Ex post evaluation – Kosovo

Sector: 14020; Water, sanitation and sewage management
Programme: Water Supply and Sewage Disposal in Pristina (Phase I), BMZ no. 2008 65 469* (invt.), BMZ no. 2008 70 071 (CM); (1) Water Supply and Sewage Disposal in Pristina (Phase II); BMZ no. 2009 65 749 (KfW), BMZ no. 2020 60 085 (EU); (2) Water Supply and Sewage Disposal in Pristina (Phase III); BMZ no. 2010 66 885 (KfW), BMZ no. 2020 60 887 (EU) (3)
Implementing agency: Regional Water Company Pristina (RWCP)

Ex post evaluation report: 2019

All figures in EUR million	Phases I-III, invest. (Planned)	Phases I-III, invest. (Actual)	Phase I, CM (Planned)	Phase I, CM (Actual)
Investment costs (total)	55.96	54.34	1.50	1.50
Counterpart contribution (total)	7.70	6.10	0.00	0.00
Funding (total)	48.26	48.24	1.50	1.50
of which BMZ budget funds (total)	32.50	32.50	1.50	1.50

*) Random sample 2017

Summary: The Water Supply and Sewage Disposal in Pristina projects (phases I-III) continued the work undertaken in previous German development cooperation (DC) and World Bank measures. The projects focused on measures to improve the water supply in Pristina and surrounding towns and villages located in the RWCP supply area. During phase I, a complementary measure (CM) was also implemented to assist with the development of effective institutional and organisational structures for water supply and sewage disposal. To facilitate the investments, EUR 32.5 million was provided in Financial Cooperation (FC) funding (EUR 6.5 million on a grant basis and EUR 26 million as a loan), in addition to a EUR 1.5 million grant for the complementary measure. Meanwhile, the executing agency made its own EUR 6.1 million contribution towards the costs.

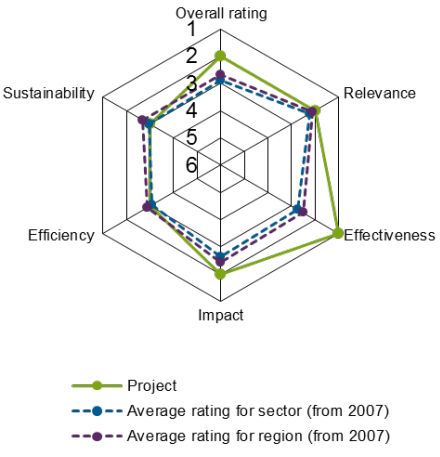
Development objectives: The Water Supply and Sewage Disposal in Pristina projects (phases I-III) aimed to help improve the living conditions of the population in Pristina (impact). The objective for phases I and II was to sustainably improve the water supply and sewage disposal situation in the city of Pristina (outcome). Phase III was intended to ensure that the public in Pristina and surrounding communities would have a cost-effective and constant water supply (outcome) and to protect the Batlava and Badovc reservoirs from overuse by using a new water resource.

Target group: The programme's target group comprised residents of Pristina and the population living in the surrounding area who were connected to the central water supply.

Overall rating: 2 (phases I–III)

Rationale: Overall, the three projects still have satisfactory impacts. The RWCP's sustainable operation of the water supply is guaranteed to continue in the years ahead, even without the financial support of international donors. All the FC-financed investments are generally in good condition and are adequately maintained. The projects under evaluation, however, made no notable contribution to reducing the high total level of non-revenue water (NRW) in the project region. Rough estimates put administrative and technical NRW at 35% and 23%, respectively. From today's perspective, if we accept these figures, demonstrable improvements would have required a significantly larger investment and, in particular, much stronger involvement from the RWCP in reducing illegal water withdrawal.

Highlights: As part of a research collaboration with the University of Cologne, it was found that nudges (small, targeted interventions) were able to influence RWCP customers' payment habits (e.g. by adding short messages to their bills).



