considerations based on the careful analysis of documents, data, facts and impressions. Where possible, this also includes the use of digital data sources and modern techniques (e.g. satellite data, online surveys, geocoding). Causes of any contradictory information are investigated, attempts are made to eliminate them and the assessment is based on statements that are - if possible - confirmed by several sources of information (triangulation).

Documents:

Final inspection report, Final report implementation consultant, final report accompanying measures consultant, module proposal, monthly and quarterly reports consultant, Inception Report Phase V, Bertelsmann Transformation Index Report

Data sources and analysis tools:

Household surveys as part of the accompanying measure, BTS website and MIS

Interview partner:

Vice Mayor Batumi, General Director BTS, PEA Executive Committee, BTS (Dpt Director Finance, Dpt Director Water Supply, Dpt Director Wastewater, Head of Procurement Dept, Head of IT Dept, Head of Supervision Dept, Head of Administration dept, HR Department, IT/Planning Department, Construction Department, Supervision and Monitoring Department, Billing Department, Drinking Water Laboratory, Wastewater Staff, Drinking Water Staff), Municipality (Head of Finance, Municipal Service Centre, Architectural and Urban Development Department), Residents (minimum three per sub-area), Government of Ajara (Head of Tourism), Implementation Consultant (TL and Team), Accompanying Measures Consultant (TL and Team)

The analysis of impacts is based on assumed interdependencies, documented in the impact matrix developed during the project appraisal and, if necessary, updated during the ex-post evaluation. The evaluation report presents arguments as to why which influencing factors were identified for the identified results and why the analysed project presumably made which contribution (contribution analysis). The context of the development project is taken into account with regard to its influence on the results. The conclusions are set in relation to the availability and quality of the data basis. An evaluation design is the reference framework for the evaluation.

For project evaluations, the method offers a - on average - balanced cost-benefit ratio, in which the knowledge gained and the evaluation effort are in equilibrium, and allows a systematic assessment of the effectiveness of FC projects across all project evaluations. The individual ex-post evaluation can therefore not fulfil the requirements of a scientific assessment in the sense of a clear causal analysis.

The following aspects limited the evaluation:

The impact of the programme could not be consistently differentiated from the impacts of the previous phases within the set framework of the EPE

Methodology of the performance evaluation

A six-point scale is used to assess the programme according to the OECD DAC criteria. The scale values are assigned as follows:

- Level 1** Very successful: result significantly above expectations
- Level 2** Successful: result fully in line with expectations, without significant deficiencies
- Level 3** Moderately successful: below expectations, but positive results dominate
- Level 4** Moderately unsuccessful: is significantly below expectations and negative results dominate despite recognisable positive results
- Level 5** Unsuccessful: despite some positive partial results, the negative results clearly dominate
- Level 6** Highly unsuccessful: the project is useless or the situation has worsened

The overall rating on the six-point scale is based on a project-specific weighting of the six individual criteria. Levels 1-3 of the overall rating indicate a "successful" project, while levels 4-6 indicate an "unsuccessful" project. It should be noted that a project can generally only be considered developmentally "successful" if the achievement of the project objective ("effectiveness") and the impact on the overall objective ("overarching developmental impact") as well as the sustainability are rated as at least "Moderately successful" (rating 3).

The annex to this report is available upon request (German only).

Abbreviations:

ADB	Asian Development Bank
PCR	Project completion report
AWA	Ajara Water Alliance
GDP	Gross Domestic Product
AM/CM	Accompanying measure/Complimentary Measure
BOD	Biological oxygen demand
BMZ	Federal Ministry for Economic Cooperation and Development
COD	Chemical oxygen demand
DAC	Development Assistance Committee
EIB	European Investment Bank
EPE	Ex-post evaluation
ESMP	Environmental and Social Management Plan
EUR	Euro
FC	Financial cooperation
FC E	FC Evaluation
GIZ	Society for International Cooperation
GEL	Georgian Lari
HDI	Human Development Index
LCD	Litres per Capita per Day
NRW	Non-Revenue Water
PEA	Project executing agency
PP	Project review
PPB	Project appraisal report
PP	Project proposal
TSS	Total suspended solids
TC	Technical cooperation
UNDP	United Nations Development Programme
USD	US Dollar

Imprint

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