Rating according to DAC criteria

Overall rating: 2 (all three projects)

Ratings:

Relevance	2
Effectiveness	2
Efficiency	3
Impact	2
Sustainability	3

Breakdown of total costs (phases I–III)

		Project phase I, invest. (Planned)	Project phase I, invest. (Actual)	Project phase I, CM (Planned)	Project phase I, CM (Actual)
Investment costs (total)	EUR million	7.00	6.57	1.50	1.50
Counterpart contribution	EUR million	0.50	0.50	0.00	0.00
Funding	EUR million	6.50	6.07	1.50	1.50
of which BMZ budget funds	EUR million	6.50	6.07[a)]	1.50	1.50

		Project phase II (Planned)	Project phase II (Actual)	Project phase III (Planned)	Project phase III (Actual)
Investment costs (total)	EUR million	17.36	17.54	31.60	30.23
Counterpart contribution	EUR million	0.50	0.27	6.70	5.33
Funding	EUR million	16.86	17.27	24.90	24.90
of which BMZ budget funds	EUR million	6.00	6.00 0.43[a)]	20.00	20.00

a) In total, EUR 0.43 million was used from phase I funds to finance phase II (see final review report on phase II dated 6 September 2018)

General conditions and classification of the project (for complex projects only)

Since the end of the Kosovo War in 1999, the Federal Republic of Germany has been directly involved in rebuilding the country, especially with emergency aid measures in rehabilitating the water supply infrastructure. The measures were later aimed at securing the supply and disposal infrastructure in the long term via investments in expanding the water supply, with due consideration of EU standards. The Water Supply and Sewage Disposal in Pristina measures (phases I–III) continued a series of previous emergency aid measures by German development cooperation and the World Bank (World Bank's Rehabilitation of Urban Water Supply I & III Water Supply Project; KfW's Drinking Water/Sewage Rehabilitation V, Regional Water Supply & Sewage Disposal VI, Sewage Disposal in Southwest Kosovo, phase II (Prizren), Sewage Disposal in Southwest Kosovo, phase III (Gjakova) and Sewage Disposal in Southwest Kosovo,

phase IV (Peja)). The United Nations Mission in Kosovo (UNMIK) functioned as a transitional administration after the end of the war, with government and administrative responsibilities being gradually transferred to the Kosovan authorities, in some cases accompanied by considerable upheaval in the country's general institutional and regulatory conditions. In 2008, Kosovo declared its independence, which has been recognised by over 100 countries to date. UNMIK nevertheless remains in the country and continues to fulfil its mandate as a neutral actor. After the end of the war, administrative responsibility for the water supply resided with the Kosovo Trust Agency (KTA). The dissolution of the KTA in 2008 and the associated restructuring of the water sector, along with the additional and expanded supply needs, created immediate pressure to change the regional utilities that were responsible. The completion of the Water Supply and Sewage Disposal in Pristina (phase III) project marked the end of all the FC-financed projects aimed at modernising the water supply. The cooperation is now concentrating on promoting projects to modernise sewage disposal. For the city of Pristina, the engineering services are currently being put out to tender for a feasibility study as part of the Sewage Disposal Kosovo I/II project.

Relevance

The Water Supply and Sewage Disposal in Pristina projects (phases I–III) were linked to previous emergency aid programmes to stabilise the drinking water supply and sewage disposal over the long term in the programme areas. These were also embedded in UNMIK's and the KTA's efforts regarding the consolidation and sustainable operation of the water utilities. The projects were closely coordinated with other measures to safeguard the water supply, such as the FC projects to improve the water supply in the supply areas of the Hidrodrini (Peja), Hidroregjioni Jugor (Prizren) and Radonqi (Gjakova) waterworks, as well as the World Bank's Pilot Water Supply Project. The sectoral projects were regularly coordinated in donor rounds. Although the projects' titles suggest a sewage component, essentially only measures specific to the water supply were implemented.

The problems detailed in the project proposal for phase I were correctly identified as far as the utility's low collection rate (around 66%), operating cost recovery (around 103%, with insufficient maintenance),[1] the short supply availability (around 12 hours a day) and the high levels of technical NRW (around 44%) are concerned. In addition, at the time of the programme appraisal, there were shortcomings with the supply to a variety of rural areas in the programme region, with an average public supply network connection rate of just 86%.

The complementary measures for phase I were an appropriate means of helping to ensure continued improvement in the collection rate and operating cost recovery. The relatively small, dispersed investments envisaged in the project proposal for phase 1 were unable to effectively respond to the main technical problems that have been outlined. This was a result of the insufficient basic data and an overestimation of the likely impacts of the intended measures at the time of the project appraisal. However, from today's perspective, a consistent effort to achieve the intended improvements would have required a much larger investment (as was ultimately made in phase II). The impact framework underlying the project design appears to rest on sound logic. The same is true for the impact chain, which was intended to both increase the supply quality and reduce raw water consumption thanks to the technical improvements, making a positive difference to the population's living conditions and to sustainable use of the available water resources.

In addition, the project proposal for phases I and III assumed a relationship between the quality of the water supply and the country's economic development potential (e.g. business openings in the industrial sector). Per se this premise also appears to be based on sound reasoning, although the actual number of new firms operating in the region depends on a variety of other factors.

In summary, we rate the relevance of the projects as good.

Relevance rating: 2 (phases I–III)

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[1] Without taking depreciation, amortisation and impairments into account, the waterworks recovered 103% of its operating costs. However, analysis of the company's income statement in 2007 indicated that fee income increased at a higher rate than repair and upkeep costs. This was on account of the improved collection rate and reduced expenditure on repairs and maintenance (PP dated 14 October 2008).

Effectiveness

Indicators were formulated to review the programme target achievement in phases I–III, with their level of achievement already determined at the time of the final reviews. These were reviewed again during the ex post evaluation. The table below contains a summary of the review results for the three projects.

As of the ex post evaluation, there is now a guaranteed 24-hour-a-day water supply from the water supplier serving Pristina and surrounding communities (indicators 1/I, 1/II and 2/III). However, up to the time of the evaluation, the public utility also had to contend with significant levels of NRW (58%). This stems from the poor condition of the water supply systems in the supply areas (technical NRW) and, more significantly, unauthorised water withdrawal. Nonetheless, less than 30% of the technical NRW reduction objective was achieved (as defined in the indicators). As of the project appraisal, this was reduced from 44% to 23%[2] (indicators 2/I and 2/II). The water suppliers' maintenance units primarily devote their attention to urgent, ad hoc repairs. For instance, there is no established scheme for repairing and calibrating domestic water meters, even though the necessary arrangements were made for this as early as phase II.

Measurement of domestic water consumption is occasionally affected by weaknesses among suppliers, with around 4% of consumption not registered by water consumption meters. A flat rate payment is charged to each of these households instead of them being billed precisely for individual water consumption. This results in uncertainty in measuring actual water consumption and must be taken into account when examining the consumption figures. Per capita household consumption has decreased from 139 litres per person per day in 2007 to an acceptable figure of 96 L/p/d in 2019 (indicators 3/I and 3/II). The share of the population obtaining their water from the central supply network has increased to 95%, while the remaining 5% use private wells or off-grid systems (indicators 4/I and 4/II). Once the Shkabaj water treatment plant was opened, it became possible to start reducing the withdrawal of potable water from Batlava Reservoir (indicator 6/I). Using the appropriate laboratory equipment, the RWCP was able to take regular quality measurements and demonstrate that the treated water at the Shkabaj plant was 100% compliant with the WHO quality standard (indicator 1/III). The treatment plant was running at 74% capacity two years after being put into operation. We can assume that this figure reached the required 75% in the third year (indicator 3/III). The sewage discharge points into the Iber Canal (raw water for the Shkabaj plant) were eliminated in the meantime, significantly reducing the risk of the untreated water becoming contaminated (indicator 4/III).

(Indicators 5/I and 5/II). As of the ex post evaluation, all the water suppliers' utilities are being appropriately operated and maintained. Investments financed through the FC projects were visited and found to be in a good state of repair.

According to statements taken from supplier representatives, members of the target group and a representative from the majority-Serb town of Gračanica, there are no indications that any ethnic groups have suffered discrimination in access to water services.

In general, there is now an appropriate connection rate to the central water supply, a consistent water supply, an adequate water quality, a well-run business operation and proper maintenance of the public utility. Despite the relatively high production costs, the supplier manages to deliver a high operating cost recovery rate (currently 162%, not including depreciation), which is a result of the support the RWCP received via the complementary measure (indicator 5/I und 5/II). Since the costs of depreciation have risen particularly sharply in the last two years, the company's 98% operating cost recovery rate including depreciation fell just short of the 100% mark in 2018. In all cases, we rate the extremely high NRW levels (caused by the poor condition of the pipe system in the supply areas) negatively, along with the high prevalence of illegal water withdrawal from the supply network.[3]

The attainment of the programme objectives defined during the programme appraisal can be summarised as follows:

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[2] The technical NRW detected (23%, with total NRW accounting for 58%) is based on a water inventory created by the RWCP.

[3] In this context, it is worth revisiting the question of why only the reduction in technical NRW, instead of overall NRW, was selected as the indicator. The project included both technical investment measures and complementary measures, so the reduction in overall NRW would have been an appropriate indicator.

	Indicator	Measurand	Status on examination	Target (planned)	Status EPE 2019	Achievement of objectives
	Project Phase I				**Ex post evaluation (2019)**	
1	Increased security of supply	h/day	12	22	24	yes
2	Technical water losses are reduced	%	44	30	23[1)]	yes
3	Reduced water consumption by households	l/c/day	139	125	96	yes
4	Proportion of the population centrally supplied with water has increased	%	85	95	95	yes
5	Cost coverage (running costs)	%	103	100	162	yes
6	Drinking water abstraction from the Batlava-reservoir reduced	m^3/year	23.489.554	18.920.578	18.292.768	yes
	Project Phase II				**Ex post evaluation (2019)**	
1	Reliable water supply	h/day	12	22	24	yes
2	Technical water losses are reduced	%	40	25	23[1)]	yes
3	Reduced water consumption by households	l/c/day	140	125	96	yes
4	Proportion of the population centrally supplied with water has increased (in Prishtina)	%	85	95	95	yes
5	Cost coverage (running costs)	%	-	100	162	yes
6	Number of flood events is reduced (as measured in Dodona)	Quantity	27	5	0	yes
7	Raw water quality in the Batlava-reservoir meets the international standards for drinking water reservoirs	biochem. Analysis	-	complies with EU-Standards	n/a	n/a[2)]
	Project Phase III				**Ex post evaluation (2019)**	
1	Water quality after treatment[3)]	-	n.a.	WHO	compl. WHO	yes
2	Continuity of water supply in the year after commissioning[4)]	h/day	n.a.	22[4)]	24	yes
3	Capacity utilisation of the treatment plant in the third year after commissioning (annual average)[5)]	%	n.a.	75	74	(yes)
4	Waste water discharges into the Iber Canal are removed	-	n.a.	yes	yes	yes

1) NRW = 58%: Assumption 35% are administrative and 23% are technical losses (Estimate RWCP 2018, see Annex 3.5).
2) The contamination of the water in the Batlava-reservoir with faecal coliform germs is still high, but is significantly reduced by pre-chlorination of the raw water in the water treatment plant.
3) Complies with WHO standards as of the commissioning of the new treatment plant.
4) 22 hours per day (at least 250 days a year).
5) One year after commissioning, capacity utilisation was 70% (final inspection in 2018 and commissioning in 2017). In June 2019 the capacity utilisation rate was 74%. However, the target value of the relevant indicator should not be met until 2020.

Effectiveness rating: 2 (phases I–III)

Efficiency

In terms of achieving the results above at minimal cost (production efficiency), it is evident that the delays – sometimes significant in length – had adverse effects. Specifically, the delays brought about a rise in the costs for consulting services (from EUR 0.72 million to EUR 1.08 million in phase I and EUR 2 million to EUR 2.6 million in phase II), which consequently accounted for around 16% (phase I) and 15% (phase II) of the total financing amount. Delays were particularly lengthy in phases I and II, lasting for 33 months during phase I, 45 months during phase II and 20 months during phase III – equivalent, on average, to the implementation period taking almost 70% longer than planned. This did not increase the total project costs, although the corresponding ratios for investment expenditure were reduced. Engineering costs were significantly lower as a percentage of total costs (6%) in the phase III project, which was largely thanks to the turnkey tender for the Shkabaj water treatment plant. Construction delays were partly due to negligence on the part of the construction firms and partly caused by the RWCP's difficulty maintaining property rights over pipeline routes and other structures. With total costs of EUR 55.7 million and 493,000 residential customers supplied (2019), the specific investment costs came to EUR 123 per person. This outlay achieved an outsized impact in terms of supply reliability, connection rate, technical NRW and cost recovery.

Encouragingly, the collection rate – identified as problematic during the project appraisal – has been consistently increasing for ten years, rising from 66% to 96%. The improvement in the collection rate and payment habits of RWCP customers was also the subject of a research collaboration with the University of Cologne. This involved studying a random sample of 11,800 customers to see how various nudges would affect the way they paid their water bills. For instance, bills were stuck to some customers' doors instead of being posted through their letter boxes and brief messages were attached to some customers' bills, aimed at appealing to their sense of responsibility (e.g. "You are a responsible member of the public. Please pay for the water you have used.") The researchers noted that the customers' payment habits improved by up to 62% depending on the type of nudge and the wording of the message (positive/negative). The study was initially conducted over a two-month period in 2016, although the RWCP states that it has continued with this nudge approach ever since, achieving successful results. However, it is impossible to detect a direct impact on collection efficiency (increasing since 2008) and accounts receivable (declining since 2015) from the series of figures. The key problems defined in the Relevance section were appropriately addressed via the projects. As a result, the projects contributed to the effective achievement of the development objectives. In particular, the improved collection rate is an indicator of the high allocation efficiency of the three projects, which make a significant contribution towards attaining the development objectives defined during the project appraisal.

The number of residents in the RWCP's supply area increased from around 380,000 in 2008 to 520,000 in 2019. This is equivalent to an average annual growth rate of 3.1%. This population growth, in turn, put strain on the outdated water supply networks. Since 2008, the average per capita household consumption has fallen from 139 litres per person per day (2007) to 96 L/p/d, a trend which coincided with the water supply becoming continuously available for 24 hours a day. On the other hand, overall NRW accounted for 58% of the total, a figure which remains too high.

In relation to the impacts made, the total costs in phases I–III are in line with expectations without significant deficiencies.

Efficiency rating: 3 (phases I–III)

Impact

No specific indicators were defined for development objective achievement. Instead, it was assumed that the development objective would be fulfilled if the project objectives for Phases I–III were achieved. This also appears to be a sound line of reasoning from today's perspective.

As shown in the Effectiveness section, the target values were officially met for all three projects' objective indicators – and, in turn, for the development objective encompassing phases I–III. The suppliers were consistently able to verify a high quality of drinking water with very good results by regularly extracting water samples. In any rare instances where action is needed, the supplier immediately intervenes to minimise risk by temporarily discontinuing water production (e.g. when there is an increased concentration of

suspended solids in the Iber Canal upstream of the Shkabaj treatment plant). The drinking water is delivered to the supply network around the clock under sufficient pressure. The consistently high water pressure in the pipes substantially reduces the risk of harmful germs and bacteria accumulating. Appropriate chlorination also helps to increase the quality of the drinking water, which in turn improves the population's living conditions.

In terms of the objectives for economic development, no points of reference could be found, as of the ex post evaluation, to show that more companies are setting up shop in the region due to the improved water supply. Nor was there any indication that not implementing the projects would have had a negative effect on business activity in the region.

The investment measures were very positively received by the technical director for the majority-Serb town of Gračanica, which has a population of around 25,000 and is also served by the RWCP. In his interview, the director also highlighted the supply reliability and good water quality that are now in place. Both the supplier and the Gračanica representative confirmed that they enjoyed a strong working relationship. It is clear that there is no discrimination in access to water services stemming from ethnic divides.

The investments to protect the Iber-Lepenc Canal, which were envisaged in the project appraisal report for phase III, were not implemented. However, the RWCP was involved in a task force with the canal's operator (Iber-Lepenc Utility). The joint unit inspected the canal and worked together with the relevant local authorities to close down sewage discharge points it had identified. In addition, a parallel project financed by the World Bank intends to carry out a large-scale action plan to protect the canal in the near future (engineering services currently out to tender).

Impact rating: 2 (phases I–III)

Sustainability

As explained in the Effectiveness section, all the company's operating and maintenance costs are covered by its tariff revenue (see indicators 5/I and 5/II), while almost all its depreciation was recovered at the time of the evaluation. We would also note that the comparatively high production costs in Pristina result from the relatively expensive water treatment and pumping processes, making the prime costs for drinking water in the capital the highest among all eight utilities in Kosovo.

The RWCP's sustainable operation of the water supply is guaranteed to continue in the years ahead, even without the financial support of international donors, due to the staff's sufficient levels of skill and motivation along with the company's revenue surpluses. The RWCP's FC-financed investments are generally in good condition and are adequately maintained. It is safe to assume that the RWCP will also be able to finance replacement investments in the future, albeit to a limited extent.

However, additional action urgently needs to be taken on the supply network to reduce the high overall levels of NRW (58%). A serious risk is posed by the levels of non-revenue water, which are caused by the poor state of the pipe system in parts of the supply areas (around 23% of technical NRW), while unauthorised water withdrawal is also a significant contributor (around 35% of administrative NRW). The RWCP estimates that authorised unbilled water consumption (e.g. by mosques) only represents just less than 1% of unaccounted for water. Given this state of affairs, comprehensive NRW reduction measures would be necessary to safeguard efficient operation in the future, especially in light of the RWCP's relatively high production costs.

Sustainability rating: 3 (phases I–III)

Notes on the methods used to evaluate project success (project rating)

Projects (and programmes) are evaluated on a six-point scale, the criteria being **relevance, effectiveness, efficiency** and **overarching developmental impact**. The ratings are also used to arrive at a **final assessment** of a project's overall developmental efficacy. The scale is as follows:

Level 1	Very good result that clearly exceeds expectations
Level 2	Good result, fully in line with expectations and without any significant shortcomings
Level 3	Satisfactory result – project falls short of expectations but the positive results dominate
Level 4	Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results
Level 5	Clearly inadequate result – despite some positive partial results, the negative results clearly dominate
Level 6	The project has no impact or the situation has actually deteriorated

Rating levels 1-3 denote a positive assessment or successful project while rating levels 4-6 denote a negative assessment.

Sustainability is evaluated according to the following four-point scale:

Sustainability level 1 (very good sustainability): The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability): The developmental efficacy of the project (positive to date) is very likely to decline only minimally but remain positive overall. (This is what can normally be expected).

Sustainability level 3 (satisfactory sustainability): The developmental efficacy of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive developmental efficacy.

Sustainability level 4 (inadequate sustainability): The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and is very unlikely to improve. This rating is also assigned if the sustainability that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

The **overall rating** on the six-point scale is compiled from a weighting of all five individual criteria as appropriate to the project in question. Rating levels 1-3 of the overall rating denote a "successful" project while rating levels 4-6 denote an "unsuccessful" project. It should be noted that a project can generally be considered developmentally "successful" only if the achievement of the project objective ("effectiveness"), the impact on the overall objective ("overarching developmental impact") and the sustainability are rated at least "satisfactory" (level 3).